

Deepwater Port License Application for the
Texas Gulf Terminals Project

Volume II – Environmental Evaluation (Public)

Section 11:
Coastal Zone Uses, Recreation, and Aesthetics

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ACRONYMS AND ABBREVIATIONS

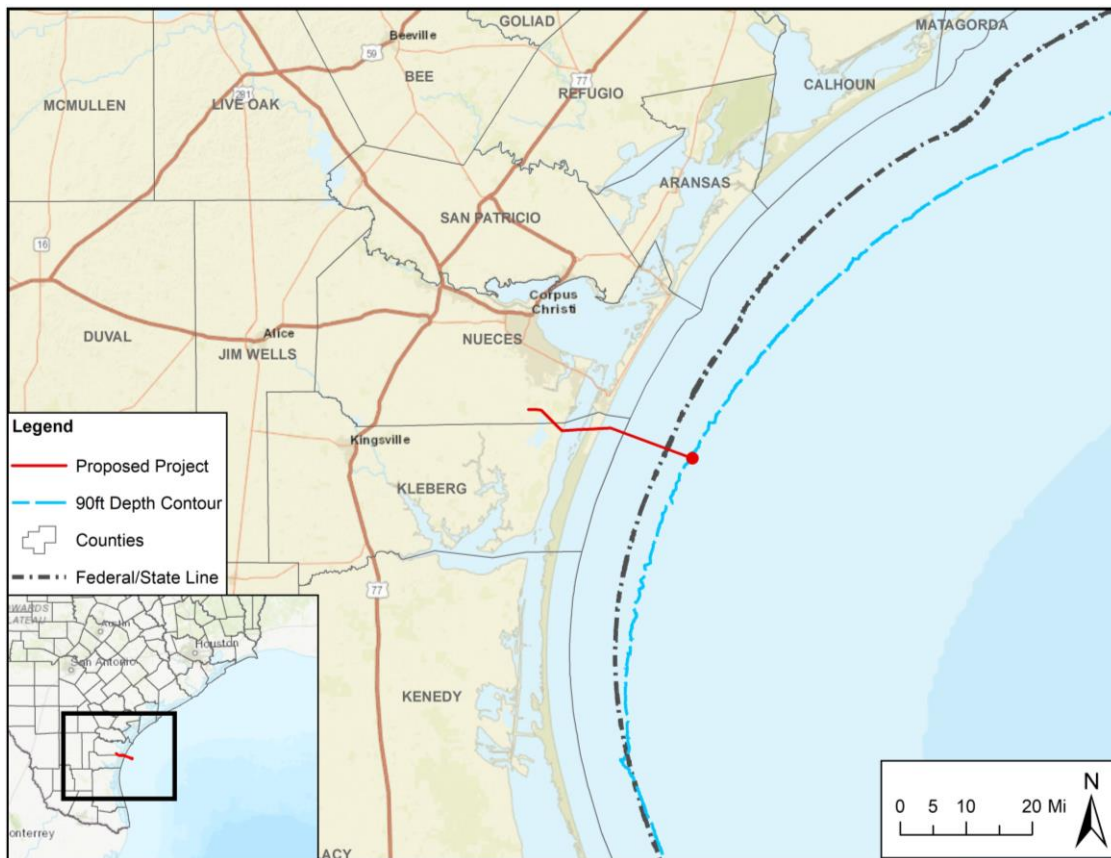
°	degrees
ac	acre
Applicant	Texas Gulf Terminals Inc.
BMP	Best Management Practice
BOEM	Bureau of Ocean Energy Management
bph	barrels per hour
CALM	Catenary Anchor Leg Mooring
CCSC	Corpus Christi Ship Channel
CFR	Code of Federal Regulations
CMP	Coastal Management Program
CNATRA	Chief of Naval Air Training
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DOI	Department of the Interior
DWP	deepwater port
DWPA	Deepwater Port Act of 1974, as amended
DWPL	Deepwater Port License
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
et seq.	et sequentes [Latin for ' <i>and the following</i> ']
ft.	feet
GLO	General Land Office
GOM	Gulf of Mexico
ha	hectare
HAPC	habitat areas of particular concern
HDD	Horizontal Directional Drilling
km	kilometer
LNG	liquefied natural gas
m	meter
MARAD	Maritime Administration
MHT	mean high tide
mi	miles
MMA	Marine Managed Areas
MPRSA	Marine Protection, Research, and Sanctuaries Act
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
nm	nautical miles
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuaries
NOAA	National Oceanic and Atmospheric Administration
NOLF	Naval Outlying Landing Field
NPS	National Park Service

