

Belaire Environmental, Inc.

Planning - Permitting - Habitat Creation

September 11, 2020

Mr. Mark Pattillo
U.S. Army Corps of Engineers
Corpus Christi Regulatory Field Office
5151 Flynn Parkway, Suite 306
Corpus Christi, TX 78411

RE: Permit Application No. SWG-1995-02221, Response to Comments

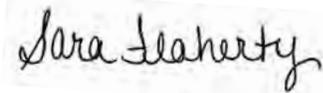
Mr. Pattillo,

The applicant, Moda Ingleside Oil Terminal, LLC (Moda), submitted the referenced application to amend U.S. Army Corps of Engineers (USACE) Permit No. SWG-1995-02221.

Public Notice was initiated by the USACE on February 6, 2020, and comments were provided to the applicant and their agent on March 23, 2020. Comments were received from U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Texas Parks and Wildlife Department, Texas Commission on Environmental Quality, and several private citizens. Due to the need to obtain Port of Corpus Christi Authority (PCCA) approval and other data, the applicant was advised to withdraw the above referenced permit application to allow time for appropriate data collection. The applicant received PCCA approval for the mitigation site and collected the necessary data to evaluate and respond to comments received during the initiation Public Notice comment period. As such, the enclosed documents include the response to Public Notices comments, a revised Alternatives Analysis, and the 12-Step Mitigation Plan.

Please note, Moda would like to reinstate the individual permit amendment application.

Sincerely,



Sara Flaherty

Encl.

Cc:
Clayton Curtis
Moda Ingleside Oil Terminal

Charles Belaire
Belaire Environmental, Inc.

List of Enclosures:

Attachment A: Response to Comments Figures

- Figure 1. Proposed Mitigation Site Survey
- Figure 2. Proposed Impacts
- Figure 3. Seagrass Survey Overview – Project Site
- Figure 4. 2018 Aerial Overview
- Figure 5. 2019 Aerial Overview
- Figure 6. 2020 Aerial Overview
- Figure 7. Aquatic Resource Delineation Overview

Attachment B: Alternatives Analysis

Attachment C: 12-Step Mitigation Plan

RESPONSE TO COMMENTS
MODA INGLESIDE OIL TERMINAL, LLC
USACE PERMIT NO. SWG- 1995-02221
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

Prepared for:
Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, TX 77002

Prepared by:
Belaire Environmental, Inc.
PO Box 741
Rockport, TX 78382



United States Fish and Wildlife Service (Service)

Service Comment 1:

The FWS requests the Applicant's Alternatives Analysis, particularly since the applicant's East Basin appears to be sufficiently large to accommodate the activities proposed by the expansion of the West Basin area.

(Corps Remark – The Alternatives Analysis furnished to the Corps in Moda's application package has been forwarded to all the resource agencies, however, additional information has been requested to address this concern. (See TPWD comments)).

Response to Service Comment 1:

A revised Alternatives Analysis (**Attachment B**), provides details of the numerous onsite and offsite alternatives that were evaluated during the project design phase. The preferred alternative (the proposed project) was selected after the applicant determined that it was the Least Environmentally Damaging Practicable Alternative (LEDPA) while also meeting the proposed project's purpose and need. As outlined within the Alternative Analysis, the East Basin was considered as an option. However, the East Basin's orientation in relation to the setback line of the Corpus Christi Ship Channel does not provide sufficient space to safely berth Suezmax vessels. Further, if constructed here, the project could only result in the addition of one berth, and therefore, does not meet the project's purpose and need.

Service Comment 2:

The applicant should provide the best management practices to be used to avoid impacts to the seagrasses during project construction activities.

Response to Service Comment 2:

The applicant proposes to implement all applicable best management practices (BMPs) to avoid impacts to existing seagrass. The applicant will require that the selected contractor install a turbidity curtain during all construction activities to protect the seagrass. Also, to further protect the avoided seagrass, the applicant will install side-slope protection adjacent to these seagrass beds. The applicant will complete a pre- and post-construction seagrass survey. While impacts to the seagrass outside of the project area are not anticipated, the pre- and post-construction surveys will provide documentation that impacts were avoided.

Service Comment 3:

In addition to the proposed slope stabilization, the applicant should evaluate and develop a plan to protect area seagrass beds immediately adjacent to the basins and along the east and west of the approach from vessel wakes.

Response to Service Comment 3:

The existing seagrass beds have persisted for decades adjacent to the existing site which includes regular nearby vessel traffic, including that from within the adjacent Corpus Christi Ship Channel. It is the applicant's engineers' professional judgement that the slope stabilization measures provide adequate protection to avoided seagrass.

Service Comment 4:

The proposed mitigation is out-of-kind. The mitigation area should be located in an area where the in-kind emergent wetlands mitigation could occur.

Response to Service Comment 4:

The applicant proposes a combination of in-kind and out-of-kind mitigation. To mitigate for approximately 8.86 acres of unavoidable impacts to submerged aquatic vegetation, the applicant proposes to mitigate in-kind by planting 20 acres of seagrass. As part of the proposed seagrass planting, an approximate 2,000 linear foot breakwater will be constructed. The construction of this breakwater will provide wind-wave dissipation to create conditions conducive for seagrass establishment. In addition to creating ideal planting area for seagrass species, the breakwater will protect approximately 2,000 linear feet of shoreline that currently supports estuarine wetlands. This shoreline has eroded approximately 130 feet since 1961, a 59-year period. This equates to a mean erosional rate of 2.2 feet per year. Based upon aerial imagery, a very conservative analysis estimates that a minimum of approximately five acres of wetlands along the immediate shoreline will be protected. However, there are more than 40 acres of estuarine wetland immediately behind the proposed breakwater within the Sunset Lake habitat. It is the applicant's position that these proposed protective measures more than compensate for the unavoidable impacts to 8.86 acres of submerged aquatic vegetation and 0.95 acres of wetland habitat.

Further, while the preservation of 70 acres of non-jurisdictional Live Oak – Red Bay Woodlands containing a mosaic of pothole wetlands is out-of-kind, this is an extremely high value habitat that is an imperiled plant community at global and state levels (Smith, et al, 2019). Additionally, the preservation area provides groundwater recharge important to the 8.94 acres of avoided estuarine wetlands along the shoreline.

Service Comment 5:

The applicant should use the established mitigation rate of 3:1 for the seagrass creation site.

Response to Service Comment 5:

The applicant proposes a mitigation plan which includes a 1.58 to 2.26:1 mitigation ratio (14 – 20 acres of seagrass) for unavoidable impacts to aquatic submerged vegetation. As illustrated in the submitted 12-Step Mitigation Plan (**Attachment B**), the proposed mitigation more than adequately replaces the lost functions and services provided by the existing seagrass at the project site. The proposed mitigation plan addresses the needs of the watershed and is consistent with the GLO's Texas Coastal Resiliency Master Plan (GLO, 2019) by providing wetland protection and shoreline stabilization adjacent to Sunset Lake. Further, once established, the seagrass beds will increase habitat quality in a non-industrial area (as compared to the industrial impact area), improve water quality through nutrient uptake and retention, sediment trapping, and carbon sequestering, and provide shoreline stabilization. In addition to the establishment of up to 20 acres of seagrass, the applicant proposed to preserve 70 acres of wooded area, containing a pothole wetland mosaic, located adjacent to the impact site. Preservation of pothole mosaic wetlands adjacent to the impact site will further replace lost functions and services by providing natural stormwater management to the area, groundwater recharge, valuable migratory bird and other wildlife habitat, removal of gaseous air pollutants, and reduced acreage of impervious cover to an area threatened by imminent development. The value of this habitat has been widely recognized. Texas Parks and Wildlife

Department (TPWD) comment to this application states, “While the woodland/pothole mosaic provides **rare habitat with significant conservation** value...” While they expressed concerns regarding replacing the lost functions, the 12-step plan includes full details regarding the determination of credits. With the combination of off-site, in-kind mitigation protection of at least five acres of eroding estuarine wetlands near Sunset Lake, and preservation of highly valued and threatened forested/pothole mosaic habitat that provides numerous benefits to the area. The proposed plan replaces the lost functions or services and complies with the mitigation policies.

Service Comment 6:

The proposed aquatic mitigation site is disjointed from the existing landscape on either side. The FWS requests that the applicant provide information on how this site will integrate with the existing landscape.

Response to Service Comment 6:

The proposed aquatic mitigation site is located in the vicinity of, and adjacent to, existing seagrass beds. **Figure 1** provides an overview of the mitigation site survey. Portions of the proposed planting area located immediately adjacent to existing seagrass beds and are expected to integrate naturally due to the area’s similar proximity to the existing shoreline, substrate compositions, elevations, good water quality, low chlorophyll a compositions, as well as other environmental factors discussed in the attached 12-Step Mitigation Plan (**Attachment C**). The portions of the proposed planting area located further to the southeast (towards the proposed breakwater), once established, are expected promote additional natural seagrass establishment in previously unvegetated bay bottom. Once the proposed planting area is established, as facilitated by the proposed breakwater, mitigated seagrass will promote higher water quality and clarity (vital for natural seagrass establishment), improved sediment trapping, and erosion control which will likely promote the natural expansion of existing seagrass beds along the shoreline. Further, the proposed mitigation site is consistent with the historical habitat at the site as the proposed planting area historically supported large dense seagrass beds.

Service Comment 7:

The NOAA and TPWD Seagrass Viewer indicate that there is already seagrass in the proposed aquatic mitigation area. If so, the area should be classified as a seagrass preservation site with the appropriate mitigation ratio. The FWS further recommends that if the site biological survey to evaluate the extent of already present habitat being completed by Texas A&M University-Corpus Christi finds the site to be suitable for seagrass, the applicant should obtain additional acreage for creation of submerged seagrass vegetation for a total of 38.0 acres (26.6 acres at a 70% success rate).

Response to Service Comment 7:

On June 24-26 and 29-30, 2020, Belaire Environmental, Inc. (BEI) conducted a seagrass, oyster and sounding survey on approximately 88.4 acres of land located adjacent to the southeast of Sunset Lake, which included the entire proposed planting area. BEI’s survey efforts found a total of 9.20 acres of existing seagrass in the area. However, only 0.16 acres of existing seagrass was observed in the proposed planting area. The applicant proposes to plant 20 acres of submerged aquatic vegetation in addition to the existing 0.16 acres of existing seagrass. As illustrated in the 12-Step Mitigation Plan (**Attachment C**), the establishment of not less than 14 acres and up to 20

acres of seagrass, combined with the proposed 70 acres of high value and threatened habitat preservation, and the protection of an eroding shoreline supporting substantial estuarine wetland habitat more than adequately replaces the lost functions and services associated with the unavoidable impacts to submerged aquatic vegetation and wetlands at the impact site.

Service Comment 8:

Modifications of the area in or near the southern edge of Sunset Lake should be thoroughly explained and closely monitored to prevent changes to the piping plovers' and possibly the red knot's mudflat feeding and roosting areas. Migrating whooping cranes may also occur in the project area. The FWS recommends continuing informal consultation on these species. Corps Remark – The Threatened and Endangered Species (T&E) information furnished to the Corps in Moda's application package has been forwarded to the FWS; however, the Corps plans to request Section 7 consultation with the FWS regarding possible T&E impacts.)

Response to Service Comment 8:

The project was designed consistent with the adjacent Texas General Land Office (GLO) breakwater, also adjacent to the same shoreline. The project utilizes the same orientation, construction materials and methods. The piping plover and red knot utilize shoreline habitat for feeding and foraging, changes in the shoreline are not expected to be adversely affected by the breakwater or seagrass planting. However, the applicant will include shoreline monitoring in its mitigation plan and will report significant changes, if any along with recommended corrective measures.

Additionally, TPWD states piping plover, "Winter habitat includes beaches, sand flats, mudflats, algal mats, emergent sea grass beds, wash-over passes, and very small dunes where seaweed (Sargassum) or other debris has accumulated sand." The project includes planting seagrass at elevations ranging from +0.7 feet NAVD 88 to -2.6 feet NAVD 88, with a mean elevation of -0.42 feet NAVD 88. The mean low water (MLW) elevation at the mitigation site is +0.42 feet NAVD 88 based upon the nearest tidal station, National Oceanic and Atmospheric Administration (NOAA) Station Number 8775296, USS Lexington TX. Therefore, the planting area is predominately situated within subtidal waters.

The applicant will make every effort to complete the project outside the whooping crane wintering season. The applicant will incorporate appropriate whooping crane protocols within the construction plans if any construction activities are to occur between October 15 to April 15. Whooping crane protocols will include:

1. Whooping crane training for all contractors or personnel to be on-site during construction activities. Training will include whooping crane identification, avoidance measures, stop work and notification procedures. The training program will be coordinated with and approved by the Service prior to conducting the training.
2. If a whooping crane is sighted within the project vicinity, the person observing the crane will immediately notify the construction supervisor. Personnel will not disturb the cranes by approaching them and all construction and other human activity carried out by or at the direction of the applicant will immediately cease within 1,000 feet of the crane. Activity will not resume until the crane has departed the project area.

3. The construction supervisor will notify the Corpus Christi Ecological Service Field Office as well as the National Whooping Crane Coordinator to notify them of any whooping crane sighting immediately.
4. A sighting log will be kept and sent via email each week.
5. Lighting will be limited to the immediate area of active construction and only be the minimal lighting necessary to comply with construction safety requirements. Shielded low pressure sodium vapor lights are recommended to minimize illumination of the wetlands and other nearshore areas.
6. All equipment over 15 feet in height and all lighting will be coordinated with the Service prior to implementing construction.

Service Comment 9:

Regarding the endangered West Indian manatee and sea turtles, the FWS recommends that the agency's recommended guidance for marine construction projects be added to the project plans. (See FWS letter for details)

Response to Service Comment 9:

The proposed project area is located in the bay system which could provide habitat for these species. However, due to the high ship traffic and fast-moving waters it is unlikely that this species will be present within the marine work area. To assure no impacts to the West Indian manatee occur as a result of the proposed project, the applicant proposes to: (a) advise all construction personnel that manatees may approach the proposed project area, (b) provide materials in English and Spanish to assist in identifying the mammal, (c) instruct all construction personnel not to feed or water the animal, and (d) contact the FWS and the Texas Marine Mammal Stranding Network (TMMSN) if a manatee is sighted.

To assure no impacts to sea turtle species, the applicant proposes to implement specific protocols in the event a sea turtle is identified within the work area. Construction and operations employees will also (a) be advised that sea turtles may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the sea turtle, (c) be instructed not to feed or water the animal, and (d) take appropriate measures to cease work when necessary.

U. S. Environmental Protection Agency (EPA)

EPA Comment 1:

An Alternatives Analysis be submitted that evaluates the respective impacts of any practicable alternatives that meet the project purpose.

(Corps Remark – The Alternatives Analysis furnished to the Corps in Moda’s application package has been forwarded to all the resource agencies; however, additional information has been requested to address this concern. (See TPWD comments)

Response to EPA Comment 1:

A revised Alternatives Analysis (**Attachment B**), provides details of the numerous on-site and off-site alternatives that were evaluated during the design phase of the project. The preferred alternative (the proposed project) was selected after the applicant determined that it was the Least Environmentally Damaging Practicable Alternative (LEDPA) while also meeting the proposed project’s purpose and need.

EPA Comment 2:

All potential direct, secondary, and cumulative impacts to the environment should be fully evaluated for each aquatic resource, particularly seagrasses, and those resources that are impacted should be adequately replaced.

Response to EPA Comment 2:

Comment noted.

EPA Comment 3:

The applicant should evaluate contemporary contaminant testing of dredged material prior to any disposal activities as the dredged material originates from an industrial area.

Response to EPA Comment 3:

The material is proposed for placement at a privately owned confined dredged material placement area. The applicant will work with the landowner and the U.S. Army Corps of Engineers to evaluate the need for contaminant testing.

EPA Comment 4:

The applicant should develop a mitigation plan that meets all the criteria of the 2008 Final Mitigation Rule and addresses all unavoidable impacts to seagrasses, tidal flats and wetlands.

Response to EPA Comment 4:

A completed 12-Step Mitigation Plan (**Attachment C**) has been submitted in conformance with the 2008 Final Mitigation Rule.

TPWD

Coastal Fisheries Division Regional Director (Letter No. 1)

TPWD Comment 1:

The TPWD states the applicant's seagrass survey seems inconsistent with historic aerial imagery and the extent of seagrass cover documented in the TPWD seagrass viewer. The TPWD requests the opportunity to review the details of the seagrass survey report. (Corps Remark - The seagrass survey information furnished to the Corps in Moda's application package has been forwarded to all the resource agencies; however, additional information may be needed to address this concern.)

Response to TPWD Comment 1:

BEI used the techniques previously coordinated with and approved by the USACE and other agencies. Transects were developed at 100-foot intervals spanning the survey area. Observation points were situated approximately 30-foot intervals along each transect in areas where the bay bottom elevations were conducive for seagrass establishment. To determine the presence or absence of seagrass at each observation point, BEI utilized the grab method to determine seagrass presence and to estimate seagrass coverage. At each sample point BEI made three hand grabs or three six-inch diameter core samples from the bay bottom. One sample was taken on the transect line, one approximately 18 inches to the left, and one approximately 18 inches to the right of the transect line. If seagrass was present within the grab sample, the species type and abundance was recorded for the observation point. The type of species at each grab sample is depicted by three letters, one for each grab. The letter X represents no vegetation, the letter H represents shoal grass (*Halodule beaudettei*), the letter M represents manatee grass (*Cymodocea filiformis*), the letter T represents turtle grass (*Thalassia testudinum*), and the letter C represents clover grass (*Halophilla engelmannii*). A lowercase letter signifies that vegetation was sparse at the grab (<33% coverage), an uppercase letter signifies that vegetation was moderately dense (33% to 67% coverage), and an uppercase letter with a plus sign signifies that vegetation was dense (>67% coverage). In addition to the transect sampling, BEI evaluated the aerial imagery with ground truthing to determine the edge of seagrass for the entire seagrass bed. To determine position of various points, BEI used a sub-meter Trimble GEO 7X. All data was post-processed and mapped in office using ArcMaps 10.4.

The seagrass survey data at the impact area is included as **Figure 2**.

Moda acquired the project site in September 2018. Upon purchasing the property, various site projects were already underway. BioWest had recently completed a seagrass survey adjacent to existing Berth 5 area. A portion of that survey overlaps the currently proposed impact area. BEI's survey findings were consistent with those independently documented by BioWest in July 2018. An overview comparison is provided as **Figure 3**. Further, BEI's findings are consistent with 2018, 2019, and 2020 aerial imagery, as provided in **Figures 4, 5 and 6**, respectively.

The TPWD seagrass viewer seagrass data from Corpus Christi Bay indicates that areas of Corpus Christi Bay were mapped in 1994, 1995, and 2007. Therefore, even the most recent mapping is more than 13 years old. Further, following Hurricane Harvey University of Texas at Austin Marine Science Institute documented a decrease in seagrass in Corpus Christi Bay. Their report, "A Long-Term Seagrass Monitoring Program for Corpus Christi Bay and Upper Laguna Madre", stated,

“After the passage of Hurricane Harvey, 7% of stations exhibited a complete loss of cover for *Halodule wrightii*. *Thalassia testudinum* was completely eradicated at 13% of stations, and 35% of stations displayed a > 50% reduction in cover. The Coastal Bend – which directly intercepted the path of Hurricane Harvey – lost ~20% of total seagrass area.

Based upon the above information, the applicant is confident that the seagrass survey results and impact estimates are accurate and depict current site conditions.

TPWD Comment 2:

The TPWD requested the opportunity to review the applicant’s Alternative Analysis, particularly why the East Basin cannot accommodate the activities proposed as the purpose for the expansion of the West Basin area. (Corps Remark - The Alternatives Analysis furnished to the Corps in Moda’s application package was forwarded to TPWD, which submitted the following comments in response: The Alternatives Analysis does not appear to consider a full range of on-site alternatives. It would be helpful to see a site map that identifies the locations, dimensions, and intended uses of all of the existing berths and turning basins at the project site (e.g., Berths 1, 2B, 2C, 3, 6) to evaluate if additional space is available within the existing footprint to reconfigure the layout so that impacts can be avoided and minimized to the extent practicable.)

Response to TPWD Comment 2:

A revised Alternative Analysis (**Attachment B**) is included and provides details of the numerous on-site and off-site alternatives that were evaluated during the design phase of the project. Through this evaluation, and through coordination with Pilots and tug service providers, it was determined that there was inadequate space in the existing East Basin to meet the project’s purpose and need. Reconfiguration of existing berths in the East Basin was a considered alternative. However, due to the proximity to the federal channel, adequate space is unavailable in this area. The preferred alternative (proposed project) was selected after determining that it was the LEDPA and adequately met the project’s purpose and need.

TPWD Comment 3:

The TPWD recommended that the applicant implement guidance recommended by FWS and the Texas Sea Turtle Stranding and Salvage Network in the event of encounters with the West Indian manatee or sea turtles. See TPWD Letter No. 1 for details. (Corps Remark – The Corps plans to request Section 7 consultation with the FWS regarding possible T&E impacts.)

Response to TPWD Comment 3:

The proposed project area is located in the bay system which could provide habitat for these species. However, due to the high ship traffic and fast-moving waters it is unlikely that this species will be present within the marine work area. To assure no impacts to the West Indian manatee occur as a result of the proposed project, the applicant proposes to: (a) advise all construction personnel that manatees may approach the proposed project area, (b) provided materials in English and Spanish to assist in identifying the mammal, (c) instruct all construction personnel not to feed or water the animal, and (d) contact the FWS and the Texas Marine Mammal Stranding Network (TMMSN) if a manatee is sighted.

To assure no impacts to sea turtle species, the applicant proposes to implement specific protocols in the event a sea turtle is identified within the work area. Construction and operations employees will also (a) be advised that sea turtles may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the sea turtle, (c) be instructed not to feed or water the animal, and (d) take appropriate measures to cease work when necessary.

TPWD Comment 4:

The TPWD encourages the applicant to explore beneficial uses of suitable dredged materials that will benefit fish and wildlife resources within the vicinity of the project.

Response to TPWD Comment 4:

The applicant evaluated the beneficial use of dredge material during construction of the seagrass mitigation site. However, the selected seagrass mitigation site contained existing suitable elevations and substrate type for the successful establishment of submerged aquatic vegetation, so the use of dredge material was not required.

TPWD

Science and Policy Resources Branch of the Coastal Fisheries Division (Letter No. 2)

TPWD Comment 1:

If new onshore facilities are associated with this project, the Corps should determine if the project scope should be expanded to include these connected actions.

Response to TPWD Comment 1:

New onshore facilities are not needed for this project. One of the citing criteria included as part of the Alternatives Analysis include a project design that allowed for optimal use of existing onshore infrastructure in a safe and efficient manner. The preferred alternative (proposed project) was selected, in part, due to its design that minimizes the need for additional onshore infrastructure and allows the existing onshore infrastructure to accommodate the current and future committed customer demands to the greatest extent practicable.

TPWD Comment 2:

The applicant should identify the various stabilization options considered to avoid and minimize impacts to neighboring aquatic resources.

Response to TPWD Comment 2:

The applicant proposes to construct approximately 1,350 linear feet of approximately 44-foot wide articulated block mattress to stabilize the dredge side slope. The other stabilization option evaluated during the project design phase included a bulkhead and an emergent breakwater with various alignments. However, articulate block mattress was selected because the use of articulated block mattress has been proven to be the most effective means for dredge slope stabilization and has been used since 1915 as the method for stabilizing dredge slopes. Further by utilizing a submerged form of stabilization it decreases the likelihood of scour or accretion and does not create an emergent hazard to navigation.

TPWD Comment 3:

The project plans should be revised to include the location, extent, composition, and relative cover of each aquatic resource within the vicinity of the proposed project, including areas of shallow open water (i.e., less than 6 feet deep) and deep open water (i.e., 6 feet deep or greater). Areas that have been established, re-established, or enhanced for mitigation purposes should also be identified. Revised project plans should be submitted for resource agency review and public comment.

Response to TPWD Comment 3:

A complete delineation of aquatic resources in the vicinity of the proposed project was completed and submitted to the USACE with the permit application. The submittal included a report detailing the wetland delineation survey as well as the marine survey to delineate submerged aquatic vegetation. **Figure 7** provides an overview depicting the survey results.

TPWD Comment 4:

Complete project plans that identify the location and dimensions of Berths 1, 3, and 6, as well as any foreseeable improvements or changes to these berths, should be submitted for resource agency

review and public comment. Berths 1, 3, and 6 should be included in the evaluation of on-site alternatives to avoid and minimize impacts to special aquatic sites and TPWD requests the opportunity to review and provide comments on the Alternatives Analysis.

Response to TPWD Comment 4:

The name and labeling of existing berths at the facility have been adopted by the current number and were assigned by the previous owner. The naming policy included allowances for smaller vessels in different trades than the current commercial plan for MODA. Simply stated, the same real estate (berth) that is covered up by a large crude tanker was previously capable of handling two smaller vessels. For example, the existing Berth Two is approximately 1,375 in length. This berth was originally divided in two; Berth 1 for LPG vessels and Berth 2 for crude service. When the berth was retrofitted to handle VLCCs, a third set of loading arms and a new name was added to the same wharf. Berth 2A was named for VLCC service. As the business plan and new owners came into the picture, the loading arms on both Berth 1 and the old Berth 2 were removed, leaving only one set of arms to service up to VLCC class crude tankers. Eventually Berth 2A was renamed simply Berth 2. Therefore, there is no current Berth 1 at the facility. This is also the case for Berths 3 and 6. They were designed by the previous owner for utilization by LPG and other smaller vessels. The space at Berths 3 and 6 is now occupied when berthing occurs at Berths 4 and 5 by larger VLCCs and Suezmax vessels. As such, there are no improvements or alterations proposed for these Berths 1, 3, or 6.

TPWD Comment 5:

TPWD prefers in-kind over out-of-kind compensation strategies to adequately replace the lost functions and services of the resources that would be impacted. While the woodland/pothole mosaic provides rare habitat with significant conservation value, it does not offset the function losses that would result from the proposed project amendment.

Response to TPWD Comment 5:

The proposed project, as amended, would result in unavoidable impacts to 8.86 acres of submerged aquatic vegetation. The applicant proposes to mitigate for losses of submerged aquatic vegetation in-kind by planting 20 acres of seagrass (2.26:1 mitigation ratio), with a goal of establishing not less than 14 acres (1.58:1 mitigation ratio) which would be protected by an approximately 2,000-foot rock breakwater. The establishment of 14 to 20 acres of submerged aquatic vegetation more than adequately replaces the lost functions and services of the 8.86 acres of submerged aquatic vegetation impacted by the proposed project. The project also proposes to impact 0.95 acres of estuarine wetland. The rock breakwater will provide protection to at least five acres of estuarine wetland habitat along the adjacent shoreline. However, there are more than 40 acres of estuarine wetland immediately behind the proposed breakwater within the Sunset Lake habitat. It is well documented that this shoreline has experienced significant historical erosion and it is likely that the protected wetlands will erode in the future. Lastly, the rare habitat with significant conservation value proposed for preservation will continue to contribute to the health and quality of the on-site estuarine wetland habitat that is avoided by this project.

TPWD Comment 6:

The applicant should coordinate with FWS to identify a site that avoids and minimizes impacts to piping plover and their designated critical habitat to the extent practicable.

Response to TPWD Comment 6:

The proposed seagrass mitigation located offshore from Sunset Lake (Corpus Christi Bay, approximately 11 miles from the project area) is located adjacent to piping plover designated critical habitat and has historically suffered from shoreline erosion. An aerial photography analysis indicated that the proposed mitigation site shoreline has eroded an average of 2.2 feet per year since 1961 and was identified within the state plan as an area in need of protection recommending living shorelines, or shorelines that combine stone armoring with vegetative buffers for two levels of stabilization, of which the proposed mitigation accomplishes both. Construction of the proposed mitigation site would stabilize the existing shoreline and protect/enhance habitat historically utilized by the piping plover. The project was designed consistent with the adjacent Texas General Land Office (GLO) breakwater, also adjacent to the same shoreline. The project utilizes the same orientation, construction materials and methods.

TPWD Comment 7:

A permittee-responsible compensatory mitigation project, or projects, should be developed to fully offset the suite of lost functions and services provided by the aquatic resources to be impacted. This can be achieved by developing an in-kind project that restores or enhances degraded habitat or establishes new habitat at a ratio that accounts for temporal losses of functions and reduces the uncertainty of project success. TPWD typically recommends that aquatic resource impacts be compensated through in-kind replacement at a minimum ratio of 3:1 and 2:1 for seagrass and estuarine marsh, respectively. Out-of-kind strategies and enhancement should be provided at higher ratios. The mitigation ratio for preservation, because it will not result in a net gain of aquatic resource functions, should be even higher to compensate for the net loss and should be done in conjunction with restoration, establishment, or enhancement projects.

Response to TPWD Comment 7:

The applicant proposes a mitigation plan which includes a 1.58 to 2.26:1 mitigation ratio (14 – 20 acres of seagrass) for unavoidable impacts to aquatic submerged vegetation. As illustrated in the submitted 12-Step Mitigation Plan (**Attachment C**), the proposed mitigation more than adequately replaces the lost functions and services provided by the existing seagrass at the project site. The proposed mitigation plan addresses the needs of the watershed and is consistent with the GLO's Texas Coastal Resiliency Master Plan (GLO, 2019) by providing wetland protection and shoreline stabilization adjacent to Sunset Lake. Further, once established, the seagrass beds will increase habitat quality in a non-industrial area (as compared to the industrial impact area), improve water quality through nutrient uptake and retention, sediment trapping, and carbon sequestering, and provide shoreline stabilization. In addition to the establishment of up to 20 acres of seagrass, the applicant proposed to preserve 70 acres of wooded area, containing a pothole wetland mosaic, located adjacent to the impact site. Preservation of pothole mosaic wetlands adjacent to the impact site will further replace lost functions and services by providing natural stormwater management to the area, groundwater recharge, valuable migratory bird and other wildlife habitat, removal of gaseous air pollutants, and reduced acreage of impervious cover to an area threatened by imminent development. The value of this habitat has been widely recognized and acknowledged by TPWD on multiple occasions. The combination of off-site, in-kind mitigation protection of at least five acres of eroding estuarine wetlands near Sunset Lake, and preservation of highly valued and threatened forested/pothole mosaic habitat provides numerous benefits to the area and replaces the

lost functions or services at a ratio greater than the established 3:1 mitigation ratio. Please see the 12-Step Plan for the full mitigation site analysis and determination of credits.

TPWD Comment 8:

The TPWD recommended that the applicant implement guidance recommended by FWS and the Texas Sea Turtle Stranding and Salvage Network in the event of encounters with the West Indian manatee or sea turtles. See TPWD Letter No. 1 for details.

(See Corps Remark 3 to TPWD Letter No. 1)

Response to TPWD Comment 8:

The proposed project area is located in the bay system which could provide habitat for these species. However, due to the high ship traffic and fast-moving waters it is unlikely that this species will be present within the marine work area. To assure no impacts to the West Indian manatee occur as a result of the proposed project, the applicant proposes to: (a) advise all construction personnel that manatees may approach the proposed project area, (b) provided materials in English and Spanish to assist in identifying the mammal, (c) instruct all construction personnel not to feed or water the animal, and (d) contact the FWS and the Texas Marine Mammal Stranding Network (TMMSN) if a manatee is sighted.

To assure no impacts to sea turtle species, the applicant proposes to implement specific protocols in the event a sea turtle is identified within the work area. Construction and operations employees will also (a) be advised that sea turtles may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the sea turtle, (c) be instructed not to feed or water the animal, and (d) take appropriate measures to cease work when necessary.

TPWD Comment 9:

The applicant is encouraged to explore beneficial uses of suitable dredged materials that will benefit fish and wildlife resources within the vicinity of the project.

Response to TPWD Comment 9:

The applicant evaluated the beneficial use of dredge material during construction of the seagrass mitigation site. However, the selected seagrass mitigation site contained existing suitable elevations and substrate type for the successful establishment of submerged aquatic vegetation, so the use of dredge material was not practical.

Texas Commission on Environmental Quality (TCEQ)

TCEQ Comment 1:

A copy of the Alternatives Analysis should be provided for this project (Corps Remark – See Corps Remark to FWS Recommendation 1.)

Response to TCEQ Comment 1:

A revised Alternative Analysis (**Attachment B**) providing details of the numerous onsite and offsite alternatives that were evaluated during the project design phase is included.

TCEQ Comment 2:

More detailed information is needed on what options were considered to minimize impacts, specifically to seagrass and emergent wetlands, and why they were eliminated.

Response to TCEQ Comment 2:

A revised Alternative Analysis (**Attachment B**) providing details of the numerous onsite and offsite alternatives that were evaluated during the project design phase is included.

TCEQ Comment 3:

A map showing the location of existing seagrass and emergent wetlands and the location of proposed impacts to the aquatic resources should be submitted. (Corps Remark – The wetland delineation information furnished to the Corps in Moda’s application package has been forwarded to all the resource agencies, however, additional information may be necessary to address this concern.)

Response to TCEQ Comment 3:

The wetland delineation and impacts assessment documentation were submitted by the applicant with the permit application. **Figure 7** provides an overview of aquatic resources identified in the vicinity of the impact site and **Figure 2** provides an overview of the impacts associated with the proposed project.

TCEQ Comment 4:

A copy of wetland delineations, functional or conditional assessments, and any other ecological details for the proposed impact site and both mitigation sites should be provided, as well as documentation of the presence, extent, and condition of wetlands on all sites.

Response to TCEQ Comment 4:

The 12-Step Mitigation Plan is included as **Attachment C**, includes the full ecological descriptions for the impact areas as well as the mitigation sites. The wetland delineation and impacts assessment documentation were submitted by the applicant with the permit application. **Figure 7** provides an overview of aquatic resources identified in the vicinity of the impact site and **Figure 2** provides an overview of the impacts associated with the proposed project.

TCEQ Comment 5:

Applicant should provide a mitigation plan that includes objectives, site selection, the site protection instrument, baseline information, how the compensatory mitigation will provide

required compensation for unavoidable impacts to aquatic resources, a mitigation work plan, maintenance plan, ecological performance standards, monitoring requirements, long-term management plan, adaptive management plan, financial assurances, and any other relevant information.

Response to TCEQ Comment 5:

A completed 12-Step Mitigation Plan (**Attachment C**) is included containing all information pertaining to the commenters request.

TCEQ Comment 6:

The applicant should include multiple ecological performance standards, an adequate monitoring period to verify long-term project success, and a detailed adaptive management plan as part of any mitigation plan for seagrass creation.

Response to TCEQ Comment 6:

A completed 12-Step Mitigation Plan (**Attachment C**) is included containing all information pertaining to the commenters request.

Private Citizens' Summarized Comments

Private Citizens' Comments:

Nearly all of the letters requested that an Environmental Impact Study be done to evaluate the proposed project's impacts, and a public hearing be held in order for the public to find out more about the project and voice their concerns. The following specific concerns were also expressed about how the project would affect the following points of public interest: Historic and Cultural Resources; Water Quality; Endangered Species; Fish and Wildlife Values; Essential Fish Habitat; Wetlands/Special Aquatic Sites; Shoreline Erosion and Accretion; Recreation; Aesthetics; Navigation; General Environmental Concerns; Economics; Water Supply and Conservation; Air Pollution; and Safety.

Response to Private Citizens' Comments

The following provides a summary of how each of these items has been evaluated and the results of those evaluations:

- Environmental Impact Statement - An Environmental Impact Statement is required when a proposed major federal action is determined to significantly affect the quality of the human environment. The proposed project is not considered a major federal action and only includes improvements to an existing industrial site. All the above specified concerns were taken into account during the project design and planning phase of the proposed project. The proposed project has been designed to avoid and minimize all impacts to the greatest extent practicable.
- Public Hearing – Aside from concerns related to the potential for cultural resources, the majority of the Private Citizen comments originated from residents of the adjacent residential community, Ingleside on the Bay. Moda has worked closely with Ingleside on the Bay since purchasing the facility. Moda provided The Ingleside on the Bay Coastal Watch Association (IOBCWA) a tour of their facility and addressed questions during the tour. Moda representatives have also attended City Council meetings and provided opportunities to discuss concerns and ask questions related to Moda's operations and proposed project. Moda has been transparent with the neighboring community and has developed a project in an environmentally responsible manner. The applicant does not agree that additional public meetings are warranted. They would not reveal any new information than that already being considered by the USACE.
- Historic and Cultural Resources – The applicant submitted a Section 106 review request to the Texas Historical Commission (THC). As a result of this coordination, THC determined that there were no land-based concerns related to the project. The land portion of this property has undergone significant archeology investigation. The property was previously owned by the Port of Corpus Christi. Significant archeological investigations were completed by the Port of Corpus Christi in coordination with the THC during their ownership. A 2010 letter to the Port of Corpus Christi from the THC states, "The review staff, led by Bill Martin, concurs that all data recovery at 41SP11 has been successfully completed and the final report has been accepted by this office. We also concur that previous investigations on the remainder of the 432-acre tract that is owned by the Port of

Corpus Christi have demonstrated that no other significant historic or prehistoric resources are present. Therefore, this office concurs with your determination that no further action is needed, and that the property may be developed without further consultation with this office.” As the letter documents, a full report for the data recovery that occurred for 41SP11 was completed, coordinated with and accepted by THC.

During Moda’s coordination with THC, THC requested that a remote sensing survey for the proposed dredge area be completed. Moda contracted with Gray and Pape, a national consulting firm specializing in cultural resources management and historic preservation services to complete the marine survey. The survey was completed in June of 2020. The survey did not identify any areas of marine concern that should be avoided during the project. The report was submitted to THC for review and concurrence. On September 2, 2020, THC responded with the following statements:

- No identified underwater archeological sites, historic shipwrecks, and/or significant remote-sensing targets present or affected. However, if buried cultural materials are encountered during project activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC’s Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.
- THC/SHPO concurs with information provided for the underwater project area.
- THC/SHPO has comments on the draft report submitted to this office for review.
- This draft report is acceptable. Please submit a final report: one restricted version with any site location information (if applicable), and one public version with all site location information redacted. To facilitate review and make project information and final reports available through the Texas Archeological Sites Atlas, we appreciate submitting abstracts online at <http://xapps.thc.state.tx.us/Abstract> and e-mailing survey area shapefiles to archeological_projects@thc.texas.gov if this has not already occurred. Please note that these steps are required for projects conducted under a Texas Antiquities Permit.

The details of the above described THC coordination have been provided to the USACE’s Staff Archaeologist, Mr. Jerry Androy by Gray and Pape on September 2, 2020.

- Water Quality – Moda has completed and submitted Texas Commission on Environmental Quality (TCEQ) Tier II 401 Certification documentation for water quality. Overall, the project proposes to incorporate all best management practices (BMPs) appropriate for a project of this type. Moda will comply with all TCEQ requirements for dredge projects.
- Endangered Species, Fish and Wildlife Values, Essential Fish Habitat, Wetlands/Special Aquatic Sites, Shoreline Erosion and Accretion - Moda has submitted a threatened and endangered species evaluation, wetland delineation, and site survey as part of the permit

application. These surveys were used to determine the unavoidable impacts resulting from the proposed project.

- Recreation – Moda’s proposed project does not impact recreation. Moda is proposing to construct berthing docks and dredge within an industrial development area. Moda has limited the size of the dredge area to that necessary to achieve the project’s purpose and need. Further, Moda proposed submerged side slope stabilization to protect the adjacent avoided seagrass areas in lieu of emergent protection for the benefit of not creating navigational obstructions for recreational users, as well as for the effectiveness.
- Aesthetics – Moda’s proposed project includes dredging and construction of berthing docks within an industrial shipping area. The proposed high value habitat preservation area was selected not only because of the high habitat value and contributions to the watershed, but also to ensure the aesthetics for the nearby private citizens remain natural and pristine.
- Navigation – Moda’s project, including the dredge area was developed based upon best engineering practices and with input from the Pilots. All berthing facilities will be marked and lit according to all United States Coast Guard requirements. As proposed, Moda’s project does not create hazards to navigation.
- General Environmental Concerns – While general environmental concerns do not succinctly identify concerns, Moda has developed a 12-step mitigation plan in conformance with regulatory requirements that ensures all unavoidable impacts to sensitive resources are appropriately compensated.
- Economics – Construction of the project as stated in the purpose and need, ensures Moda meets the demands of current and future committed customers. Meeting the demands of their customer base helps ensure long-term viability and long-term full-time employment for area residents. The project further provides economic contributions by providing temporary construction jobs.
- Water Supply and Conservation – Moda’s project does not propose to impact private citizen’s water supply.
- Air Pollution – Moda is not proposing to construct any additional tanks or infrastructure for this project. Moda’s on-site tanks exceed TCEQ air permit requirements. With regards to air pollution generated by additional vessels berthing, Moda’s facility actually reduces pollutants that enter the air by reducing the time spent nearshore. Loading at the Moda facility eliminates the longer voyage into the Inner Harbor of the Corpus Christi Ship Channel.
- Safety – The proposed project adheres to all safety regulations and best practices. The project was designed based upon engineering best practices, will adhere to all United States Coast Guard safety requirements, and will be constructed utilizing all safety and best management practices.

Literature Cited

General Land Office, *Texas Coastal Resiliency Master Plan*, 2019, accessed at <https://coastalstudy.texas.gov/resources/files/2019-coastal-master-plan.pdf>, June 2020.

Selman, Will & Collins, Samantha, *Observations of Wintering Piping Plovers (*Charadrius melodus*) Positively Associated with Rock Breakwater-Influenced Shorelines in Southwestern Louisiana. *Journal of Coastal Research**, accessed at https://www.researchgate.net/publication/325094800_Observations_of_Wintering_Piping_Plovers_Charadrius_melodus_Positively_Associated_with_Rock_Breakwater-Influenced_Shorelines_in_Southwestern_Louisiana. June 2020.

Smith, Elizabeth A., et al. Texas Coastal Bend Live Oak – Red Bay Community Conservation Plan. Coastal Bend Bays and Estuaries Program, June 2019.

ATTACHMENT A:
FIGURES

FIGURE 1.
Mitigation Site Survey Results

Mitigation Site Survey
Moda Ingleside Oil Terminal, LLC
SWG- 1995-02221
Ingleside, San Patricio County, Texas

Notes:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (JAM).
 -Basemap Source: NAIP 0.5 meter aerial imagery, obtained from
 TNRS, Nueces County, 2015.
 -For planning and permitting purposes only, not for construction.



Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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 BELAIRE ENVIRONMENTAL, INC. PO
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Sunset Lake

AHTL (+2.85 Feet NAVD 88)

MHWL (+1.01 Feet NAVD 88)

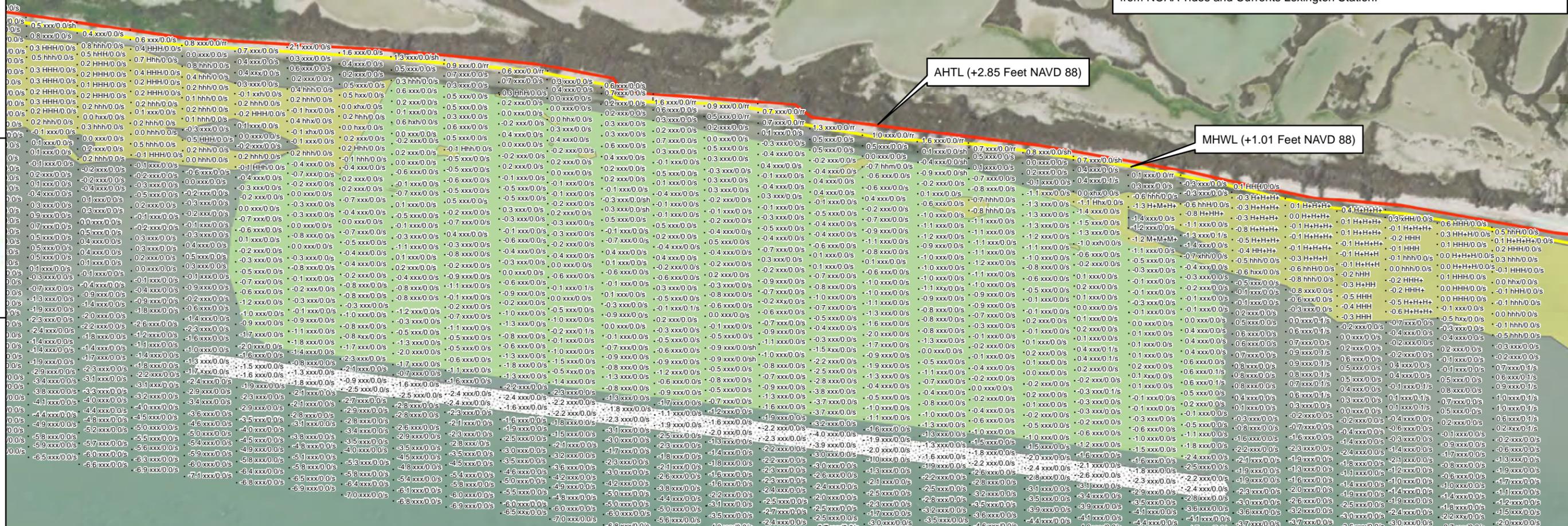
Notes:
 -Each sample point indicates elevation, presence or absence of seagrass, sediment depth and type.