NWR	National Wildlife Refuge
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Land Act
ODMDS	Ocean Dredged Material Disposal Sites
OPAREA	Operating Area
OSTF	onshore storage terminal facility
PLEM	pipeline end manifold
PINS	Padre Island National Seashore
POCC	Port of Corpus Christi
Project	Texas Gulf Terminals Project
ROW	right-of-way
RRC	Railroad Commission
SCUBA	self-contained underwater breathing apparatus
SLA	Submerged Lands Act
SPM	single point mooring
sq.	square
TGTI	Texas Gulf Terminals Inc / Applicant
U.S.	United States [of America]
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCG	United States Coast Guard
VHF	very high frequency
VLCC	very large crude carrier
W-228	Warning Area 228 A

PROJECT OVERVIEW

Texas Gulf Terminals Inc. (TGTI; also referred to as Applicant) is proposing to construct and operate a deepwater port (DWP), associated pipeline infrastructure, booster station, and an onshore storage terminal facility (OSTF), collectively known as the Texas Gulf Terminals Project (Project), for the safe, efficient and cost-effective export of crude oil to support economic growth in the United States of America (U.S.). The Applicant is filing this Deepwater Port License (DWPL) application to obtain a license to construct, own, and operate the Project pursuant to the Deepwater Port Act of 1974, as amended (DWPA), and in accordance with the U.S. Coast Guard (USCG) and the Maritime Administration's (MARAD) implementing regulations.

The Applicant is proposing to construct and operate the Project to allow direct and full loading of very large crude carriers (VLCC) at the DWP, via a single point mooring (SPM) buoy system. The proposed Project consists of the construction of a DWP, onshore and inshore pipeline infrastructure, offshore pipelines, and an OSTF. The proposed DWP would be positioned outside territorial seas of the Outer Continental Shelf (OCS) Mustang Island Area TX3 (Gulf of Mexico [GOM]), within the Bureau of Ocean Energy Management (BOEM) block number 823. The proposed DWP is positioned at Latitude N27° 28' 42.60" and Longitude W97° 00' 48.43", approximately 12.7 nautical miles (nm) (14.62 statute miles [mi]) off the coast of North Padre Island in Kleberg County, Texas. Refer to the Vicinity Map depicting the location of the proposed Project.



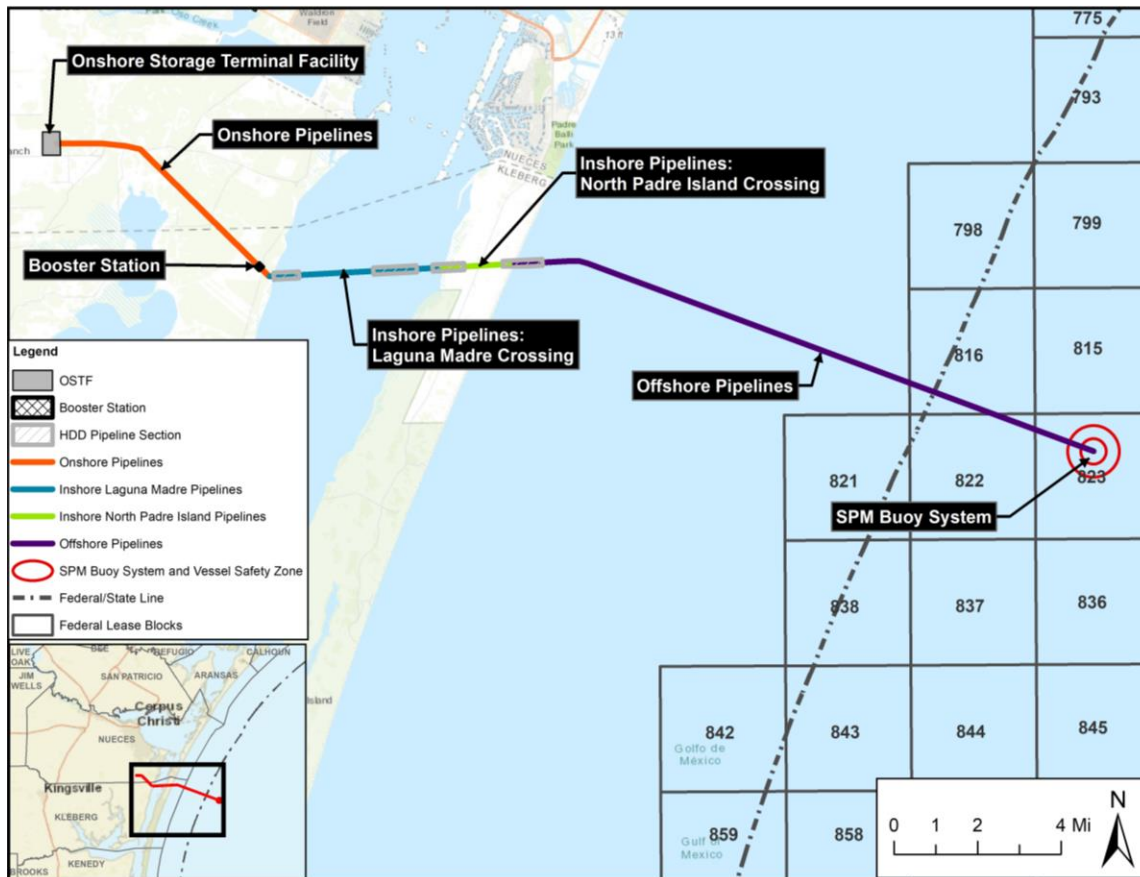
Vicinity Map

The proposed Project involves the design, engineering, and construction of a DWP, 26.81 miles of pipeline infrastructure, booster station, and an OSTF. For the purposes of this DWPL application, the proposed Project is described in three distinguishable segments by locality including “offshore”, “inshore”, and “onshore”.

Onshore Project components includes an approximate 150-acre (ac) (60.7 hectares [ha]) OSTF, an 8.25 ac (3.3 ha) booster station, and approximately 6.36 mi of two (2) new 30-inch-diameter crude oil pipelines extending from the OSTF located in Nueces County, to the booster station located in Kleberg County, and continue to the landward side of the mean high tide (MHT) line of the Laguna Madre. The proposed OSTF will serve as the primary collection and storage terminal of crude oil to be directly pumped through the proposed pipeline infrastructure to the DWP. Outbound flow rates from the OSTF to the DWP are anticipated to be approximately 60,000 barrels per hour (bph).

Inshore components associated with the proposed Project are defined as those components located between the western Laguna Madre MHT line and the MHT line located at the interface of North Padre Island and the GOM; this includes approximately 5.74 mi of two (2) new 30-inch-diameter crude oil pipelines and an onshore block valve station located on North Padre Island. The onshore valve station will serve as the primary conjunction between the proposed onshore and offshore pipeline infrastructure.

Offshore components associated with the proposed Project include the DWP and offshore pipelines. Principle structures associated with the proposed DWP includes one SPM buoy system consisting of the SPM buoy, pipeline end manifold (PLEM), sub-marine hoses, mooring hawsers, and floating hoses to allow for the loading of crude oil to vessels moored at the proposed DWP. The proposed SPM buoy system will be of the Catenary Anchor Leg Mooring (CALM) type permanently moored with a symmetrically arranged six-leg anchor chain system extending to pile anchors fixed on the seafloor. Offshore pipeline infrastructure associated with the proposed Project consist of approximately 14.71 mi of two (2) new 30-inch-diameter pipelines extending from MHT line on North Padre Island to the SPM buoy system located at the proposed DWP. Refer to the Project Components Map below for a depiction of the location of the Project components discussed above.



Project Component Map

11 COASTAL ZONE USES, RECREATION, AND AESTHETICS

This section describes the commercial and recreational activities that typically occur in the Coastal Bend region of Texas, as well as the current aesthetic conditions within proximity of the proposed Project. The “Texas Coastal Bend”, whereas not a designated political or biological region, is generally considered to be the region within the notable curve along the Gulf coast from Kennedy County northward to Aransas County, and includes the Laguna Madre and Padre Island. The Project lies entirely within the Texas Coastal Bend, with various Project components, located onshore, inshore and offshore.

Onshore refers to areas located landward from the western shore of the Laguna Madre. Inshore habitat refers to areas located landward from the mean high tide (MHT) line of North Padre Island. Offshore habitat refers to areas located seaward into the Gulf of Mexico (GOM) from the MHT line of North Padre Island. This section describes the various potential Project impacts on these resources. The framework for the evaluation of environmental consequences and cumulative impacts in the Introduction of Volume II of the Deepwater Port License (DWPL) application.