Seagrass Data Key:
 Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

Sediment Data Key:
 Types of Sediment:
 s= sand
 sh= shell hash
 sm= sandy mud
 m= mud
 rr= rock/riprap

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 -H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 -HH: Dense (>67% Coverage) Shoalgrass

-Annual High Tide Line (AHTL) was determined to be +2.85 feet NAVD 88, based on a 10-year average, a previously approved USACE method.
 -Mean High Water Line (MHWL) was determined to be +1.01 feet NAVD 88, obtained from NOAA Tides and Currents Lexington Station.



Legend

- Seagrass Sample Point
- Breakwater/P
- Planting Area
- Existing Seagrass
- AHTL
- MHWL

Corpus Christi Bay

FIGURE 2.
Overview of Proposed Impacts

Unavoidable Project Impacts
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas

NOTES:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (HER).
 -Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
 -For planning and permitting purposes only, not for construction.

0 300 600 Feet




Proposed Direct Impact
 Estuarine Emergent Wetland
 Approximately 0.80-Acres

Proposed Indirect Impact
 Estuarine Emergent Wetland
 Approximately 0.15-Acres

AHTL
 +2.58 Feet NAVD 88

MHW
 +0.79 Feet NAVD 88

Proposed Direct Impact
 Submerged Aquatic Vegetation
 Approximately 8.86-Acres

Legend

- - - AHTL
- Indirect Impact

Direct Project Impacts

- Seagrass
- Wetland
- MHWL

Site Plan Overview

- Site Plan Overview
- Proposed Dredge Area

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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FIGURE 3.
Seagrass Survey Comparison (Impact Site)

**Seagrass Survey Comparison
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas**



NOTES:

- Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (HER).
- Basemap Source: Pictometry Online. Photo Date: January 24, 2019.
- For planning and permitting purposes only, not for construction.

0 300
Feet



Legend

-  Bio-West Survey (2018)
-  BEI Survey (2019)

Moda Ingleside Oil Terminal, LLC
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Ingleside, San Patricio County, Texas



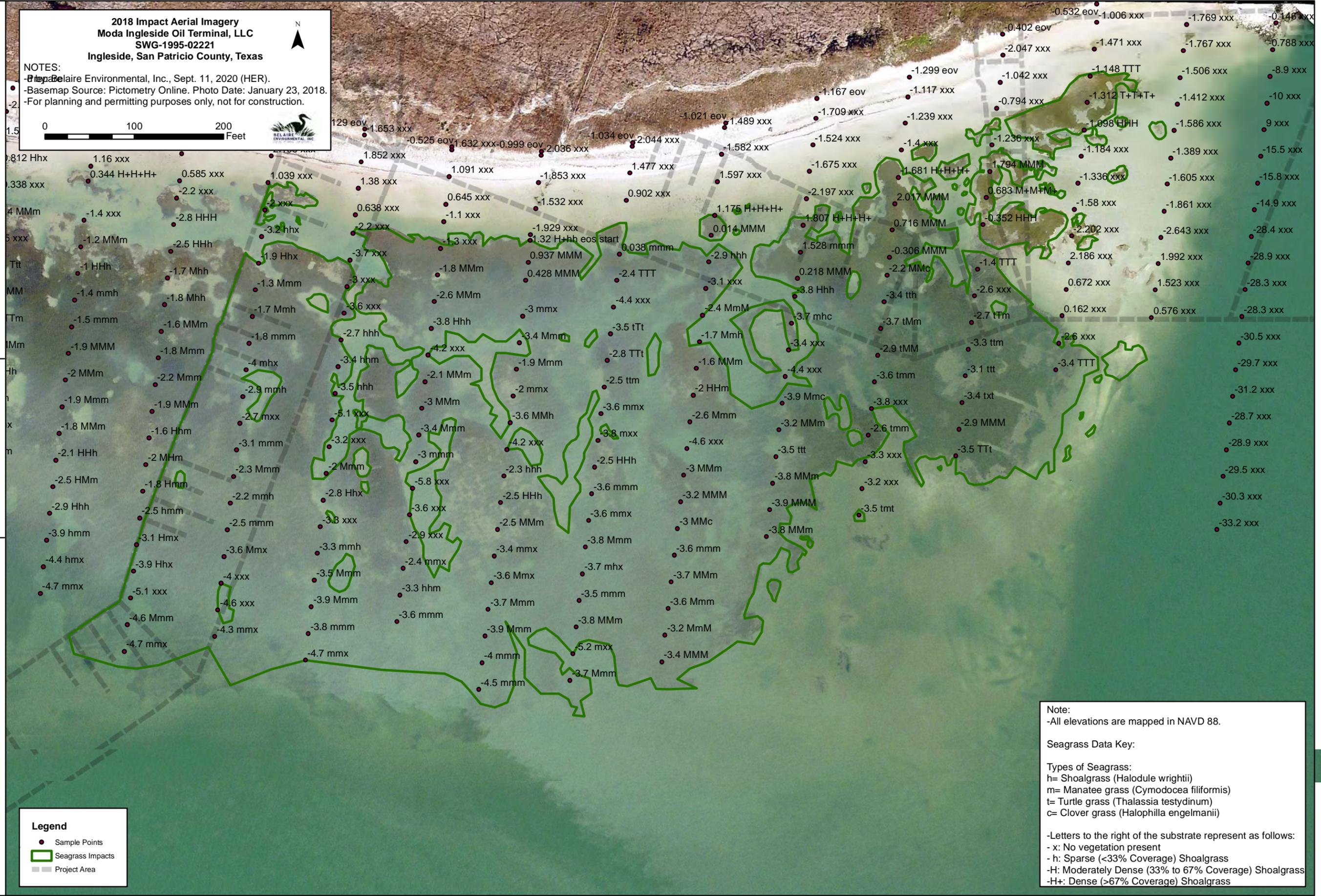
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September 11, 2020 page ____ of ____

FIGURE 4.
2018 Aerial Overview

2018 Impact Aerial Imagery
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas

NOTES:
 -Prepared by Belaire Environmental, Inc., Sept. 11, 2020 (HER).
 -Basemap Source: Pictometry Online. Photo Date: January 23, 2018.
 -For planning and permitting purposes only, not for construction.

0 100 200 Feet



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Legend

- Sample Points
- Seagrass Impacts
- Project Area

Note:
 -All elevations are mapped in NAVD 88.

Seagrass Data Key:

Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 -H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 -H+: Dense (>67% Coverage) Shoalgrass

FIGURE 5.
2019 Aerial Overview

2019 Impact Aerial Imagery
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas

NOTES:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (HER).
 -Basemap Source: Pictometry Online. Photo Date: January 24, 2019.
 -For planning and permitting purposes only, not for construction.

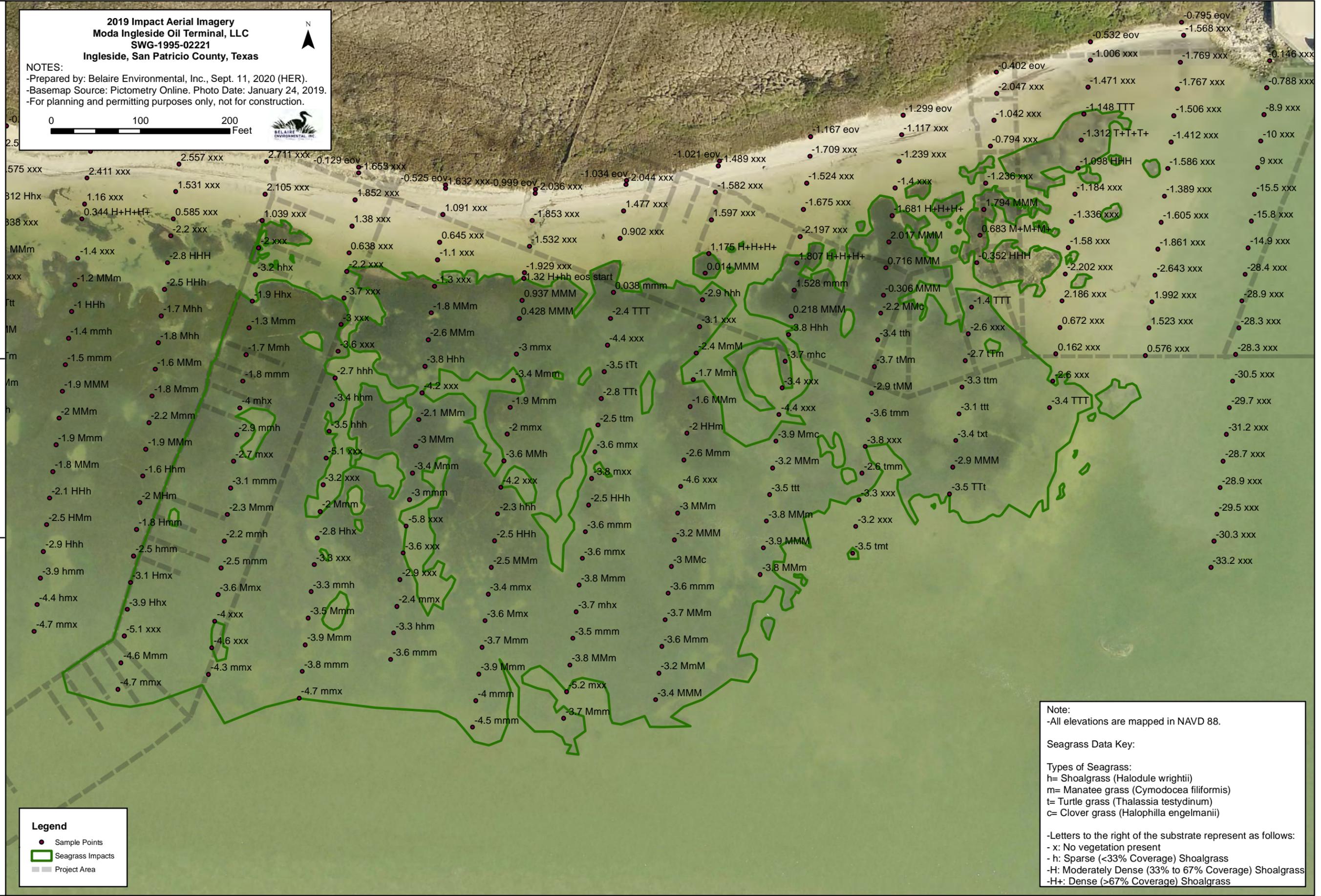
0 100 200 Feet



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 Ingleside, San Patricio County, Texas



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Legend

- Sample Points
- ▭ Seagrass Impacts
- ▭ Project Area

Note:
 -All elevations are mapped in NAVD 88.

Seagrass Data Key:

Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 -H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 -H+: Dense (>67% Coverage) Shoalgrass

FIGURE 6.
2020 Aerial Overview

2020 Impact Aerial Imagery
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas

NOTES:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (HER).
 -Basemap Source: Google Earth. Photo Date: January 31, 2020.
 -For planning and permitting purposes only, not for construction.

0 100 200 Feet



Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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Legend

- Sample Points
- ▭ Seagrass Impacts
- ▭ Project Area

Note:
 -All elevations are mapped in NAVD 88.

Seagrass Data Key:

Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 -H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 -H+: Dense (>67% Coverage) Shoalgrass

FIGURE 7.
Aquatic Resource Delineation Overview

Aquatic Resource Delineation Overview
Moda Midstream, LLC
Ingleside, San Patricio County, TX

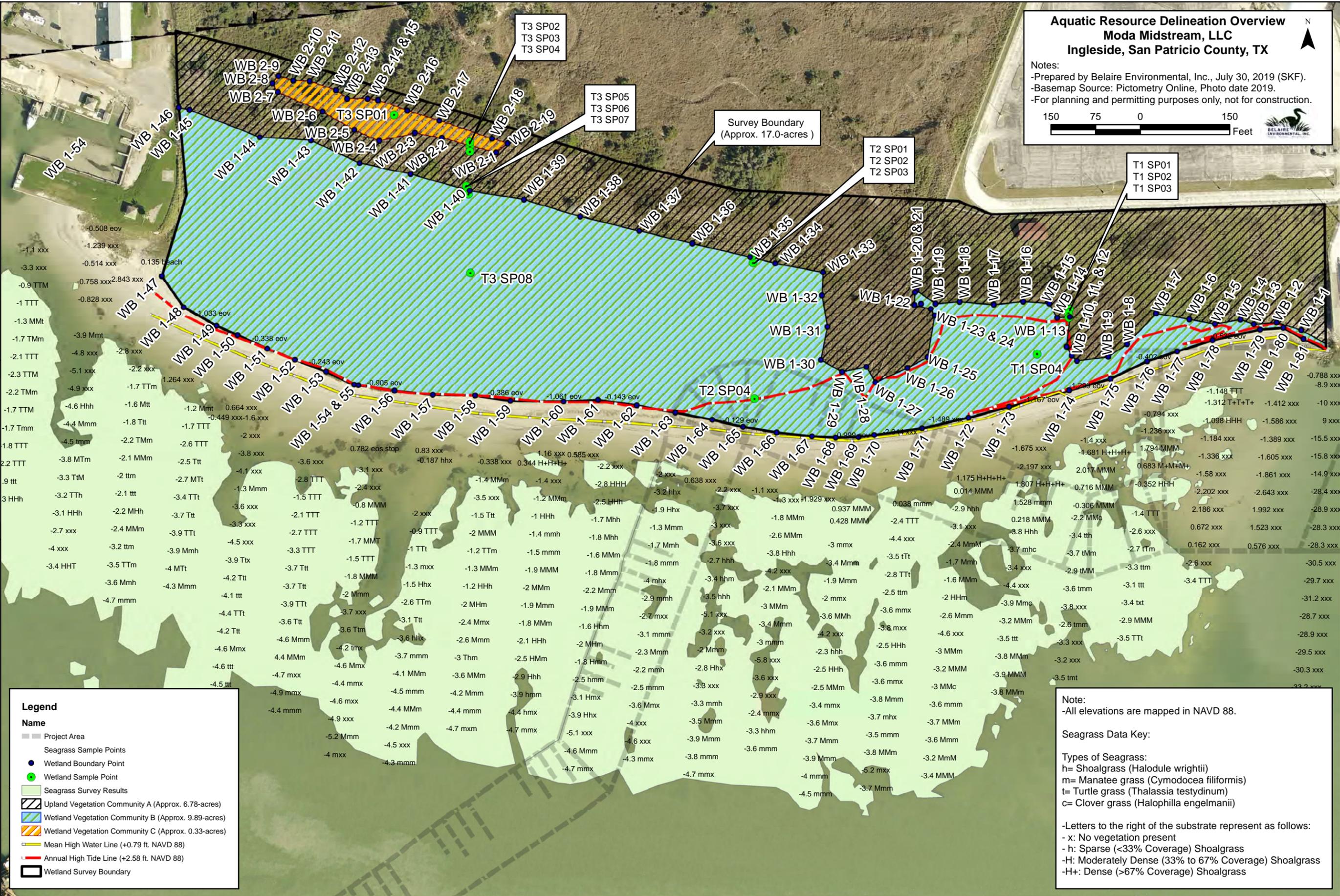
Notes:
 -Prepared by Belaire Environmental, Inc., July 30, 2019 (SKF).
 -Basemap Source: Pictometry Online, Photo date 2019.
 -For planning and permitting purposes only, not for construction.



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 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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 September 11, 2020 page ___ of ___



Legend

Name

- Project Area
- Seagrass Sample Points
- Wetland Boundary Point
- Wetland Sample Point
- Seagrass Survey Results
- Upland Vegetation Community A (Approx. 6.78-acres)
- Wetland Vegetation Community B (Approx. 9.89-acres)
- Wetland Vegetation Community C (Approx. 0.33-acres)
- Mean High Water Line (+0.79 ft. NAVD 88)
- Annual High Tide Line (+2.58 ft. NAVD 88)
- Wetland Survey Boundary

Note:
 -All elevations are mapped in NAVD 88.

Seagrass Data Key:

Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 - H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 - H+: Dense (>67% Coverage) Shoalgrass

ATTACHMENT B:
ALTERNATIVES ANALYSIS

ALTERNATIVES ANALYSIS
MODA INGLESIDE OIL TERMINAL, LLC
USACE PERMIT NO. SWG-1995-02221
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

Prepared for:
Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, TX 77002

Prepared by:
Belaire Environmental, Inc.
PO Box 741
Rockport, TX 78382

September 11, 2020



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List of Tables

- Table 1. Alternatives Analysis Evaluation

Appendix A

- Figure 1. Onsite Alternative 1
- Figure 2. Onsite Alternative 2
- Figure 3. Onsite Alternative 3
- Figure 4. Onsite Alternative 4 (Preferred Alternative)

1. Introduction

This document addresses the Clean Water Act (CWA) Section 404(b)(1) guidelines practicable Alternatives Analysis for Moda Ingleside Oil Terminal, LLC's (Moda) Berth Expansion Project. The contents herein are intended to provide the U.S. Army Corps of Engineers and applicable reviewers the data necessary to determine that the proposed project is the Least Environmentally Damaging Practicable Alternative (LEDPA) and to meet the responsibilities imposed by the 404(b)(1) guidelines.

2. Background

On January 10, 2020, an amendment to USACE Permit SWG-1995-02221 was submitted to the Corpus Christi Regulatory Field Office on behalf of Moda. The permit amendment proposed the dredging of approximately 3,900,000 cubic yards to increase the permitted size of the West Ship Basin by approximately 35.28 acres. Moda additionally proposes to implement improvements at their existing East Basin, 2A barge dock, as well as the construction of new West Basin barge dock Berths 7A, 7B, 7C, 8, and 9.

The submittal included a summary of the major alternatives that were considered by project stakeholders. As a result of that submittal, Public Notice comments requested a more comprehensive analysis for all alternatives. The purpose of this submittal is to provide additional details related to all analysis and factors that were considered, but not included within the prior submittal.

3. Applicant's Purpose and Need

3.1. Purpose and Need Background

According to the U.S. Energy Information Administration (EIA), the U.S. is projected to become a net exporter of petroleum liquids in 2020 in response to production increases. Further, production of crude oil is projected to increase through 2025, with production remaining high for approximately 40 years (EIA 2019). Moda is situated directly on the Corpus Christi Ship Channel (CCSC), near the Gulf of Mexico, and near the entrance of the Port of Corpus Christi. Their close proximity to existing deep water channels allows for relatively short vessel travel times and their existing onshore facility allows for the use of existing infrastructure to accommodate the increased export demands in a safe and efficient manner. The proposed expansion of the West Basin will assist in safe berthing activities to accommodate the additional and larger vessels beginning to call at U.S. ports, including their current and committed future customers.

3.2. Applicant's Purpose and Need Statement

The purpose of and the need for the proposed project is to provide the maritime infrastructure necessary to accommodate the increasing demand by existing and committed, future customers at the Moda Ingleside Oil Terminal in a logistically safe and efficient manner.

3.3. Project Siting Criteria

While the above purpose and need statement is designed to capture concisely the purpose for this application, the satisfaction of this need requires consideration of numerous additional facts and circumstances. Thus, the Alternatives Analysis below is based on seven siting criteria essential to meet the applicant's purpose and need for the project.

The following siting criteria was utilized when considering project alternatives:

- a) Allow optimal use of existing onshore infrastructure in a safe and efficient manner.
- b) Close proximity to CCSC.
- c) Minimize required new dredging.
- d) Minimize impacts to special aquatic sites.
- e) Add at least one new dock capable of berthing two Suezmax vessels.
- f) Provide dedicated barge facilities.
- g) Provide practicable construction access such that the project can be constructed in a safe and efficient manner.

4. Alternatives Analysis

4.1. Section 404(b)(1) Guidelines and Requirements

The applicant must demonstrate that they have chosen the LEDPA and that no practicable alternative would have a less-adverse impact on waters of the United States and/or special aquatic sites. "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR 230.10 (a)(2)).

Further, 40 CFR 230.10 (a)(3) guidelines state, "Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise." As defined, the project proposes to construct maritime infrastructure including barge docks and a deep-water dock and is therefore, inherently water dependent.

Guidelines also require that offsite alternatives be assessed to determine if property currently unowned by the applicant would be better suited to carry out the project's purpose. CFR 40 230.10 (a)(2) states, "If it is otherwise a practicable alternative, an area not presently owned by the

applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.”

4.2. Preliminary Alternatives

Alternatives Considered

The following alternatives were considered for this project:

- No Action Alternative
- Offsite Alternatives
- Onsite Alternative 1
- Onsite Alternative 2
- Onsite Alternative 3
- Onsite Alternative 4 (Preferred Alternative)

4.2.1. No-Action Alternative

The No Action Alternative does not result in the construction of the proposed Berth Expansion Project. Therefore, this alternative avoids all impacts to waters of the United States and does not impact any special aquatic sites. However, the No Action Alternative also does not achieve the applicant’s purpose and need for the project. The No Action Alternative does not provide Moda the opportunity to provide the required maritime infrastructure and capacity to meet the increasing demands of their existing and committed future customer base.

4.2.2. Action Alternatives Considered

Offsite Alternatives

Onsite Alternative 1

Onsite Alternative 2

Onsite Alternative 3

Onsite Alternative 4 (Preferred Alternative)

4.3. Offsite Alternatives

Based upon the siting criteria outlined above, Moda has been unable to locate an offsite location with appropriate zoning, sufficient waterfront footage, and adjacent water depths to accommodate the proposed project components even when cost factors are not considered. To construct a dock capable of berthing two Suezmax vessels, the property must be a waterfront parcel. Further, the adjacent waterfront must include access to channels both deep enough and wide enough to accommodate Suezmax ship traffic. If such waterfront property were located, it must be in a commercial/industrial zoned area to allow for the berthing and loading of the vessels. Lastly, if these siting requirements could be met, the property must be within close enough proximity to Moda’s existing onshore site such that pipelines could be constructed to connect the berthing docks

to the existing onshore infrastructure, including the storage tanks. Therefore, Moda searched properties within the surrounding counties including, Aransas, San Patricio, and Nueces counties.

4.3.1. Aransas County Properties

Numerous undeveloped waterfront properties were available within Aransas County. However, most properties were zoned residential and situated within or adjacent to nearby canal subdivisions and other residential housing. Moda learned of a property in Aransas County that was potentially going to be listed for sale with appropriate industrial zoning and a location along the shoreline. However, this property is situated along the Gulf Intracoastal Waterway (GIWW) which consists, generally, of a 12-foot deep by 125-foot wide channel. With a typical beam of 164 feet and draft of 45 feet, the GIWW is not a deep enough or wide enough channel to support Suezmax vessel traffic. No existing channel within Aransas County was capable of supporting Suezmax traffic. Therefore, no Aransas County properties were further advanced for consideration as an offsite alternative.

4.3.2. Nueces County Properties

Nueces County was determined to have an existing channel both deep enough and wide enough to support Suezmax vessels, specifically the CCSC. A search of currently available property listings resulted in 28 properties for sale that were appropriately zoned for industrial development. However, none of the listings included a waterfront parcel adjacent to the CCSC, as the Port of Corpus Christi Authority (PCCA) owns a significant portion of the waterfront land along their channel. Further, if properties situated along the CCSC within Nueces County were available, significant infrastructure would be necessary to lay pipeline from the existing onshore storage terminal to load vessels at a berthing dock in Nueces County.

4.3.3. San Patricio County Properties

The La Quinta Ship Channel within San Patricio County is capable of supporting Suezmax vessels. The applicant's existing onshore facility is located along the shoreline within San Patricio County. A search of commercial industrial zoned property within San Patricio County was again unable to locate any properties for sale. A review of aerial imagery concluded that even if a property within this area were to be located, it is highly likely that construction of a new berthing dock would also result in impacts to existing seagrass beds. In addition to seagrass impacts, it is likely that other impacts would be associated with the installation of pipeline necessary to connect Moda's existing onshore tanks to the new dock.

4.3.4. Offsite Alternatives Summary

As outlined above, if an offsite parcel were located, it is likely that to develop an existing property dredging and other shoreline modifications for berthing platforms would likely be necessary. Coupled with the necessary installation of pipelines and other inland infrastructure that would be needed to tie a remote berthing facility to Moda's existing onshore terminal, it is likely that an offsite terminal would result in greater impacts than those currently proposed. Further, the Offsite Alternative likely would not meet siting criteria's a, b, c, d, or g.

4.4. Onsite Alternatives

To determine the appropriate dock layout and dredge requirements to add a dock capable of berthing two Suezmax vessels, the applicant took into account local practices and input from the Pilots, consultants, and tug service providers where the terminal is located. The applicant also took into account existing infrastructure, including existing docks at the terminal to develop the most efficient use of the available land while meeting the requirements for clearances from the existing federal channel, existing adjacent property boundaries, water rights, and franchise agreements with the Port of Corpus Christi Authority. Four onsite options were evaluated during this process.

4.4.1. Onsite Alternative 1

Onsite Alternative 1 was comprised of dredging a basin adjacent to Moda's entire waterfront, totaling an approximate 66.04-acre dredge area as depicted in Figure 1. The result of Onsite Alternative 1 included impacts to approximately 20.26 acres of submerged aquatic vegetation and approximately 4.05 acres of estuarine emergent wetland. Onsite Alternative 1 project components included a larger turning basin, separate barge docking areas, additional shoreline armoring, and use of additional adjacent upland areas to provide the infrastructure needed to provide land access and loading capabilities to the new docks.

Through the above described coordination, Onsite Alternative 1 was excluded. It was determined through coordination with the Pilots and other guidance that the dedicated barge docking area could be safely placed to the east of the deepwater dock and achieve a smaller overall project footprint. As a result, the turning basin or dredge flare could be reduced to the minimum required dimensions to safely accommodate only the vessels berthing at the new deepwater dock.

Further evaluations concluded that the current and future committed customer demand could be accommodated with existing onshore infrastructure so additional upland development would not be required to meet the project's purpose and need. Therefore, Alternative 1 was determined to be unsuitable as it did not meet siting criteria's c or d, did not represent the most conservative project required to support the purpose and need, nor meet the goal of minimization and avoidance to create the least environmentally damaging practicable alternative.

4.4.2. Onsite Alternative 2

Onsite Alternative 2 was comprised of dredging a basin adjacent to Moda's western limit of the currently approved Dock 5 dredge flare area, as well as an additional dredge area located adjacent to the south of the CCSC, totaling an approximate 16.0-acre dredge area as depicted in Figure 2. The result of Onsite Alternative 2 included impacts to approximately 3.1 acres of submerged aquatic vegetation. Onsite Alternative 2 project components included an expanded dredge area adjacent to the currently approved dredge flare and south of the CCSC, and use of additional adjacent upland areas to provide the infrastructure needed to provide land access and loading capabilities to the new docks.

Through the above described coordination, Onsite Alternative 2 was excluded. It was determined through coordination with the Pilots that the location in relation to deepwater docks 5 and 7 did not provide adequate operating space for the simultaneous maneuvering of pilot ships during Suezmax vessel arrival and/or departure. Additionally, Onsite Alternative 2 did not include any project components concerning barge docking space. The currently developed shoreline between deepwater dock 5 and 7 would not provide sufficient water frontage to accommodate barge docking. The water frontage located west of the deepwater dock 8 is currently undeveloped and does not contain the required upland infrastructure to provide land access and loading capabilities to potential barge docks. All other developed water frontage is currently being utilized to accommodate both existing and proposed deepwater docks.

Further evaluations concluded that the current and future committed customer demand could be accommodated with existing onshore infrastructure so additional upland development would not be required to meet the project's purpose and need. Additionally, Onsite Alternative 2 did not provide dedicated barge facilities and did not provide safe distancing from existing marine infrastructure, thereby only safely increasing the berthing capacity by one. Therefore, Alternative 2 was determined to be unsuitable as it did not meet siting criteria's c, d, e, or f.

4.4.3. Onsite Alternative 3

Onsite Alternative 3 included constructing a new Dock 2-A perpendicular to the shoreline as depicted on Figure 3. Onsite Alternative 3 did not require any additional dredging. Consistent with the project's purpose and need, as well as the siting criteria, the proposed deepwater dock was required to accommodate two additional Suezmax vessels. Reconstructing Dock 2A as a perpendicular docking structure only results in creating one additional berthing area as the existing 2A would be lost. Further, a deepwater dock designed with this orientation results in encroachment of the CCSC setback zone. Therefore, it was determined that Onsite Alternative 3 was not a feasible project plan.

4.4.4. Onsite Alternative 4 (Preferred Alternative)

Onsite Alternative 4, as depicted on Figure 4, is the currently proposed project and Preferred Alternative. Onsite Alternative 4 allows Moda to build the required maritime infrastructure needed to increase capacity and meet the growing demand of its current and committed future customer base while minimizing the environmental impacts. The associated impacts include the loss of approximately 8.86 acres of submerged aquatic vegetation and approximately 0.95 acres of estuarine emergent wetland. Therefore, Onsite Alternative 4 was determined to minimize impacts to the maximum extent practicable while still serving the applicant's purpose and need for the project.

In identifying a project that impacts waters of the United States as the least environmentally damaging practicable alternative one must demonstrate that any alternative that results in any minimization of impacts to the aquatic environment (i.e.; less damaging alternative) is not practicable. This demonstration must consider both off-site and on-site alternatives. As demonstrated above, alternatives to address the project need and purpose are geographically limited, and additional avoidance measures onsite are not practicable. The No Build Alternative

does not address the project need. The preferred alternative was deemed a practicable alternative and is also the least environmentally damaging practicable alternative.

5. Summary

As outlined above, the applicant considered numerous project alternatives in order to identify a project design that was the LEDPA that also fulfilled project’s purpose and need. Alternatives analyzed by the applicant included both onsite and offsite project locations, as well as a No Action Alternative. In analyzing the various alternatives, the applicant ranked each feasible alternative using seven siting criteria. Table 1, below, provides a summary of findings from the applicant’s alternatives analysis evaluation. Through the above described analysis, the applicant determined that Onsite Alternative 4, the proposed project, adequately meet the project’s purpose and need while being the LEDPA.

Table 1. Alternative Analysis Evaluation						
	No Action Alternative	Offsite Alternative	Onsite Alternative 1	Onsite Alternative 2	Onsite Alternative 3	Onsite Alternative 4 (Preferred Alternative)
Meets Project Purpose and Need	1	2	3	2	1	3
Siting Criteria A	1	2	3	2	3	3
Siting Criteria B	1	2	3	3	3	3
Siting Criteria C	3	1	1	2	3	2
Siting Criteria D	3	1	1	2	3	2
Siting Criteria E	1	2	3	2	1	3
Siting Criteria F	1	2	3	1	1	3
Siting Criteria G	3	1	3	3	1	3
TOTAL SCORE	14	13	20	17	16	22
Note: Each alternative was ranked 1 – 3 based upon how adequately it met each category. A score of 1 indicates that it did not meet the criteria, 2 it partially met the criteria, and 3 the criteria were fully met.						

Literature Cited:

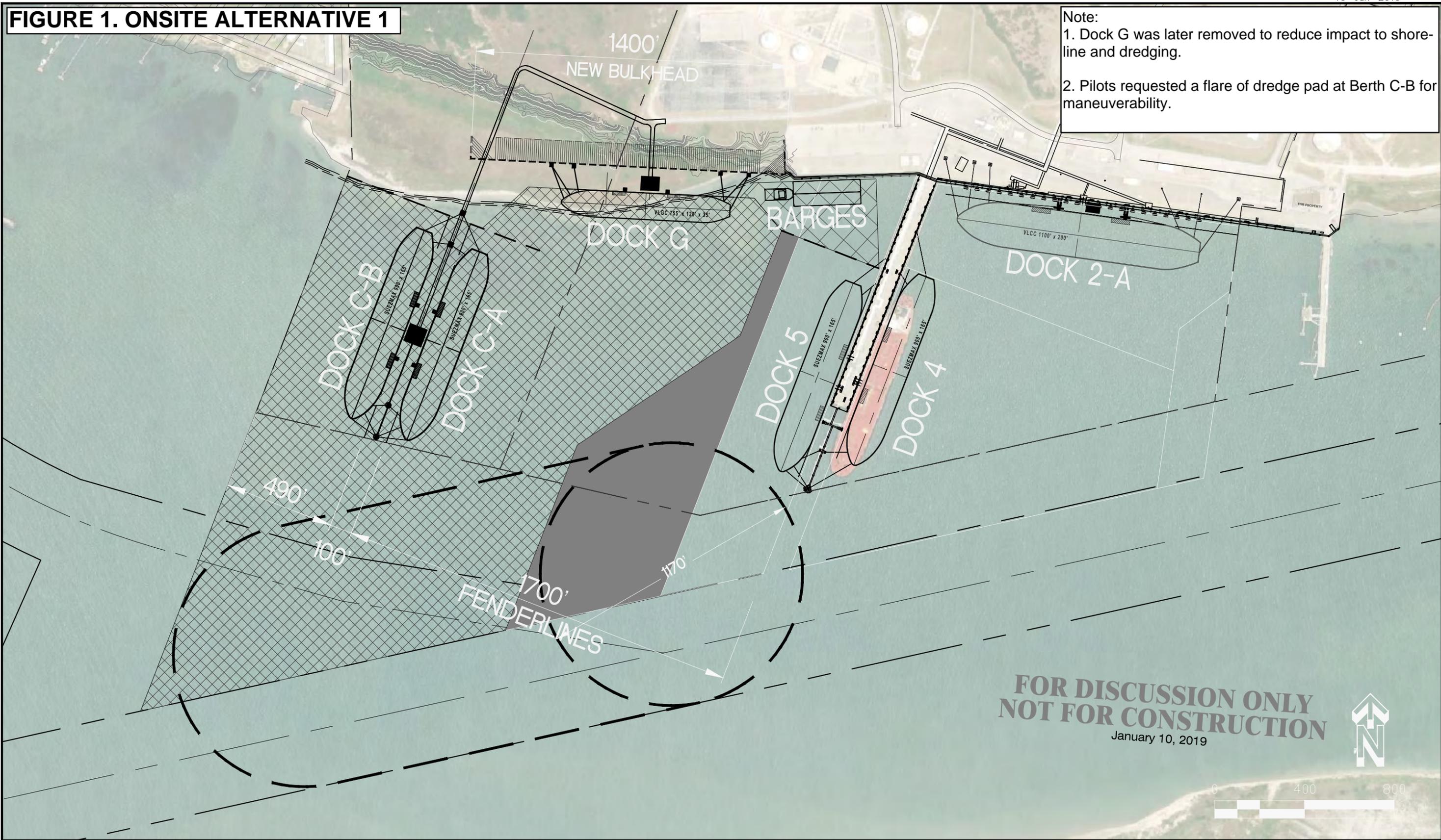
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U.S. Energy Information Administration. 2019. Annual Energy Outlook 2019, with Projections to 2050. Available online at: <https://www.eia.gov/outlooks/aeo/>. Accessed November 2019.

APPENDIX A
FIGURES

FIGURE 1. ONSITE ALTERNATIVE 1

Note:
 1. Dock G was later removed to reduce impact to shoreline and dredging.
 2. Pilots requested a flare of dredge pad at Berth C-B for maneuverability.



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 January 10, 2019



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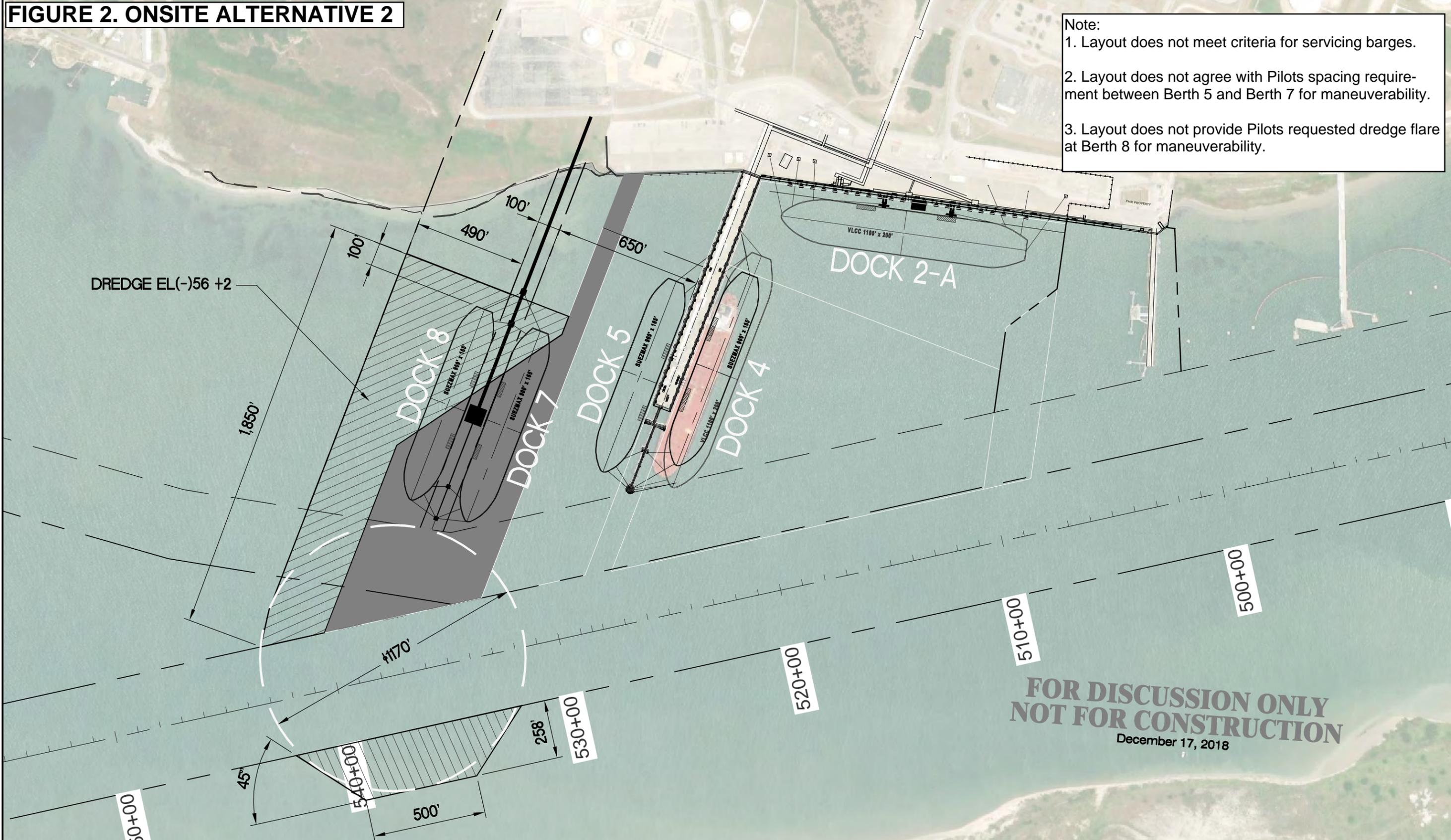
DATE DEC'18
 SCALE 1"=300'
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 DRAWN *
 CHECK ARF
 APPR'D JEJ
 CAD NO. See Side

MODA MIDSTREAM
 INGLESIDE TEXAS
INGLESIDE MARINE FACILITY
(1) VLGC + (2) SUEZMAX + BARGE BERTH
PROPOSED MARINE MASTER PLAN

SHEET NO. 10870-18
GA-02

FIGURE 2. ONSITE ALTERNATIVE 2

Note:
 1. Layout does not meet criteria for servicing barges.
 2. Layout does not agree with Pilots spacing requirement between Berth 5 and Berth 7 for maneuverability.
 3. Layout does not provide Pilots requested dredge flare at Berth 8 for maneuverability.



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J:\10000s\10870 MODA Gomez Ingleside\Drawings\18-12 Berths 7-8-9\MODA Gomez Berths 7-8-9.dwg

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 CAD NO See Side

MODA MIDSTREAM
 INGLSIDE TEXAS
GOMEZ FACILITY
BERTHS 7 & 8
PROPOSED SITE PLAN

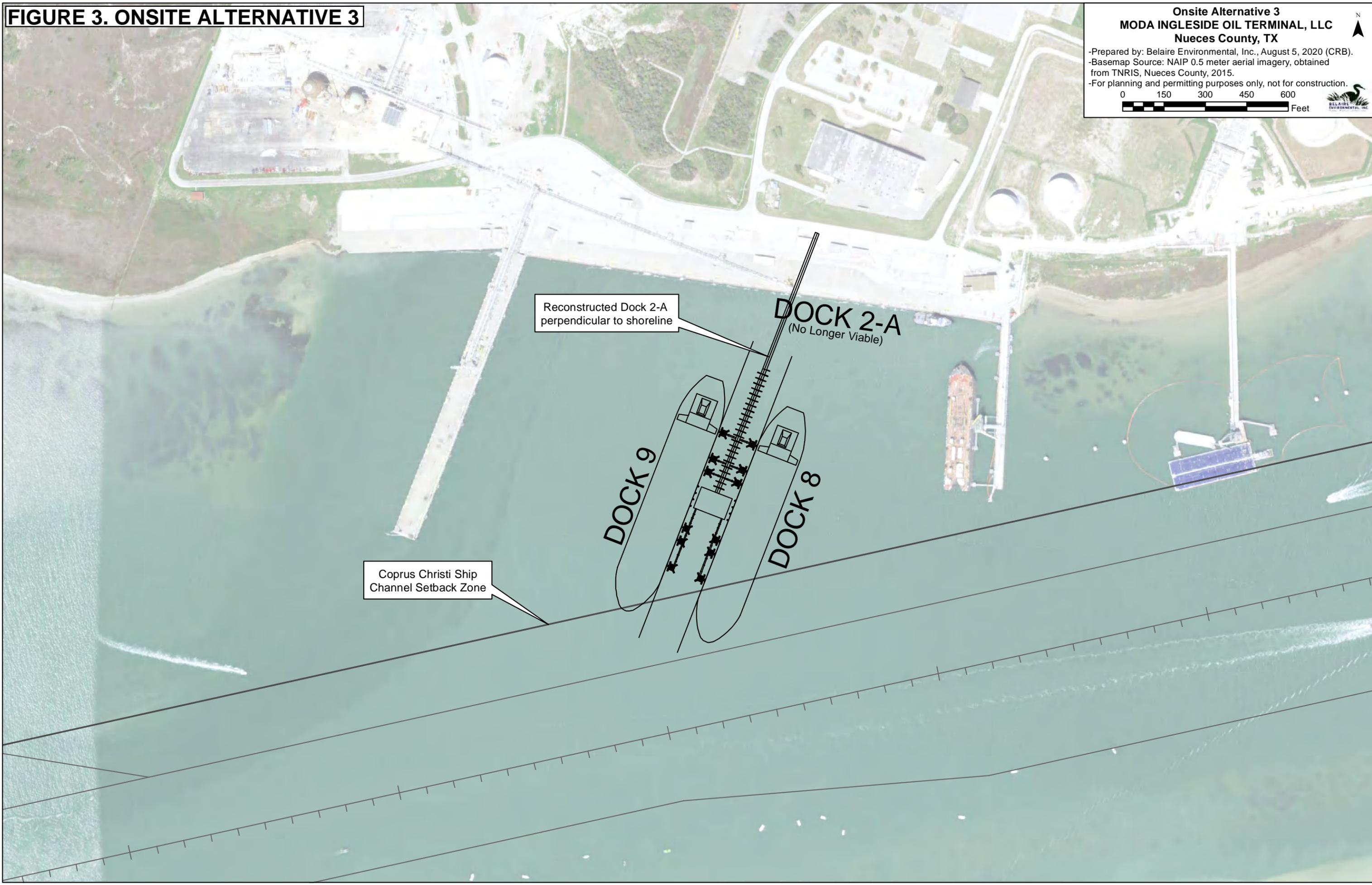
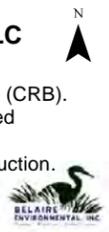
SHEET NO. 10870-18
GA-01

FIGURE 3. ONSITE ALTERNATIVE 3

Onsite Alternative 3
MODA INGLESIDE OIL TERMINAL, LLC
Nueces County, TX

-Prepared by: Belaire Environmental, Inc., August 5, 2020 (CRB).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.