Section 11.0 Coastal Zone Uses, Recreation, and Aesthetics is structured as follows:

- Section 11.1 Applicable Laws and Regulations: Background on relevant regulatory laws for consideration;
- Section 11.2 Existing Conditions: Information on the existing inshore and offshore aquatic environment in the Project vicinity;
- Section 11.3 Environmental Consequences: An analysis of environmental consequences;
- Section 11.4 Cumulative Impacts: An analysis of cumulative impacts;
- Section 11.5 Mitigation Measures: Proposed mitigation measures;
- Section 11.6 Summary of Potential Impacts: A summary of potential impacts; and
- Section 11.7 References.

11.1 Applicable Laws and Regulations

11.1.1 Federal

There are numerous federal, state, and local statutes in place governing use of and providing protective authorities over the natural resources of the nation’s coastal zone and aesthetics. For this application, the Federal policies that were consulted are: Coastal Zone Management Act of 1972 administered by the National Oceanic and Atmospheric Administration (NOAA), Deepwater Port Act administered by the Maritime Administration (MARAD), Submerged Lands Act administered by NOAA, Outer Continental Shelf Lands Act administered by the BOEM, and Section 10 of the Rivers and Harbors Appropriation Act of 1899 administered by the U.S. Army Corps of Engineers (USACE), and National Environmental Policy Act of 1969 (NEPA), Pub. L. 91–190, 42 U.S.C. 4321, *et. seq.* A summary of each is found herein.

11.1.1.1 Coastal Zone Management Act of 1972

As set forth in the Coastal Zone Management Act of 1972 (CZMA) (16 United States Code [U.S.C.] 1451 *et seq.*), there is a national interest in the effective management, beneficial use, protection, and development of the coastal zone, and to that end, the CZMA has established the Coastal Zone Management Program to foster a cooperative Federal-State relationship for the purpose of protecting, restoring, and responsibly developing United States (U.S.) coastal resources and communities. It confers authority to the states to review and evaluate whether private or federal activities are in compliance with the states’ coastal management program. As mandated by the Deepwater Port Act (DWPA), Deepwater Port (DWP) proposals must be reviewed for consistency with coastal management plans of each adjacent coastal state, as defined under the DWPA (33 U.S.C. 1502). Such consistency determinations are required for activities that require Federal funding, permitting, or licensing. Texas is the only adjacent state to this

Project. Accordingly, the proposed DWP Application must demonstrate consistency with the Texas Coastal Management Plan (see Section 11.1.2).

11.1.1.2 Deepwater Port Act of 1974

§ 148.730 of the DWPA requires that the DWP proposal and reasonable alternatives be evaluated on the basis of how well they accord with existing and planned land use, including management of the coastal region as discussed under Section 11.1.1.1 above.

11.1.1.3 Submerged Lands Act

The Submerged Lands Act (SLA) of 1953 identifies the jurisdictional boundary between state and federal lands submerged beneath the GOM. The SLA promulgates policy that designates ownership of navigable waters and submerged lands and granting rights and title to the natural resources of submerged lands to the Gulf Coast states, extending 3 nm from the coastline into the GOM (or to three marine leagues (9 nm) offshore of Texas and the Gulf Coast of Florida) (43 U.S.C. §1301-1315). The SLA defines natural resources to include: oil, gas, all other minerals, fish, shrimp, oysters, clams, crabs, lobsters, sponges, kelp, and other marine animal and plant life. The SLA also preserves federal claim to the Outer Continental Shelf (OCS), which consists of submerged lands seaward of states' jurisdiction out to the limit of the Exclusive Economic Zone (EEZ). The EEZ consists of those areas adjoining the territorial sea of the U.S. and extends up to 200 nm from the coastline depending on the proximity of neighboring coastal nations. Texas General Land Office (GLO) Coastal Management Program (CMP) has review authority for projects and activities that occur within the Texas Coastal Zone. Activities that would occur in state waters over state submerged lands will be permitted under the CZM CMP with the Texas GLO.