0 150 300 450 600 Feet



Reconstructed Dock 2-A
perpendicular to shoreline

DOCK 2-A
(No Longer Viable)

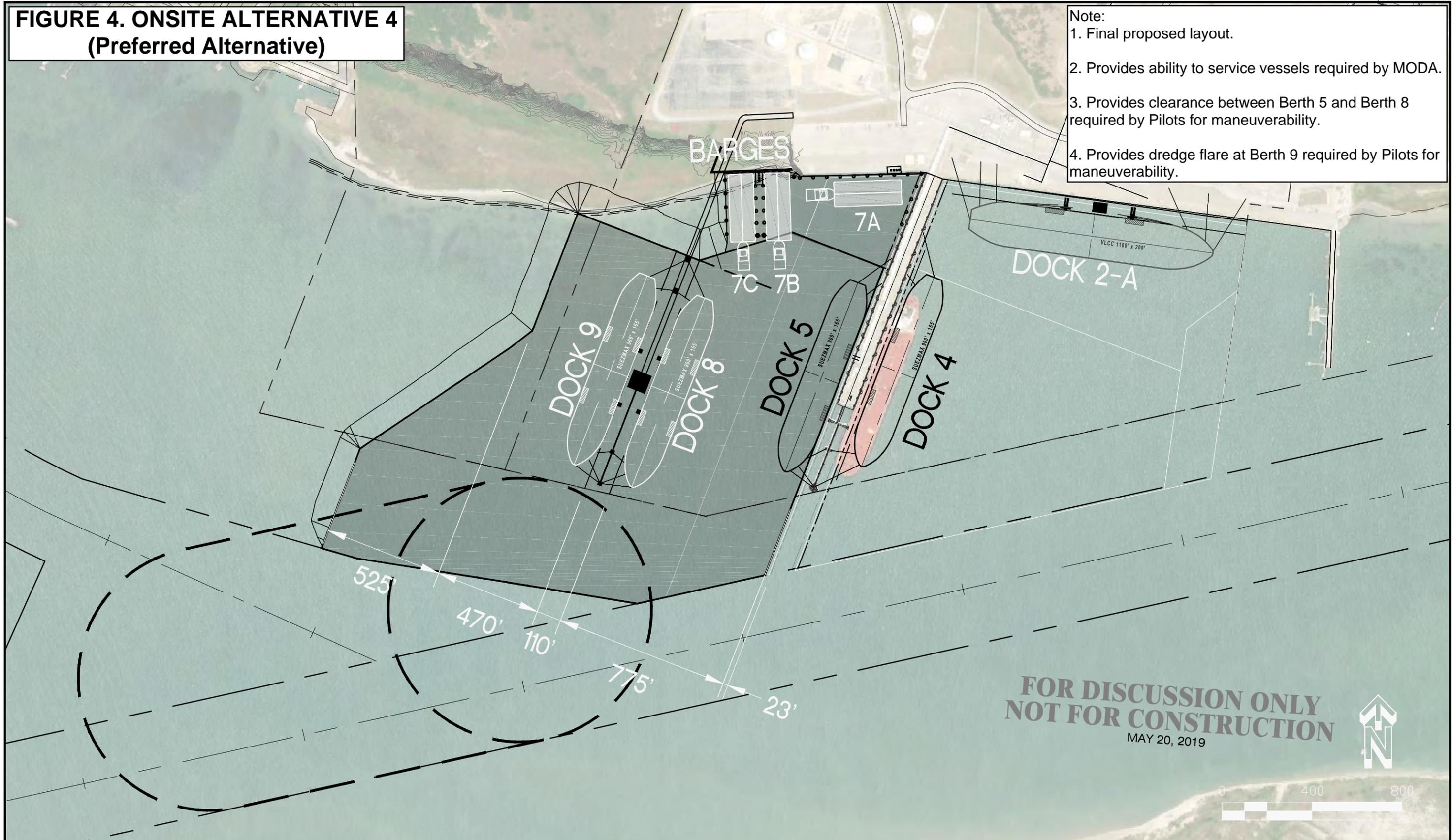
DOCK 9

DOCK 8

Coprus Christi Ship
Channel Setback Zone

FIGURE 4. ONSITE ALTERNATIVE 4 (Preferred Alternative)

- Note:
1. Final proposed layout.
 2. Provides ability to service vessels required by MODA.
 3. Provides clearance between Berth 5 and Berth 8 required by Pilots for maneuverability.
 4. Provides dredge flare at Berth 9 required by Pilots for maneuverability.



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SCALE 1"=400'
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MODA MIDSTREAM
INGLESIDE TEXAS

**INGLESIDE MARINE FACILITY
NEW SHIP PIER 8/9 & BARGE DOCK 7
PROPOSED MARINE MASTER PLAN**

SHEET NO.
10870-19
GA-12

ATTACHMENT C:
12-STEP MITIGATION PLAN

12-STEP MITIGATION PLAN
MODA INGLESIDE OIL TERMINAL, LLC
USACE PERMIT NO. SWG-1995-02221
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

Prepared for:
Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, TX 77002

Prepared by:
Belaire Environmental, Inc.
PO Box 741
Rockport, TX 78382

September 11, 2020



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Appendix B. Example Deed Restriction Document

DESCRIPTION OF THE PROPOSED ACTION

Project Area Background

Moda Ingleside Terminal, LLC (Moda) is located north of the Corpus Christi Ship Channel, along the La Quinta Ship Channel, just southeast of the community of Ingleside on the Bay and west of the Gulf Intracoastal Waterway (GIWW), Appendix A, Figure 1. Moda applied to amend U.S. Army Corps of Engineers (USACE) Permit No. SWG-1995-02221 to make improvements at their existing facility.

The existing facility is currently comprised of an East Basin and West Basin, demarcated by an existing loading dock. The facility, when purchased by Moda, was historically used for smaller vessels and other commercial trades. Moda has predominately worked within the existing site footprint to modernize and adapt the facility to accommodate their business needs with minimal impacts. Moda currently services Aframax, Suezmax, and VLCC class vessels. These vessels predominately serve the crude oil market and are some of the largest tank vessel to transit in inland ports.

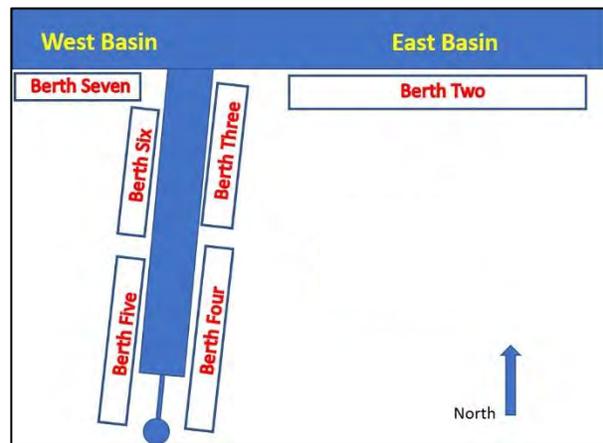


Figure 1 – Existing Berth Layout

The name and labeling of existing berths at the facility have been adopted by the current number and were assigned by the previous owner to MODA. The naming policy included allowances for smaller vessels in different trades than the current commercial plan for MODA. Simply stated, the same real estate (berth) that is covered up by a large crude tanker was previously capable of handling two smaller vessels. For example, the existing Berth Two is approximately 1,375 in length. This berth was originally divided in two; Berth 1 for LPG vessels and Berth 2 for crude service. When the berth was retrofitted to handle VLCCs, a third set of loading arms and a new name was added to the same wharf. Berth 2A was named for VLCC service. As the business plan and new owners came into the picture, the loading arms on both Berth One and the old Berth 2 were removed, leaving only one set of arms to service up to VLCC class crude tankers. Eventually Berth 2A was renamed simply Berth 2, as depicted in Figure 1.

Moda has worked diligently to improve the inland infrastructure and maximize the efficiency of the existing maritime infrastructure. To accommodate the increasing demand by existing and committed, future customers, additional maritime infrastructure is necessary.

Proposed Project

Overall, the project proposes to make improvements to Berth 2 within the existing East Basin, increase the permitted width of the West Basin, to allow construction of docks at Berth 7, and add a new deep-water ship dock in the West Ship Basin, as depicted in Figure 1.1.

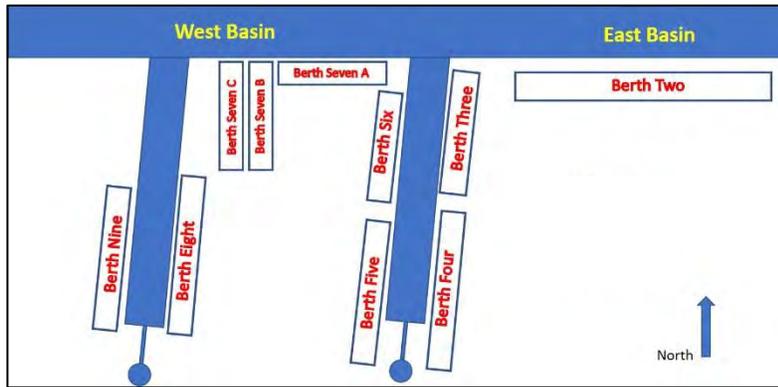


Figure 2 – Proposed Berth Configuration

Proposed improvements at Berth 2 include construction of a pile supported 35 foot by 70-foot barge platform. The new platform would require that the existing fenderline be moved approximately 38 feet waterward of its current location. Four breasting dolphins and four protection dolphins would be installed.

A new Berth 7 docking area would be constructed in the West Basin. Berth 7 barge dock construction would allow for up to three double barges, side-by-side, to dock (Berths 7A, B, and C). Berth 7A requires the construction of a loading facility within the adjacent upland facility above the existing bulkhead. Berths 7B and C require extending the existing bulkhead approximately 491 linear feet and the installation of a new pile supported barge dock that would allow berthing on each side. In total, Berths 7A, B, and C would require the installation of 38 barge dolphins.

Moda also proposes to construct a new deep-water ship dock to accommodate Suezmax vessels. This dock provides docking for up to two Suezmax vessels, one on either side of the structure. The docking areas will be designated as Berths 8 and 9. Berths 8 and 9 consists of a sheetpile causeway, pile supported approach, an 80 foot by 120 foot pile supported loading platform, Twelve breasting dolphins and nine mooring dolphins would be installed to support Berths 8 and 9.

Dredging would be required to expand the West Basin and to provide access to the newly constructed Berths. Within the vicinity of Berth 7, Moda proposes to dredge the existing bay bottom to a depth of -15 feet MLLW with a 2 foot over dredge. For the remainder of the West Basin expansion the proposed dredge depth is -54 feet MLLW with a 2 foot over dredge and 2 foot of advanced maintenance. The applicant estimates that the proposed dredging activities would result in approximately 3,900,000 cubic yards of dredge material. The proposed dredge footprint is approximately 43 acres including side slopes, creating an additional 32.8 acres of bay bottom dredged to the proposed depth. This dredging would allow additional Suezmax vessels and additional barges at the facility. Dredging would be accomplished via mechanical and/or hydraulic dredge equipment and dredged material would be placed into an existing designated dredge material placement areas (DMPA).

To stabilize the dredge side slope, and for the minimization of impacts to special aquatic sites, including seagrass, the project proposes to install an approximately 1,350 linear foot of approximate 44-foot wide articulated block mattress.

Summary of Project Impacts

Components of the proposed project resulting in impacts to aquatic resources include the proposed dredge area and the proposed bulkhead extension. Appendix A, Figure 2 provides an overview map of the proposed project impacts.

Completion of the approximate 43-acre dredge project will result in direct impacts to approximately 8.86 acres of submerged aquatic vegetation and approximately 0.80 acres of estuarine wetland.

Construction of the new bulkhead extension will result in indirect impacts of approximately 0.15 acres of estuarine wetland. The bulkhead installation is expected to result in the discharge of approximately 59.26 cubic yards of material in a jurisdictional area of approximately 0.03 acres located below the limit of annual high tide. Approximately 0.02 acres of this area is unvegetated shoreline and approximately 0.01 acres of this area is comprised of the estuarine wetland habitat. Overall, the proposed bulkhead is approximately 491 linear feet with an average jurisdictional discharge of approximately 0.12 cubic yards of material per running foot. Table 1 provides a summary of the proposed project impacts.

Table 1 Summary of Proposed Project Impacts

Summary of Proposed Project Impacts			
Impacted Habitat Type	Direct Impact	Indirect Impact	Total
Submerged Aquatic Vegetation	8.86 Acres	0	8.86 Acres
Estuarine Emergent Wetland	0.80 Acres	0.15 Acres	0.95 Acres
TOTAL PROPOSED IMPACTS			9.81 Acres

I. MITIGATION OBJECTIVES

Method of Compensation

33 CFR 332.3(b)(1) states, “In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services, taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources (including the availability of water rights), trends in land use, ecological benefits, and compatibility with adjacent land uses. When compensating for impacts to marine resources, the location of the compensatory mitigation site should be chosen to replace lost functions and services within the same marine ecological system.

The Clean Water Act 404(b)(1) guidelines (40 CFR 230) are regulations that constitute the substantive environmental criteria used in evaluating activities regulated under Section 404. Within 40 CFR 230, compensatory mitigation for losses of aquatic resources is described under

Subpart J. Additional regulations for general compensatory mitigation requirements are described in 33 CFR 332, finalized in 2008. This rule states that compensatory mitigation requirements must be commensurate with the amount and type of aquatic resources impacts associated with permit actions.

“There are three mechanisms for providing compensatory mitigation: permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation” (40 CFR 230). Purchase of credits from a mitigation bank is the preferred method of compensatory mitigation. However, no mitigation banks are available to serve the project area. The next preferred method of compensatory mitigation is the purchase of in-lieu fee program credits; the project area is not located within the service area of an in-lieu fee program. The next preferred method of permittee responsible mitigation (PRM). “Compensatory mitigation can be carried out through four methods: the restoration of a previously-existing wetland or other aquatic site, the enhancement of an existing aquatic site’s functions, the establishment (i.e., creation) of a new aquatic site, or the preservation of an existing aquatic site” (40 CFR 230).

The applicant proposes to mitigate for losses of jurisdictional waters of the United States with a combination of restoration, establishment of seagrass beds, enhancement of existing wetlands and hard substrate, and preservation of a large functioning high value Live Oak - Redbay Woodland/pothole wetland forest. This mitigation plan meets the stated regulatory goals of watershed habitat diversity, habitat connectivity, retaining and improving hydrologic resources, enhancing ecological benefits and compatibility with existing land use. This plan also has a high probability of successfully replacing lost functions and services within the watershed.

To compensate for the impacts to 8.86 acres of submerged aquatic vegetation and 0.95 acres of estuarine wetland, Moda proposes to construct an approximate 2,000-foot rock breakwater to decrease wind and wave action, providing protection to a high energy shoreline currently supporting more than five acres of estuarine wetland immediately landward of the breakwater structure, as well create conditions conducive to seagrass establishment. The rock breakwater will also provide hard substrate for establishment of oysters and associated marine organisms (aquatic resource enhancement). Following construction of the rock breakwater, Moda will plant 20 acres of seagrass landward of the structure within unvegetated bay bottom that historically supported dense seagrass beds. Further, Moda will preserve 70 acres of on-site forested high value land that includes a mosaic of pothole wetlands.

Addressing the Needs of The Watershed or Region

All components of the proposed mitigation plan address the needs of the watershed and provide significant valuable contributions to aquatic resources, seagrass, wetlands, shellfish, shoreline protection and water quality.

Seagrass Mitigation Site

The proposed seagrass mitigation site meets the needs of the watershed in multiple ways. The proposed mitigation plan includes the construction of a rock breakwater adjacent to Sunset Lake. The GLO’s Texas Coastal Resiliency Master Plan (GLO, 63) includes this area of shoreline as

needing wetland protection and/or shoreline stabilization, stating, “Living shorelines, or shorelines that combine stone armoring with vegetative buffers for two levels of stabilization, are recommended improvements.” A review of historical aerial imagery determined that this area of shoreline has in fact suffered from historical erosion. Figure 2 provides a 1961 Google Earth image with an overlay of the 2020 shoreline. Approximately 130 feet of shore has eroded during the 59-year period, a rate of 2.2 feet per year. The proposed mitigation plan achieves the GLO initiative. Also, the proposed breakwater provides substantial intertidal hard substrate for the recruitment of oysters and other marine organisms.



As Figure 3 also depicts, this area of shoreline previously supported dense seagrass beds. The small yellow circles on the image depict the extent of the current seagrass within this area, while the large yellow boundary depicts the proposed planting area.

Figure 3 – Shoreline Erosion

The seagrass beds, once established, will also contribute to the watershed needs by providing:

- Increased habitat acreage and quality, nursery areas for fish and other marine organisms, and food sources for numerous other wildlife species.
- Improved water quality through nutrient uptake and retention and sediment trapping.
- Carbon sequestration, “seagrass ecosystems are among the most significant natural carbon sinks worldwide, since they can sequester significant amounts of carbon, store it as organic carbon (C_{org}) in the sediments for long periods of time.” (Ricart, 2020). “Many factors influence the exact amount of carbon that can be taken up by a seagrass meadow, but rough calculations show that if we restore one hectare of seagrass, it would correspond to at least ten hectares of dry-land forest and even as much as 40.” (Holmer, 2018). A twenty-acre seagrass site is equivalent to roughly 8.09 hectares and based up Dr. Holmer’s research the carbon sequestration would be the equivalent to a dry-land forest ranging between 80.9 (199.9 acres) to 323.6 hectares (799.6 acres).
- Shoreline erosion protection by stabilizing sediments and wave energy absorption.
- Reduced erosion of existing wetlands behind the breakwater.

Preservation Area

The proposed 70-acres of upland Live Oak -Redbay Woodland/pothole wetland preservation also meet the needs of the watershed. Trees and forests have long been recognized as a key component to any healthy watershed. Further, the southern tip of Live Oak Peninsula and the Aransas National

Wildlife Refuge has been described as the only major concentrations of relatively undisturbed live oak brush pothole habitat occurring within the strandplain (Collins, 1987), and is an imperiled plant community at global and state levels (Smith, et al, 2019). The applicant's property in combination with the adjacent 529-acre property to the north represent the vast majority of this remaining habitat within the southern tip of the Live Oak Peninsula area. The 529-acre property is non-jurisdictional and threatened for imminent development. Protecting not just forest, but this unique and valuable forested upland/pothole wetland habitat in this area is critical to maintaining high value habitat and water quality in the area. Forested land, especially adjacent to waterbodies, provides numerous significant benefits including:

- Canopy cover intercepts rainfall. “In a North Carolina Watershed study (Kays, 1980) the mean soil infiltration rate went from 12.4 in/hr to 4.4 in/hr when a site was converted from forest (duff layer on soils) to suburban turf. Other studies (Bharati et al., 2002) have found similar results when comparing hourly infiltration rates and soil bulk density of forested areas with crops and grazed pasture.” (Cotrone, 2015). The water infiltration within the forest system prevents fast moving water from eroding soils into the bay system.
- Natural stormwater management to the area.
- A filtering system for the removal of nitrates and phosphates and other contaminants before they enter the bay system due to the land's position adjacent to a subdivision and south of a roadway.
- Groundwater recharge, which is enhanced beyond the value of a traditional forest by the presence of the pothole wetlands. The groundwater recharge is of vital importance to the adjacent estuarine wetland area and submerged aquatic vegetation.
- Preservation of a threatened and extremely valuable migratory bird habitat, insect, amphibian, reptile and other wildlife habitat that is very rapidly declining within the area.
- Preservation of a mosaic of pothole wetlands, an extremely valuable habitat being threatened by development across Texas.
- Removal of gaseous air pollutants by uptake.
- A reduction in the acreage of impervious surfaces that can be developed in this area. Additional impervious surface leads to future water quality degradation as fast-moving waters carry nutrient loads and other pollutants from nearby landscapes into the water column.

In addition to ensuring that significant contributions to the watershed are realized in perpetuity, the preservation area also provides significant contributions to the adjacent residential subdivision. The forested land provides a natural visual aesthetic between Moda's commercial site and the adjacent residential subdivision and also reduces the noise levels reaching the subdivision. Studies estimate that for every 100 feet of buffer area, noise is reduced by five to eight decibels (Bentrup, 94).

II. SITE SELECTION

Preservation Site

The on-site preservation area was selected because of its unique and valuable habitat, its proximity to the nearby estuarine wetlands and waters, and its proximity to the adjacent residential subdivision. The preservation of this area provides the best natural buffer with all of the biological, ecological and aesthetic benefits best serving fish and wildlife and the public. The preservation of this threatened and high value area in perpetuity also ensures that the water quality functions as well as the aesthetic functions of the preservation area are fully realized.

Seagrass Mitigation Site

To begin the site selection process for a seagrass mitigation site, a desktop analysis was completed for Aransas Bay, Redfish Bay, Nueces Bay and Corpus Christi Bay systems. Upon completion of the desktop analysis, eight potential mitigation sites were advanced for consideration and evaluation. Site reconnaissance surveys were completed for each of the eight sites to ground truth the desktop review. Table 2 provides a summary of how well each site met the siting criteria and Figures C through J provide an overview of each site that was considered.

The siting and ranking criteria included consideration of the following factors:

- A. Location within the watershed
 - The selected site should be within the same watershed as the impact site. Sites with the same 12-digit HUC as the impact area were ranked highest.
- B. Unvegetated bay bottom elevations/Need for fill material
 - Unvegetated bay bottom elevations should be within the typical range for seagrass establishment. Sites requiring the least amount of fill material were ranked highest.
- C. Extent of existing nearby seagrass
 - Sites where nearby persistent seagrass beds were present were given priority due to the availability of seed sources to enhance likelihood of denser propagation. Site rankings were determined by the distance to the nearest dense persistent seagrass beds.
- D. Substrate type
 - Areas with sandy bay bottoms were given the highest ranking.
- E. Proximity to the proposed project location for beneficial use
 - If it became necessary to include a beneficial use component to create a mitigation site with suitable elevations for planting, the proximity to the proposed project location would be a considerable factor. Sites were given the highest ranking based upon the distance it would require laying a dredge pipeline from the project site to the mitigation site.
- F. Adjacent property ownership and land use
 - Adjacent property ownership and land use was considered to ensure that the project was consistent with the adjacent land use, did not interfere with littoral

developments, would not likely experience significant anthropogenic disturbances, and could offer additional benefits to the adjacent land. Sites adjacent to undeveloped properties with shoreline wetlands were given the highest rankings.

G. Existing known encumbrances

- Areas of the bay with significant oil and gas interests present, such as pipelines and wells, were ranked lower to prevent impacts to the mitigation site during maintenance activities. Also, areas where known easements or other active projects were present were ranked lower. Areas with no know encumbrances were given the highest rankings.

Table 2 Analysis of Mitigation Site Alternatives

Analysis of Mitigation Site Alternatives									
Siting Criteria	Site	Shell Ridge Road	Ransom Point	La Quinta Island	Ransom Island	Dagger Island	Stedman Island	Nueces Bay	Sunset Lake*
Watershed Location		2	2	3	2	2	2	2	3
Existing Bay Bottom Elevations/Need for Fill Material		3	1	2	1	2	3	3	3
Extent of Existing Nearby Seagrass		2	3	1	3	3	3	0	3
Substrate Type		3	3	2	3	3	3	3	3
Proximity to Project for Beneficial Use		0	3	3	3	3	2	0	2
Adjacent Property Ownership and Land Use		0	3	1	3	3	2	1	3
Encumbrances		1	3	1	3	1	1	3	3
TOTAL SCORE		11	18	13	18	17	16	12	20
Note: Each alternative was ranked 1 – 3 based upon how adequately it met each criterion. A score of 0 indicates that it did not meet the criteria, a score of 1 indicates that the criteria was poorly met, 2 it partially met the criteria, and 3 the criteria was fully met. *Proposed mitigation site.									

1. Shell Ridge Road

The Shell Ridge Road site is located in Aransas Bay, Aransas County, Texas, approximately 16 miles from the project site. The site is approximately 71 acres situated on GLO owned submerged land. The substrate at this location consists primarily of sand but also has some shell hash present. Small established seagrass beds are present within the area.

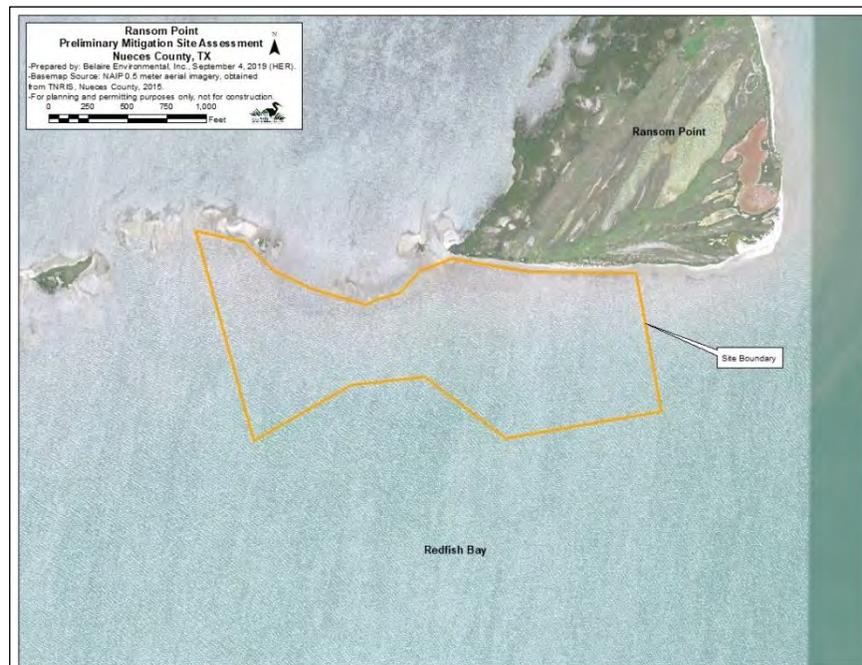
Figure 4 – Shell Ridge Road



2. Ransom Point

The Ransom Point site is located within Redfish Bay, Nueces County, Texas, approximately 4.7 miles from the project site. The site is approximately 54.5 acres, on GLO submerged land and land owned by Aransas Pass Navigation District. Established seagrass is present within the area.

Figure 5 -- Ransom Point



3. La Quinta Island

The La Quinta Island site is located within Corpus Christi Bay, Nueces County, Texas, 3 miles from the project site along an existing dredge material placement area. The site is approximately 82.5 acres, on GLO submerged land. The substrate is predominately sand with some clay present. There are not any nearby established seagrass beds.

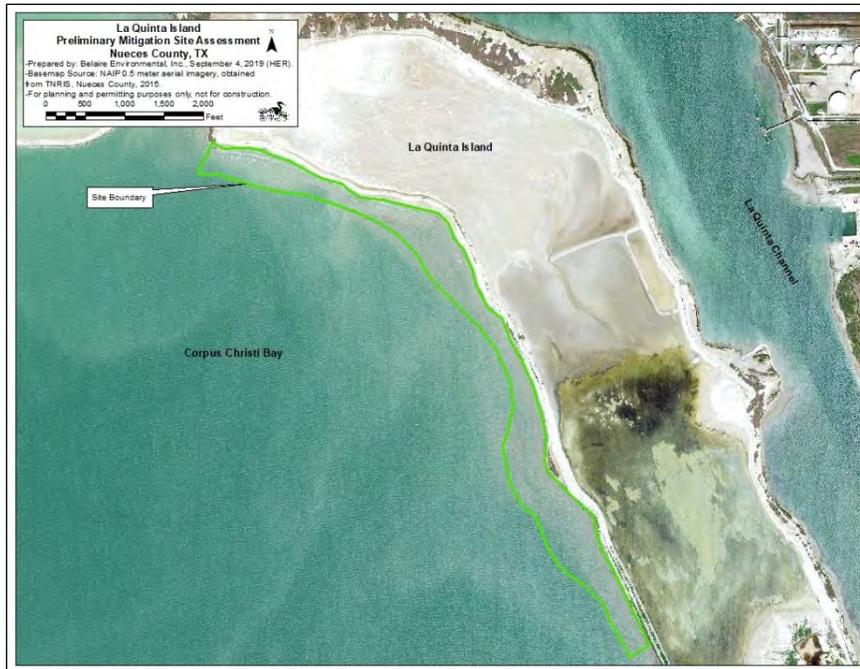


Figure 6 – La Quinta Island

4. Ransom Island

The Ransom Island site is located within Redfish Bay, Nueces County, Texas, approximately 5.6 miles from the project site. The site is approximately 158.7 acres. None of the site's existing elevations were desirable for seagrass establishment. The substrate consisted of sand and there are nearby established seagrass beds.

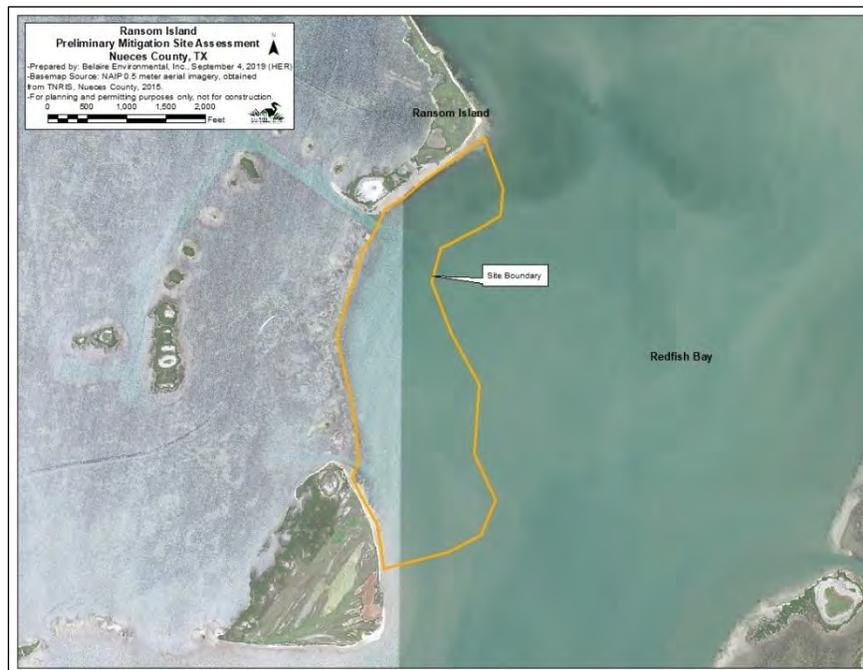


Figure 7 - Ransom Island

5. Dagger Island

The Dagger Island site is located within Redfish Bay, Nueces County, Texas, approximately 3 miles from the project area, and situated on GLO submerged land. The site is approximately 70.7 acres. The existing substrate is predominately sand with some shell hash present. There are nearby established seagrass beds.

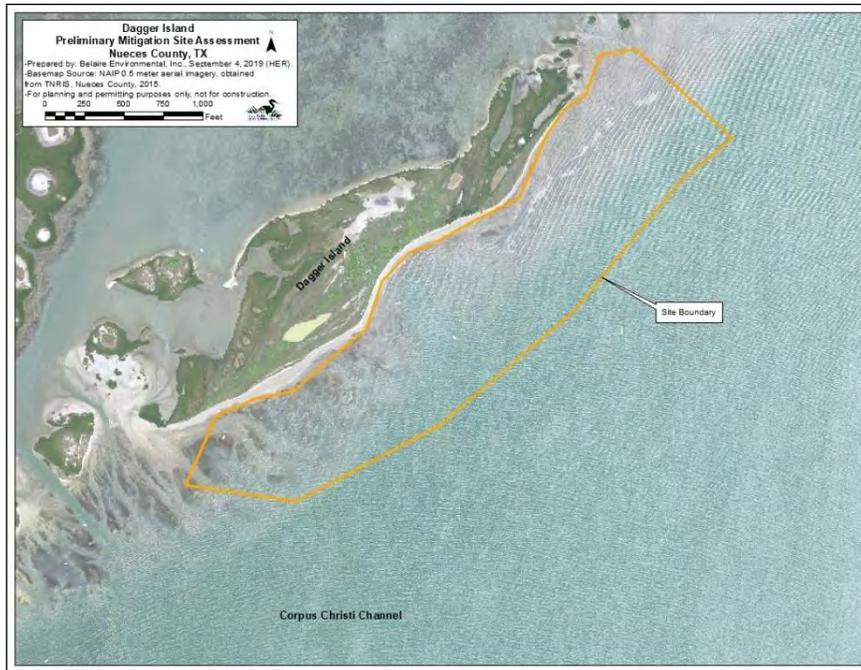


Figure 8 – Dagger Island

6. Stedman Island

The Stedman Island site is located within Redfish Bay, Nueces County, Texas, approximately 7.5 miles from the project area, situated on GLO submerged land. The site is approximately 103.8 acres. The substrate is predominately sand with some clay. There are nearby established seagrass beds.

Figure 9 – Stedman Island



7. Nueces Bay

The Nueces Bay site is located within Nueces Bay, San Patricio County, Texas, approximately 15.6 miles from the project area, situated on GLO submerged land. The site is approximately 60 acres all at suitable elevations for seagrass establishment. The substrate is predominately mud with some shell hash and shell. There are only small sparse seagrass beds nearby.



Figure 10 – Nueces Bay

8. Sunset Lake

The Sunset Lake site is located within Corpus Christi Bay, Nueces County, Texas, approximately 11 miles from the project area. The site is situated on PCCA-owned submerged land. The site is approximately 65 acres all at suitable elevations for seagrass establishment. The substrate is predominately sand. There are nearby established seagrass beds.

Figure 11 - Sunset Lake



Based upon the assessment of the desktop data, it was determined that the preferred seagrass mitigation site was the Sunset Lake site situated on Port of Corpus Christi Authority (PCCA) property.

To further determine suitability as well as the proposed planting area within the site, additional field data were collected. Surveys included the required delineation of waters of the United States, seagrass surveys, collection of water and substrate for laboratory analysis, and bathymetry surveys. In addition to site surveys in areas likely to be proposed for planting, surveys were completed behind the adjacent GLO breakwater and within adjacent natural unprotected seagrass beds to collect a baseline dataset for the area.

It is well documented that light penetration is a critical component to thriving seagrass beds. A National Oceanic and Atmospheric Administration (NOAA) report determined that light penetration is the most important factor stating, “Light penetration is the most important factor affecting seagrass growth and survival and is reduced whether directly or indirectly by three major sources of light attenuation:

- 1) Chlorophyll and microalgal or macroalgal blooms due to nutrient enrichment,
- 2) Suspended sediments and,
- 3) Color due to dissolved organic material.” (Kenworthy, W., 1991)

To begin comparisons of the major sources of light attenuation at potential planting sites to those at the existing seagrass beds chlorophyll a and particle size were analyzed.

Chlorophyll a Analysis

Figure 12 – Chlorophyll a Sample Locations



Table 3 Chlorophyll a Results

Chlorophyll a Results					
Sample Collection Date July 16, 2020	C1	C2	C3	C4	C5
Chlorophyll a (mg/m ³)	7.4	7.4	8.2	2.4	8.6
NOTE: Enco Laboratories completed the chlorophyll a analysis according to the SM 10200 method.					

Chlorophyll a concentrations are an indicator of phytoplankton abundance and biomass in the water column. Persistent high levels of chlorophyll a levels can indicate high numbers of phytoplankton and free floating macroalgae which can limit light availability. While the concentration of chlorophyll a can fluctuate over time, the laboratory results show that the levels within the proposed planting area do not exceed those at thriving seagrass beds.

Particle Size Analysis

Excessive suspended sediments also contribute to poor seagrass growth. To determine the bay bottom substrate type and silt content, samples were collected and submitted to Eurofins TestAmerica laboratory for particle size analysis. Figure 4 depicts the sample locations for this analysis and Table 3 provides a summary of the results. As expected, where seagrass is present, a higher silt content is also typically present due to the sediment trapping properties of the seagrass beds. However, overall, the existing substrate within the proposed mitigation site is consistent with substrate in areas where seagrasses are naturally present.

Figure 13 – Particle Size Sample Locations



Table 4 Particle Size Analysis

Particle Size Analysis								
Location	Sample Point	Coarse Sand	Medium Sand	Fine Sand	Total % Sand	Total % Silt	Total % Clay	Total % Gravel
BGB	S01	0.7	1.7	81.6	84.0	11.6	4.4	0.3
BGB	S02	0.0	0.3	83.3	83.6	12.8	3.6	0.0
BGB	S03	0.0	0.3	81.0	81.3	14.0	4.7	0.0
UBB	S04	0.1	0.3	96.3	96.7	0.7	2.6	0.0
ESB	S05	0.0	0.4	59.6	60.0	35.4	4.6	0.0
UBB	S06	0.1	0.2	94.7	95.0	2.0	3.0	0.0
UBB	S07	0.0	0.2	95.2	95.4	1.9	2.7	0.0
PPA	S08	0.0	0.3	94.6	94.9	2.5	2.6	0.0
PPA	S09	0.1	0.5	90.4	91.0	6.2	2.8	0.0
PPA	S10	1.7	3.6	81.0	86.3	7.0	6.4	0.3
UBB	S11	0.0	0.3	96.5	96.8	0.3	2.9	0.0
UBB	S12	0.5	0.7	94.8	96.0	1.9	2.1	0.0
ESB	S13	0.2	0.6	74.9	75.7	21.5	2.8	0.0
UBB	S14	0.7	1.1	94.7	96.5	1.3	1.7	0.4
UBB	S15	0.1	0.2	94.4	94.7	2.7	2.6	0.1
UBB	S16	0.0	0.3	85.3	85.6	11.7	2.7	0.0
UBB	S17	0.1	0.2	96.3	96.6	1.3	2.1	0.0
Location Key	BGB = Behind GLO breakwater	PPA = Within proposed planting area.			ESB = Within existing seagrass bed		UBB = Unvegetated bay bottom	

Elevation Analysis

Seagrass at the impact site was documented at elevations ranging from -0.7 feet NAVD 88 to -4.9 feet NAVD 88. Seagrass documented within the seagrass beds near the proposed mitigation site as well as behind the GLO breakwater range from +0.9 feet NAVD 88 to -1.5 feet NAVD 88. Elevations within the proposed mitigation site range from +0.7 feet NAVD 88 to -2.6 feet NAVD 88. The conservative elevation range at the mitigation site increases the likelihood of seagrass success after construction of the breakwater and planting are completed.

Site Selection Summary

As the data outlines, the conditions within the proposed planting area are similar in elevation, substrate, and other features as those at the adjacent natural seagrass beds. The analysis also found that conditions at the proposed planting area are similar to those found behind the GLO breakwater where significant natural seagrass beds occur.

Further, the proposed site is situated such that the western limit of the proposed breakwater structure is more than 750 feet from eastern limit of the existing GLO breakwater. The purpose of constructing the breakwater a sufficient distance from the existing breakwater was to reduce the likelihood of geomorphic changes including scour and deposition between and landward of the

structures. The final breakwater placement location, configuration, and dimensions will be determined based upon final engineering.

III. SITE PROTECTION INSTRUMENT

The permittee is negotiating a land use agreement with PCCA, owners of the submerged land. PCCA will retain ownership of the land and the legal agreement will include conditions that PCCA protect the site in perpetuity. The submerged land is part of 1,600 +/- acres that PCCA designated for habitat creation, restoration and enhancement projects and as such PCCA is dedicated to site protection.

For protection in perpetuity of the forested preservation area, the permittee will implement deed restrictions. Within 60-days from the date of the first impact at the project site, the applicant will have the preservation area surveyed by a Registered Professional Land Surveyor (RPLS). The RPLS will produce a legal description of the protected property. The legal description and deed restriction will be recorded at the County Clerk's office. A copy will be provided to the USACE within 30 days of filing. An example of the Deed Restriction is included as Appendix B.

IV. BASELINE INFORMATION (IMPACT AND MITIGATION SITE)

Ecological Characteristics of the Impacted Site

BEI completed a survey at the proposed impact area and its vicinity. As depicted in Appendix A, Figure 2, the proposed impacts include 0.95 acres of estuarine wetland and 8.86 acres of submerged aquatic vegetation.

The entire estuarine wetland complex was approximately 9.89 acres total, along the shoreline of Corpus Christi Bay, predominately above the elevation of annual high tide. Approximately 8.94 acres of the wetland will be avoided by the proposed project and will remain intact to provide ecological functions to the watershed. The 0.95 acres of the estuarine wetland proposed for impacts generally consisted of saltgrass (*Distichlis spicata*, OBL), saltmeadow cordgrass (*Spartina patens*, FACW), common threesquare (*Schoenoplectus pungens*, OBL) and marsh fimbry (*Fimbristylis castanea*, OBL).

The submerged aquatic vegetation within the impact site survey area totaled 20.26 acres. The bay bottom was typically comprised of sand and the bay bottom elevations where seagrass was present ranged from -0.7 feet NAVD 88 to -4.9 feet NAVD 88. Dominant seagrass species documented within the 20.26-acre survey area were manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*), and turtle grass (*Thalassia testudinum*). Clover grass (*Halophila engelmannii*) species was present within the survey area but was only documented at four grab samples. Approximately 8.86 acres of seagrass within this survey area are proposed for impacts.

Ecological Characteristics of the Proposed Mitigation Site

The proposed preservation area consists of a 70-acre undisturbed Live Oak -Redbay Woodland/pothole wetland habitat. The habitat is dominated by Texas live oak trees (*Quercus*

fusiformis), redbay (*Persea borbonia*), and yaupon (*Ilex vomitoria*). The Texas Coastal Bend Live Oak -Redbay Woodland is classified by the Ecological Mapping Systems of Texas as “deep sand live oak forest and woodland” and is imperiled plant community at global and state levels (Smith, et al, 2019).

With regards to the proposed seagrass mitigation site, a survey was completed at the proposed mitigation site. Appendix A, Figure 3 provides the Mitigation Site Survey Results, and Appendix A, Figure 4 provides the survey results for the submerged land situated behind the existing GLO breakwater. The site primarily consists of submerged unvegetated bay bottom. Elevations within the proposed site range from +0.7 feet NAVD 88 to -2.8 feet NAVD 88. Table 4, above, provides the particle size analysis for the proposed mitigation site. The site typically consists of a fine sandy bay bottom with minor components of silt, clay and gravel present. The proposed placement area of the rock breakwater consists of approximately 1.8 acres of unvegetated sandy bay bottom, ranging in elevation from -0.7 feet NAVD 88 to -2.8 feet NAVD 88, with an average elevation of -1.81 feet NAVD 88.

V. DETERMINATION OF CREDITS

The applicant will compensate for the loss of 0.95 acres of estuarine wetland and 8.86 acres of submerged aquatic vegetation by creating/restoring an approximate twenty-six-acre submerged mitigation site. Within the site, the applicant will construct a rock breakwater and plant twenty acres of seagrass shoreward of the breakwater. The proposed mitigation will result in not less than 14 acres of submerged aquatic vegetation. The success criterion is to achieve not less than 70% seagrass coverage (20 acres planted X 70% coverage = 14 acres of seagrass restoration/creation). The result of the proposed seagrass mitigation site is equivalent to a ratio of 1.58:1 up-to 2.26:1. The applicant will also protect in perpetuity a 70-acre Live Oak -Redbay Woodland that includes a mosaic of pothole wetlands, an extremely valuable and threatened habitat, a ratio of 7.14:1 for all of the 9.81 acres of unavoidable impacts.

An appropriate functional assessment model is not available in this region of the Gulf Coast to quantify appropriate compensation. The basis of the suitability of the proposed mitigation was determined by completing a thorough analysis of the watershed needs and the likelihood of successful establishment of both on- and off-site, as well as in-kind, and out-of-kind mitigation to ensure the proposed mitigation resulted in diversity and no net loss. The permittee determined that the proposed compensatory mitigation satisfies the requirements for a permittee responsible mitigation plan. Based upon outlined mitigation objectives the permittee prioritized all available options to meet with the recommended mitigation priorities and watershed needs. See Section I. Mitigation Objectives above for further detailed discussions.

As stated in the federal mitigation guidelines (40 CFR § 230.93), the likelihood of success of the proposed compensatory mitigation is a primary factor in determining the adequacy of credits. Over the past 30 years, the applicant’s consultant, Belaire Environmental, Inc. (BEI), has performed more seagrass mitigation and restoration than any other practitioner in the United States (Thorhaug, A., et al 2013). This experience includes large, successful projects of 40-55 acres on the Texas Coast. Further, BEI has provided successful seagrass mitigation services to many private sector clients as well as the U.S. Army Corps of Engineers, U. S. Fish and Wildlife Service, Texas Department of Transportation, and other governmental entities. BEI has used its experience and

expertise to select and design the proposed seagrass mitigation plan. BEI conducted an extensive evaluation of alternatives and selected the proposed seagrass mitigation site because it possesses all of the necessary features to promote seagrass development. A detailed site evaluation and analysis of on-site and off-site data indicates that this plan will achieve success because

- a) it is predominately a restoration project as the site historically supported significant seagrass beds (see Figure 3);
- b) the breakwater will result in soil stability sufficient to support seagrass;
- c) water circulation and water clarity will be sufficient to support long-term, dense populations of seagrass;
- d) soil composition is comparable to soils at nearby locations that support seagrass;
- e) shallow seagrass is present within and near the proposed mitigation site, indicating that improved water clarity and reduced wave energy will encourage seagrass establishment shoreward of the proposed breakwater; and
- f) the site is at elevations that support healthy dense seagrass beds throughout the region.

The applicant's proposed plan results in significant benefits to the watershed, proposes to establish seagrass in excess of the proposed impacts, provides a rock breakwater to protect an eroding wetland shoreline and provide hard substrate for potential oyster establishment, protects an ecologically valuable and threatened landscape, including pothole wetlands in excess of those being impacted. Overall, the applicants mitigation plan results in no net loss of aquatic resources.

VI. MITIGATION WORK PLAN

Geographic Boundaries

Moda's property is situated just north of the Corpus Christi Ship Channel, along the La Quinta Ship Channel, just east of the community of Ingleside on the Bay and west of the Gulf Intracoastal Waterway (GIWW). The proposed preservation area is situated along the western perimeter of Moda's property, just south of Main Street (Highway 1069), in Ingleside, San Patricio County, Texas. The proposed mitigation site is located within the vicinity of 27.832725, -97.217940.

The proposed seagrass mitigation site is located within the submerged waters of Corpus Christi Bay, south southwest of the Nueces Bay Causeway, US 181, Nueces County, Texas. Sunset Lake is situated immediately shoreward of the proposed mitigation site. The proposed mitigation site centroid point is located at 27.857115, -97.343124.

Construction Methods

Construction is not proposed for the forested preservation area.

To construct the proposed seagrass mitigation site a rock breakwater will be installed to attenuate wave energy, slow tidal currents along the shoreline, and provide protection from the prevailing southeast wind. Construction of this rock breakwater will provide conditions conducive for seagrass establishment. The average existing bay bottom elevation in the area of the proposed breakwater is approximately -1.81 feet NAVD 88. The precise dimensions and exact placement area will be developed as a result of the final engineering. However, the estimated final breakwater

height is +4.5 feet NAVD 88, making the typical height approximately 6.3 feet, constructed at a 2:1 slope, with a base width of approximately 40 feet, crest width of approximately 8 feet, and approximately 2,000 linear feet in length. As a result of these proposed dimensions, it is estimated that approximately 11,500 cubic yards of graded riprap will be necessary to construct the breakwater, resulting in approximately 8,300 cubic yards of jurisdictional fill below the annual high tide line. The breakwater is expected to be constructed from barges, and the crest may also be utilized for construction activities. The final engineering will determine the precise methods and feasibility of utilizing the breakwater crest during construction activities. As depicted in the delineation map, Appendix A, Figure 3, bay bottom elevations bayward of the proposed breakwater are sufficient for barge access to the site.

During construction all appropriate best management practices (BMPs) will be implemented. Silt curtains/turbidity curtains will be placed to protect all special aquatic sites within 500 feet of the construction area.

In order to avoid impacts, or minimize any unavoidable impacts, to federally-listed species, construction and operations employees will (a) be advised that manatees may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the mammal, (c) be instructed not to feed or water the animal, and (d) contact the U.S. Fish and Wildlife Service (Service) and the Texas Marine Mammal Stranding Network (TMMSN) if a manatee is sighted, and take appropriate measures to cease work if a manatee is sighted within the project area.

Construction and operations employees will also (a) be advised that sea turtles may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the sea turtle, (c) be instructed not to feed or water the animal, and (d) take appropriate measures to cease work when necessary. It should be noted that the determination and recommendations herein are based on the best available data and are subject to modification based on further verification and/or the publication of revised data from the USFWS.

Following the construction of the breakwater, the 20-acre site will be planted with a mix of seagrass species consistent with those at the impact site on not more than three-foot centers with appropriate seagrass species.

Timing and Sequence:

The permittee will initiate the approved mitigation plan within six-months of jurisdictional impacts at project site. The permittee will first install the stone breakwater structure. It is anticipated that this structure will take approximately six months to construct. Concurrent with the construction of the breakwater, the permittee will begin Texas Parks and Wildlife (TPWD) coordination to obtain the necessary transplant permit. The TPWD permit is required to be submitted 30-days prior to planting. Once approved, the TPWD transplant permit is typically valid for 60 days. The permittee will plant the site within this 60-day period. Therefore, the permittee proposes that the mitigation site would be completely installed within nine to twelve months from the date of the impacts.

Connections to Existing Waters and Upland

The proposed mitigation site is within the subtidal waters of Corpus Christi Bay.

Methods for Establishing Plant Community

The proposed seagrass planting area within the mitigation site will range in elevation from -3.0 feet NAVD 88 to +0.7 feet NAVD 88 with an average elevation of -0.6 feet NAVD 88. Based upon elevations and seagrass communities identified within reference beds adjacent to the proposed mitigation site and at the impact site. The reference beds as well as the beds at the impact site were used as a basis for achieving appropriate hydrological features, planting elevations and plant community success criteria at the mitigation site. Planting at the mitigation site will be conducted after installation of the rock breakwater. Planting species will include species documented within the impact site and include manatee grass, shoal grass, turtle grass, and clover grass. Harvesting and planting will be performed generally according to the following guidelines:

1. Plant material will be borrowed from approved sources. The applicant will obtain the necessary Texas Parks and Wildlife Department permit prior to conducting transplanting activities.
2. No more than one 6-inch plug of source material per one square yard shall be obtained from the designated borrow areas. Incidental damage to borrow areas shall be strictly avoided.
3. Complete photographic coverage of planting area taken immediately prior to and following transplant activities will be submitted to the USACE and proper resource agencies.
4. Plants will be temporarily stored in tubs of bay water until reaching the final destination. Harvested plant material will be protected from wind and sun during transport.
5. The corners of the planting site boundary will be staked with one-inch PVC pipe for identification purposes.
6. Seagrass species will be planted on 3-foot centers at a maximum. Each planting unit will consist of a washed three-inch plug and will be securely embedded in the planting surface. The stem-root interface will not protrude above, nor be more than 2 inches below existing grade. The planting hole will be tightly closed around the plant and plants will remain with roots buried and leaves exposed to the water column.
7. USACE shall be notified in writing upon initiation and completion of the planting effort.

Invasive Plant Control

The proposed mitigation site includes the planting of submerged aquatic vegetation. Texas Parks and Wildlife Department (TPWD) lists Giant Salvinia as an aquatic species of great concern. However, since salinities at the proposed mitigation site are in excess of those tolerated by this invasive species, it is not anticipated that invasive species will occur at the proposed mitigation site.

Proposed Grading Plan

No grading will be necessary. Existing seagrass in the immediate project area is typically growing at an elevation range up to +0.9 feet NAVD 88. The elevations within the proposed planting area are within this range. Elevations within the proposed planting area range from -3.0 to +0.7 feet NAVD 88.

Erosion Control Measures

The proposed mitigation site includes a rock breakwater to protect the site from prevailing southeast wind and wave action, creating conditions favorable for seagrass establishment and for protection of more than five acres of eroding estuarine wetlands along the shoreline. The rock breakwater will protect the mitigation site as well as the adjacent shoreline from erosion. Once planted and established the seagrass within the mitigation site will provide the adjacent shoreline additional protection from erosional forces.

VII. MAINTENANCE PLAN

Once constructed the rock breakwater is expected to be very low maintenance. The permittee will inspect the breakwater during all monitoring events. If any damage is observed, the damaged area will be repaired. The proposed mitigation site is situated on PCCA submerged land and the land use agreement will further require that the structure remains in good repair.

VIII. PERFORMANCE STANDARDS

If vegetation survival does not achieve 50% survival during the 60-day monitoring, the mitigation site will be replanted to the original specifications within 60 days. Replanting or other corrective measures will also occur if the site has not achieved 70% vegetation coverage at the time of the three-year monitoring event. Replanting may be undertaken sooner according to the adaptive management plan if the permittee determines it necessary.

Written monitoring reports will be submitted within 30 days of either the monitoring event or the replanting effort, if necessary. If mitigation monitoring reports describe performance standards not being met, the applicant, their environmental consultants, and the USACE will identify potential remedial actions including a timetable for accomplishing those remedial actions. 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.

IX. MONITORING REQUIREMENTS

60-Day Survival Survey:

The applicant will monitor the area after initial planting. The first survey will occur 60 days after completion of the initial planting. If 50% survival of the transplanted species is not achieved the site will be replanted to original specifications. Subsequent coverage monitoring at the planting site is described below.

Six-Month and Annual Vegetative Coverage Monitoring and Reporting Requirements:

A five-year monitoring study will be conducted following the initial planting. Monitoring efforts and subsequent progress reports containing pertinent information shall be submitted to the USACE at six-months and then annually for a period of five years following the original planting. All monitoring surveys and reports will conform to the requirements of the Regulatory Guidance Letter No. 08-03. Monitoring methods will be consistent with those normally accepted by the USACE.

X. LONG-TERM MANAGEMENT PLAN

Once the mitigation site has reached permitted success criteria and the USACE has determined that the mitigation has been successfully achieved, it is expected that the planted areas will be self-sustaining. The site will be protected in perpetuity by the land use agreement. If further long-term management efforts are required, the permittee will implement relevant components of the below described adaptive management plan.

XI. ADAPTIVE MANAGEMENT PLAN

The adaptive management plan establishes a framework for decision making as related to deficiencies observed within the mitigation site. Adaptive management efforts may include but are not limited to:

A. Installation of additional temporary wave barriers, any additional installations will occur only within unvegetated bay bottoms and utilize all BMPs so that no new impacts occur to any sensitive resource.

B. Additional planting efforts, as necessary. If additional replanting is required, it will be completed in the same manner as outlined in Section 6e, above.

C. Expansion of the planting area. In the event that particular higher or lower elevations are not successfully establishing, the permittee may extend the planting area to unvegetated bay bottom situated to the east and/or west within the appropriate elevation range.

D. Other management efforts determined necessary resulting from the monitoring data. All adaptive management actions will be documented within the next required monitoring report.

XII. FINANCIAL ASSURANCES

Financial assurances for the mitigation site will be provided by the applicant. Financial assurances will be in the form of bond measures. Moda will ensure that appropriate funding is in place giving consideration to costs associated with the land, planning, design, and engineering, construction and planting, monitoring and maintenance, reasonably foreseeable corrective measures, contingencies, legal and administrative measures. Financial assurances will be in place prior to commencing work in waters of the United States and will be phased out as the project meets performance milestones. The financial assurance instrument will not be terminated or allowed to expire without providing at least a 120-day notice to the USACE.

Moda will secure two bonds as follows.

Bond 1, Construction Assurance Bond - Since the project proposes to construct a rock breakwater, it is generally accepted that they are stable, long-term structures that require little to no maintenance. Therefore, Moda proposes to release this bond upon agreement that the as-built breakwater survey meets with USACE approval. Upon completion of the as-built construction, Moda will submit the survey and notify the USACE that construction has been completed and provide the 120-day notice to release this bond.

Bond 2, Performance Assurance Bond – This bond would remain in place until the project is determined successful based upon all success criteria outlined within this plan. The performance assurance covers all mitigation project costs less breakwater construction.

XIII. LITERATURE CITED

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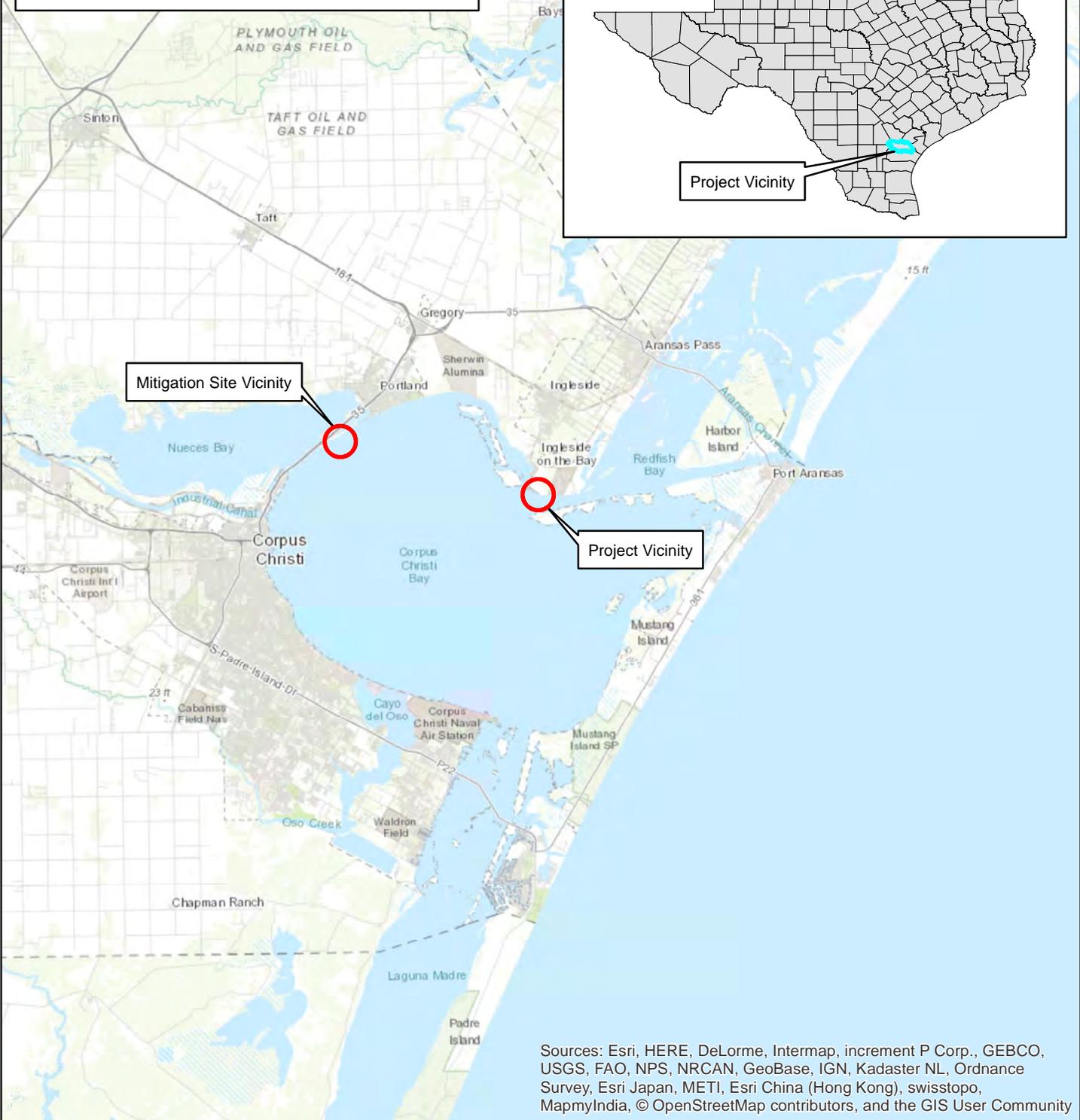
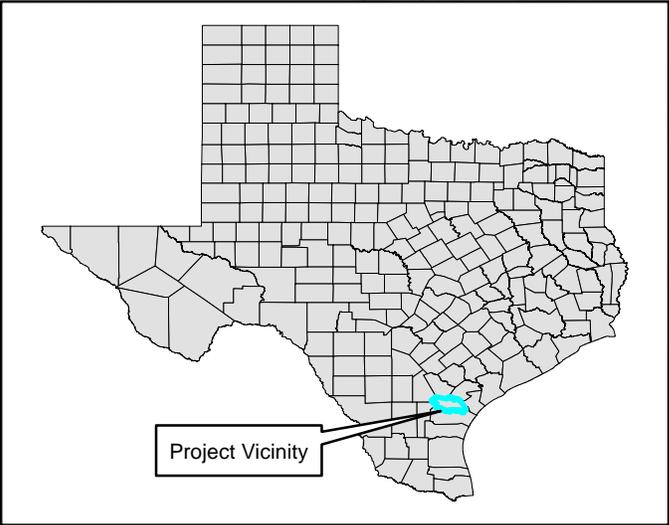
Appendix A
Figures

Figure 1.
Project Vicinity Map

Vicinity Map

Notes:

- Prepared by: Belaire Environmental, Inc., Sept.11, 2020 (SKF).
- Basemap Source: Esri, World Topographic Map.
- For planning and permitting purposes only, not for construction.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

APPLICANT:
 MODA INGLESIDE OIL TERMINAL, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



PREPARED BY:
 BELAIRE ENVIRONMENTAL, INC. PO
 BOX 741, ROCKORT, TX 78381
 September 11, 2020 page ____ of ____

Figure 2.
Proposed Impacts

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas

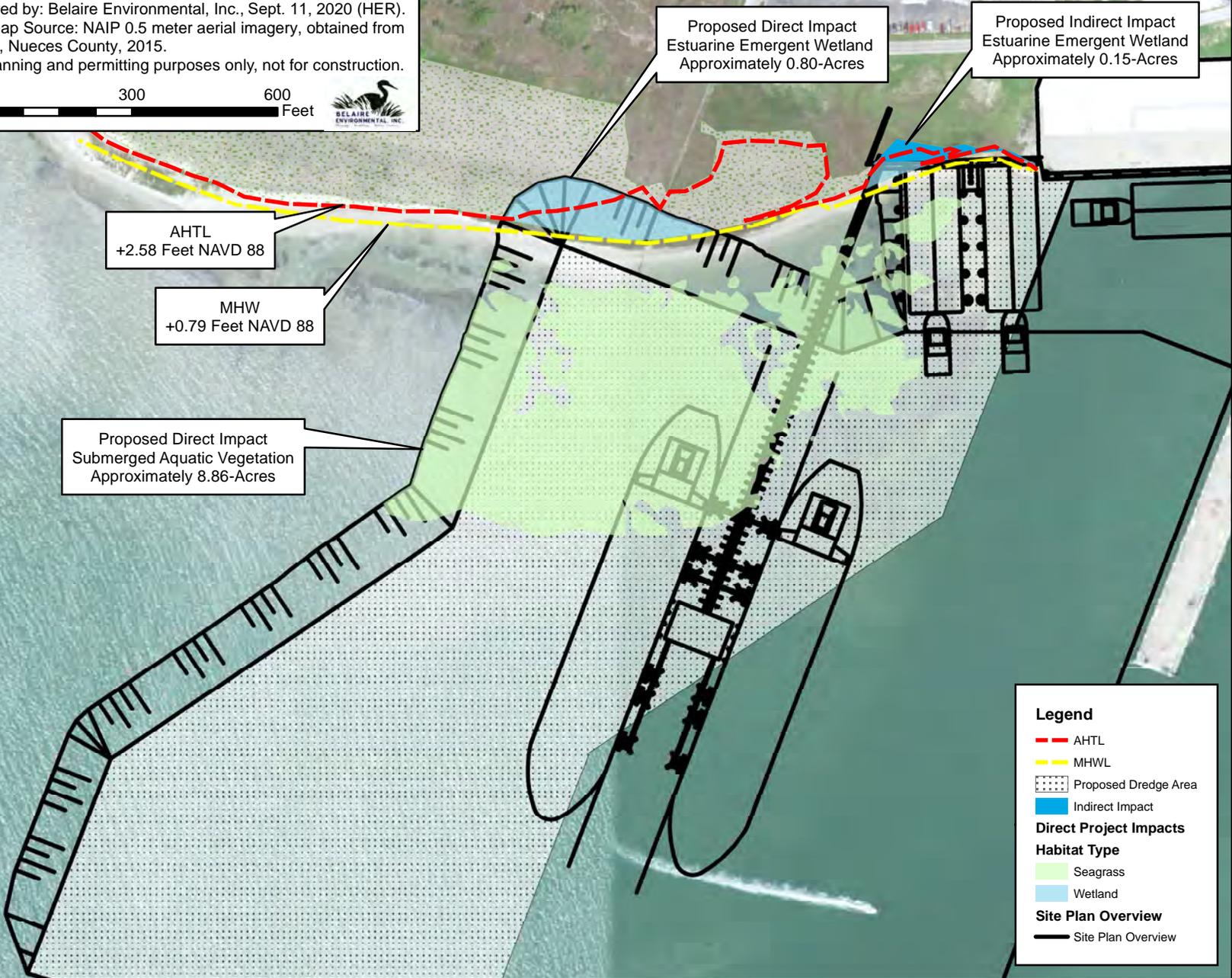


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Unavoidable Project Impacts
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas

NOTES:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (HER).
 -Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
 -For planning and permitting purposes only, not for construction.

0 300 600 Feet



AHTL
 +2.58 Feet NAVD 88

MHW
 +0.79 Feet NAVD 88

Proposed Direct Impact
 Submerged Aquatic Vegetation
 Approximately 8.86-Acres

Proposed Direct Impact
 Estuarine Emergent Wetland
 Approximately 0.80-Acres

Proposed Indirect Impact
 Estuarine Emergent Wetland
 Approximately 0.15-Acres

Legend

- AHTL
- MHWL
- Proposed Dredge Area
- Indirect Impact

Direct Project Impacts

Habitat Type

- Seagrass
- Wetland

Site Plan Overview

- Site Plan Overview

Figure 3.
Mitigation Site Survey Results

Mitigation Site Survey
Moda Ingleside Oil Terminal, LLC
SWG- 1995-02221
Ingleside, San Patricio County, Texas

Notes:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (JAM).
 -Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
 -For planning and permitting purposes only, not for construction.



Sunset Lake

AHTL (+2.85 Feet NAVD 88)

MHWL (+1.01 Feet NAVD 88)

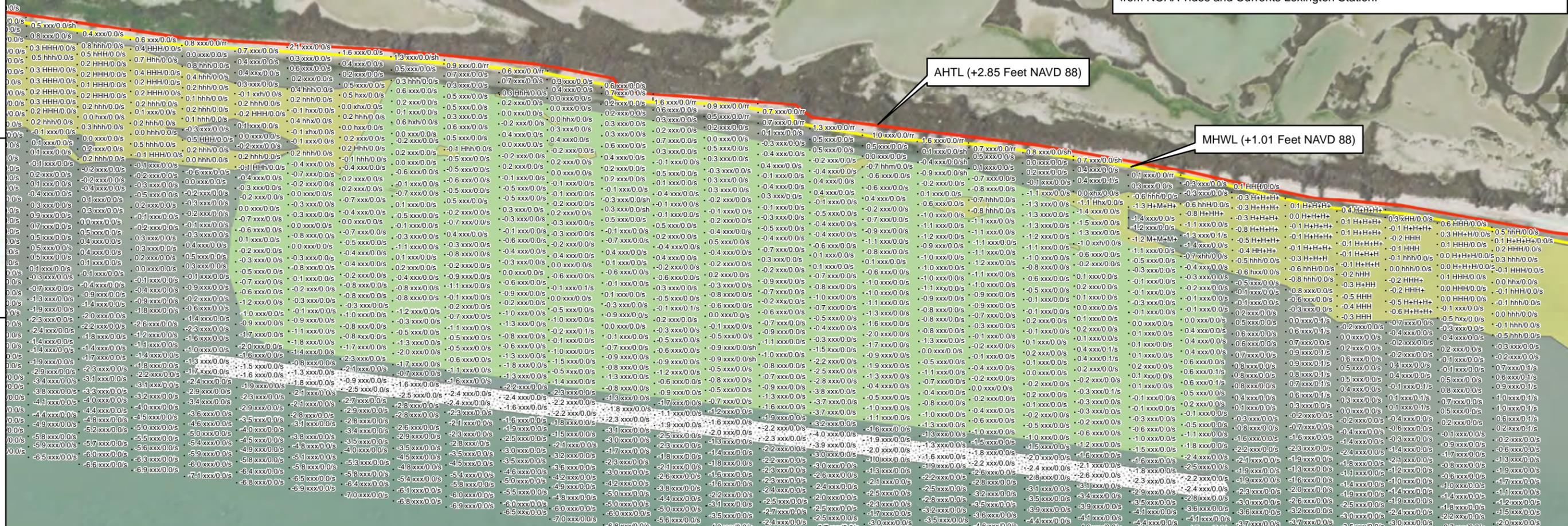
Notes:
 -Each sample point indicates elevation, presence or absence of seagrass, sediment depth and type.

Seagrass Data Key:
 Types of Seagrass:
 h= Shoalgrass (*Halodule wrightii*)
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

-Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 -H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 -H+: Dense (>67% Coverage) Shoalgrass

-Annual High Tide Line (AHTL) was determined to be +2.85 feet NAVD 88, based on a 10-year average, a previously approved USACE method.
 -Mean High Water Line (MHWL) was determined to be +1.01 feet NAVD 88, obtained from NOAA Tides and Currents Lexington Station.

Sediment Data Key:
 Types of Sediment:
 s= sand
 sh= shell hash
 sm= sandy mud
 m= mud
 rr= rock/riprap



Legend

- Seagrass Sample Point
- Breakwater/P
- Planting Area
- Existing Seagrass
- AHTL
- MHWL

Corpus Christi Bay

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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Figure 4.
Reference Site Survey Results

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curitts
 Ingleside, San Patricio County, Texas

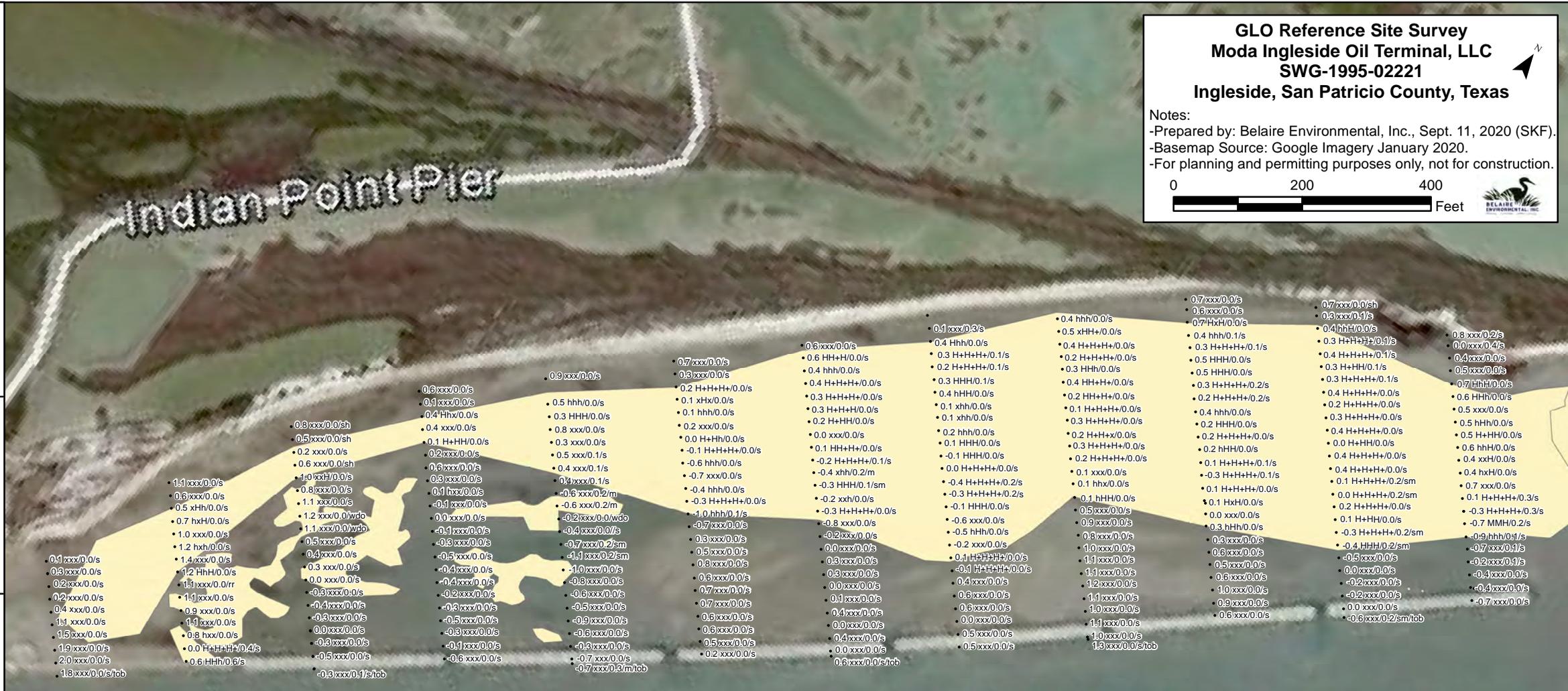


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GLO Reference Site Survey
Moda Ingleside Oil Terminal, LLC
SWG-1995-02221
Ingleside, San Patricio County, Texas



Notes:
 -Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (SKF).
 -Basemap Source: Google Imagery January 2020.
 -For planning and permitting purposes only, not for construction.



Legend

- Seagrass Sample Point
- GLO_Seagrass

Notes:
 -Each sample point indicates elevation, presence or absence of seagrass, sediment depth and type.

Seagrass Data Key:
 Types of Seagrass:
 m= Manatee grass (*Cymodocea filiformis*)
 t= Turtle grass (*Thalassia testudinum*)
 c= Clover grass (*Halophilla engelmannii*)

Sediment Data Key:
 Types of Sediment:
 s= sand
 sh= shell hash
 sm= sandy mud
 m= mud
 rr= rock/riprap
 tob= toe of breakerwater
 wdo= whole dead

- Letters to the right of the substrate represent as follows:
 - x: No vegetation present
 - h: Sparse (<33% Coverage) Shoalgrass
 - H: Moderately Dense (33% to 67% Coverage) Shoalgrass
 - H+: Dense (>67% Coverage) Shoalgrass

Figure 5.
Mitigation Site Plan View

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



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Mitigation Site Plan View



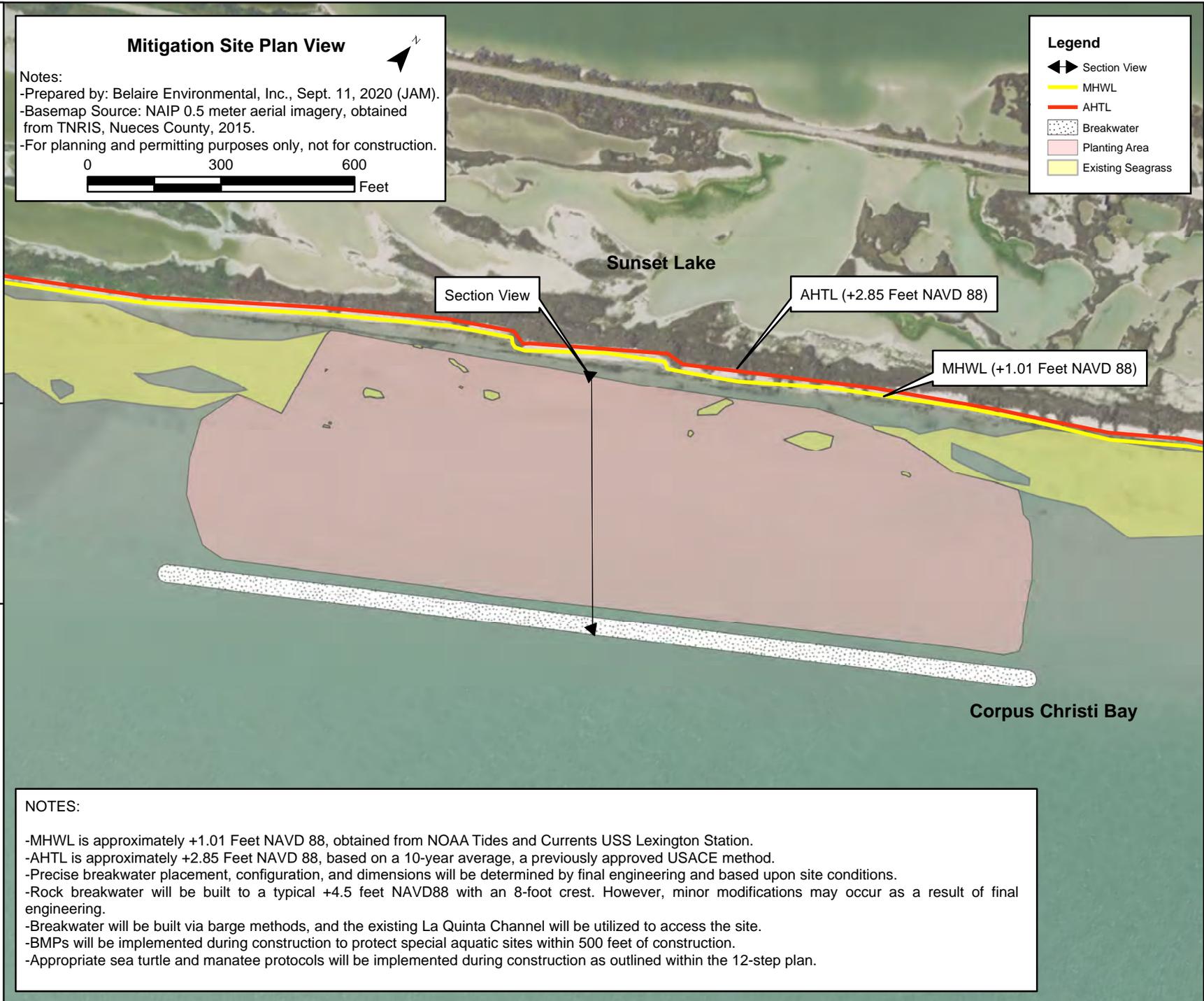
Notes:

- Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (JAM).
- Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
- For planning and permitting purposes only, not for construction.



Legend

- ↔ Section View
- MHWL
- AHTL
- Breakwater
- Planting Area
- Existing Seagrass

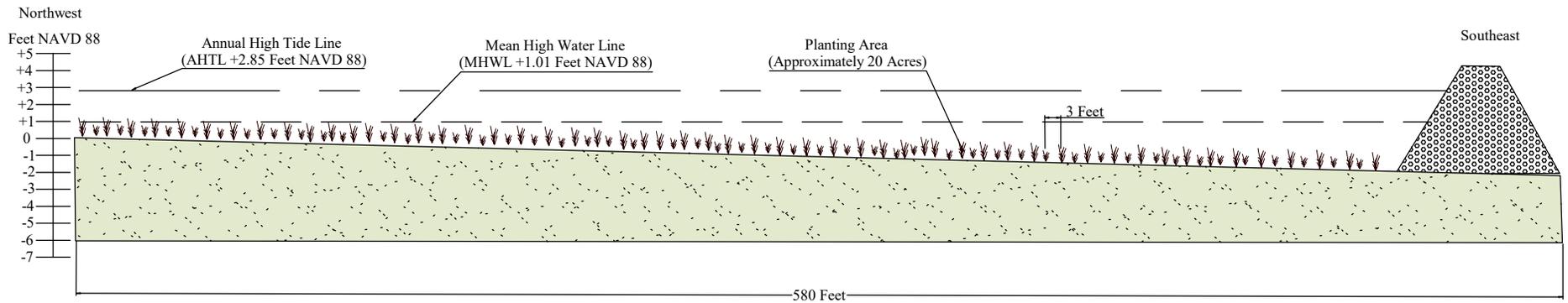
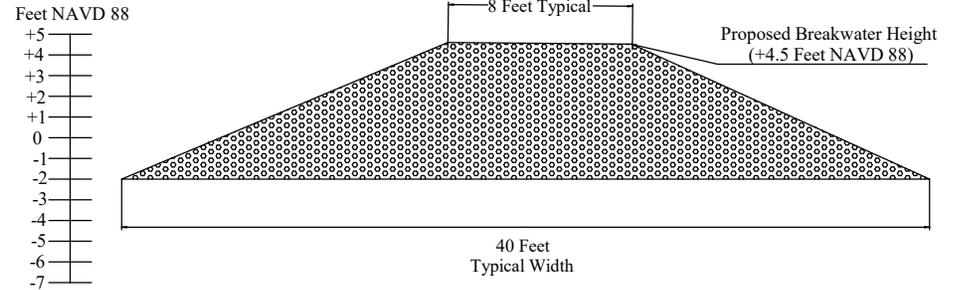


NOTES:

- MHWL is approximately +1.01 Feet NAVD 88, obtained from NOAA Tides and Currents USS Lexington Station.
- AHTL is approximately +2.85 Feet NAVD 88, based on a 10-year average, a previously approved USACE method.
- Precise breakwater placement, configuration, and dimensions will be determined by final engineering and based upon site conditions.
- Rock breakwater will be built to a typical +4.5 feet NAVD88 with an 8-foot crest. However, minor modifications may occur as a result of final engineering.
- Breakwater will be built via barge methods, and the existing La Quinta Channel will be utilized to access the site.
- BMPs will be implemented during construction to protect special aquatic sites within 500 feet of construction.
- Appropriate sea turtle and manatee protocols will be implemented during construction as outlined within the 12-step plan.

Figure 6.
Mitigation Site Section View

Section View
Moda Ingleside Oil Terminal, LLC
SGW-1995-02221
Ingleside, San Patricio County, Texas



Notes:

- All elevations are shown in Feet NAVD 88
- MHWL is approximately +1.01 Feet NAVD 88, obtained from NOAA Tides and Currents USS Lexington Station.
- AHTL is approximately +2.85 Feet NAVD 88, based on a 10-year average, a previously approved USACE method.
- Precise breakwater placement, configuration, and dimensions will be determined by final engineering and based upon site conditions.
- Rock breakwater will be built to a typical +4.5 feet NAVD88 with an 8-foot crest. However, minor modifications may occur as a result of final engineering.
- Breakwater will be built via barge methods, and the existing La Quinta Channel will be utilized to access the site.
- BMPs will be implemented during construction to protect special aquatic sites within 500 feet of construction.
- Appropriate sea turtle and manatee protocols will be implemented during construction as outlined within the 12-step plan.
- A mix of seagrass species will be planted within the 20-acre site on 3-foot centers, maximum.
- For planning and permitting only, not for construction.
- Prepared by Belaire Environmental, Inc. Sept. 11, 2020 (SKF).

Not to Scale

Moda Ingleside Oil Terminal, LLC
 POC: Clayton Curtis
 Ingleside, San Patricio County, Texas



PREPARED BY:
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 September 11, 2020 page ___ of ___

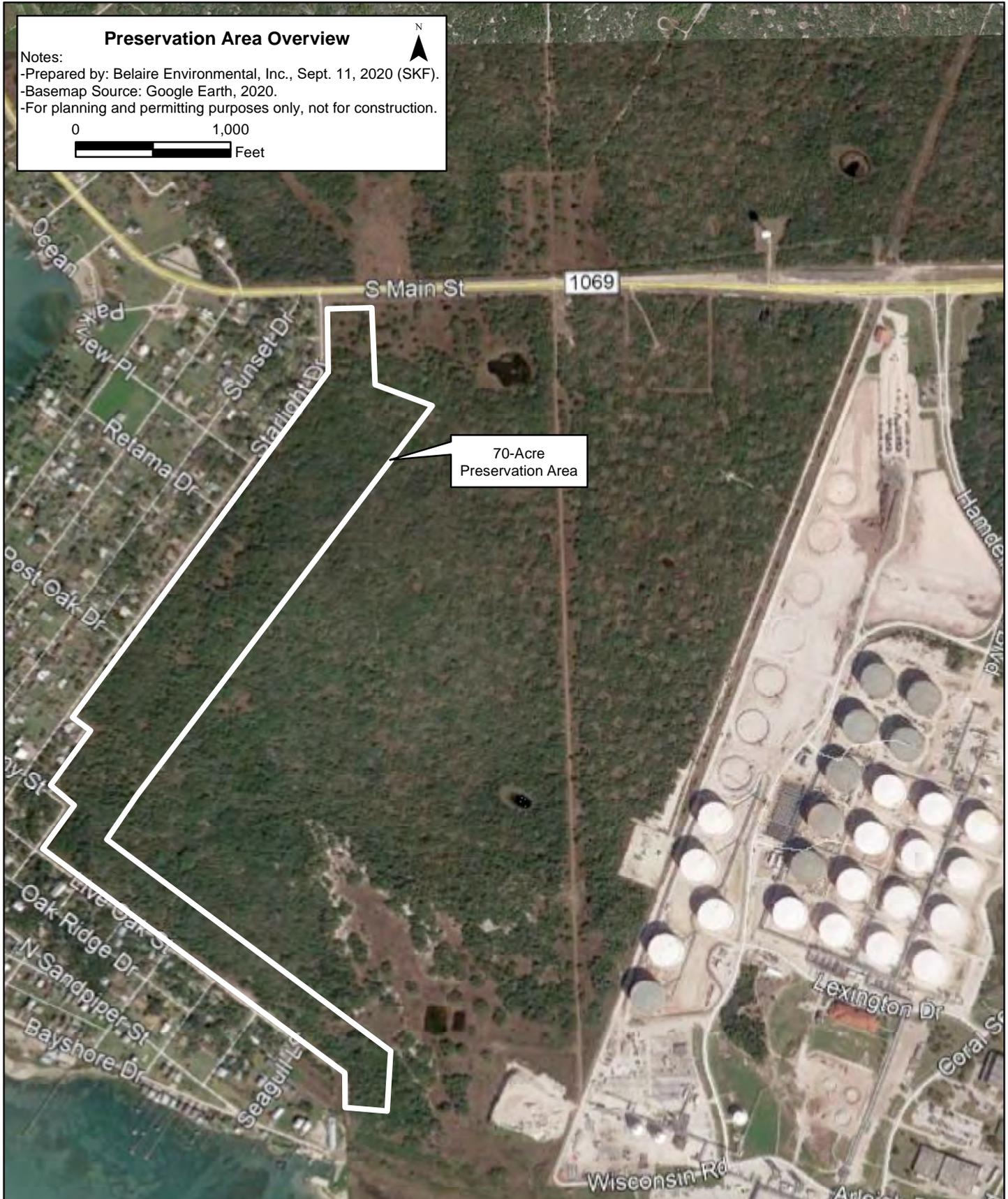
Figure 7.
Preservation Area Overview

Preservation Area Overview



Notes:

- Prepared by: Belaire Environmental, Inc., Sept. 11, 2020 (SKF).
- Basemap Source: Google Earth, 2020.
- For planning and permitting purposes only, not for construction.



70-Acre
Preservation Area

APPLICANT:
MODA INGLESIDE OIL TERMINAL, LLC
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Ingleside, San Patricio County, Texas



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Appendix B.
Example Deed Restriction Document

DRAFT

DEED RESTRICTION

Moda Ingleside Oil Terminal, LLC is the owner of the real property more particularly described and shown in Exhibit "A" (hereinafter the "Property") attached hereto and made a part hereof. The approximately 70-acre Property is also referenced in "The 12-Step Mitigation Plan for Moda Ingleside Oil Terminal, LLC". The Property is subject to the conditions of Department of the Army Section 404/Section 10 Permit Number SWG-1995-02221. One of the conditions of the referenced permit requires restrictions be placed on the deed for the Property for the purpose of providing compensation for adverse impacts to waters of the United States". The intent of this document is to assure that the Property will be retained and maintained forever predominantly in the natural vegetative and hydrologic condition described in success criteria of the "The 12-Step Mitigation Plan." Activities, which may, in the future, be conducted within the Property that will affect the vegetative and or hydrologic conditions outlined in the success criteria of the Mitigation Plan, must be coordinated with and approved by the United States Army Corps of Engineers (USACE), Galveston District, Regulatory Branch, prior to initiation.

The parties to this agreement include the Property owner(s) who by their signature accept the third-party rights of enforcement herein and agree that the deed restrictions will be subject to the following conditions:

1) Property Description

(Applicant) will provide as Attachment A-1:

- a) On-site photographs taken at appropriate locations on the Protected Property including all major natural features; and
- b) A copy of the deed with an accurate legal description or a current survey certified by a Texas Registered Professional Land Surveyor (RPLS) of the Protected Property.

2) Term

These restrictions shall run with the land in perpetuity and be binding on all future owners, heirs, successors, administrators, assigns, lessees, or other occupiers and users. The owner must file this Deed Restriction of record with the County Clerk of San Patricio County, Texas within 10 days of the date this document is signed and provide a copy of the recorded Deed Restriction to the USACE, Galveston District within 30 days of filing.

3) General

Except for such specific activities as authorized pursuant to DA Permit Number SWG-1995-02221, the following activities are prohibited on the Property subject to this Deed Restriction: _____

- (a) There shall be no filling, excavation, mining or alteration of the Property that will affect the success criteria outlined in the Mitigation Plan unless approved in writing in advance by the USACE, Galveston District.

DRAFT

(b) 60-day advance notification will be given to the USACE, Galveston District before any action is taken to void or modify the site protection instrument, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site.

4) Rights of Access and Entry

The USACE shall have the right to enter and go upon the Property for purposes of inspection, and to take actions including but not limited to scientific or educational observations and studies, and collection of samples.

5) Enforcement

In the event of a breach of the restrictions by the Owner, or a third party working with the permission of or under the direction of the Owner, the USACE must be notified immediately. If the USACE becomes aware of a breach of this Agreement, the USACE will notify the Owner of the breach. The Owner shall have thirty (30) days after receipt of such notice to undertake actions that are reasonably calculated to swiftly correct the conditions constituting the breach. If the Owner corrects the conditions constituting the breach in a timely and reasonable manner, no further action is warranted or authorized. If the Owner fails to initiate such corrective action within thirty (30) days or fails to complete the necessary corrective action, the USACE may undertake such actions, including legal proceedings, as are necessary to effect such corrective action. Any forbearance on the part of the USACE to exercise its rights in the event of a breach of the restrictions shall not be deemed or construed to be a waiver of their rights hereunder in the event of any subsequent failure of the Property owner to comply.

Approved by Property Owner

Signature

Date

Printed Name

Title

Approved by Applicant

Signature

Date

Printed Name

Title