11.1.1.4 Outer Continental Shelf Lands Act

The Outer Continental Shelf Lands Act of 1953 (OCSLA) defines the OCS as all submerged lands lying seaward of state submerged lands and waters (as defined in the SLA) which are under U.S. jurisdiction. Under the OCSLA, the Secretary of the Interior is responsible for the administration of mineral exploration and the development of the OCS, and has authority to grant leases to the highest qualified responsible bidder. The Act, as amended, provides guidelines for implementing an OCS oil and gas exploration and development program. In 1982 after Congress passed the Federal Oil & Gas Royalty Management Act, the Secretary delegated this leasing function to BOEM. Pursuant to section 4(e) of the OCSLA, permits issued by the USACE are required for construction of any artificial islands, installations, and other devices permanently or temporarily attached to the seabed located on the OCS. Section 4(f) of the OCSLA extends the authority of the USACE under Section 10 to regulate installations on the seabed to the seaward limit of the OCS.

11.1.1.5 Clean Water Act - Section 10 of the Rivers and Harbors Appropriation Act of 1899

The Rivers and Harbors Act of 1899 requires a permit for any obstruction or alteration occurring in navigable waters of the U.S. Section 4(f) of the OCSLA extends the authority of the USACE under Section 10 to regulate installations on the seabed to the seaward limit of the OCS. Activities associated with the proposed Project that would occur in navigable waters, over the OCS, and on the sea floor will be permitted under the CZM Joint Permit Application coordinated between the USACE and the Texas GLO. The USACE 10/404 permit application has been submitted and is included in Volume I.

11.1.1.6 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires all federal agencies to consider the potential environmental consequences of their proposals, document the environmental analysis, and make this information available to the public for comment prior to making a permit decision on any major federal action. Issuing permits for construction of the Project would qualify as a major federal action and trigger the requirement for NEPA analysis. Under the DWPA, the USCG would initiate the NEPA process and have federal jurisdiction over the entire Project under NEPA. The USCG and Maritime Administration

(MARAD) have determined that an environmental impact statement (EIS) will be prepared to support the NEPA process.

11.1.2 State

11.1.2.1 Coastal Management Program Consistency (CMP)

In 1991 the Texas Legislature passed the Coastal Coordination Act in response to concerns from the coastal communities. It was determined that there needed to be a unified and comprehensive approach to addressing a multitude of coastal issues and the management of Texas' natural resources. The Texas Land Commissioner from the Texas GLO is authorized to make consistency determinations as required by Federal law.

The Texas CMP was finalized in 1997 and accepted by NOAA. The CMP links federal, state, and local, entities and their regulations and programs that manage Texas coastal resources. The mission is to "...ensure the long-term ecological and economic productivity of the Texas coast." The Texas GLO CMP has review authority for projects and activities that occur within the Texas Coastal Zone. A copy of this application will be submitted to the Texas GLO for certification that the Project is in compliance with the Texas CMP. Once the Texas GLO has reviewed the proposed activities for federal consistency certification and the necessary data and information pursuant to 15 Code of Federal Regulations (CFR) 930.58, they have up to 180 days to concur with or object to the consistency certification. The Consistency Statement certification has been submitted and is included in Volume I of the DWPL application.

11.1.3 Local

Both Kleberg and Nueces counties were consulted as well as the Coastal Bend Council of Governments for any coastal planning and/or preservation plans or regulations, and none were found. However, the City of Corpus Christi approved its *Mustang/Padre Area Island Development Plan* on January 31, 2017.

11.1.3.1 City of Corpus Christi Mustang / Padre Area Development Plan

This Plan is an amendment to the City's Comprehensive Plan in order to place additional economic development and environmental stewardship emphases for this coastal amenity. However, it was prepared in cooperation with USACE, Nueces County, and the State of Texas. Some of the recommendations are being implemented by other governmental agencies, i.e. USACE, Nueces County, State of Texas, etc. The Plan recommendations are intended to assure City support and are not intended to substitute or establish an overlap or duplication of authority."

11.2 Existing Environment

The proposed Project would be within the Texas Coastal Zone, Texas State Gulf Coastal waters, and U.S. territorial seas. Onshore storage facilities would be located in a rural agricultural area. The nearest developed (residential) area to the storage facility is approximately 3.3 mi to the north. Inshore pipelines would cross the shallow Laguna Madre bay and undeveloped coastal marshes and dunes of Padre Island. Inshore areas immediately surrounding the pipeline right-of-way (ROW) include shallow waters of the Laguna Madre, and undeveloped state and federal lands on Padre Island. One rural (National Park Service) road transects the pipeline ROW; the nearest developed lands (residential, suburban) are approximately 2.8 mi north of the proposed pipeline corridor on Padre Island.

Offshore submerged pipelines would extend from Texas state waters off of Padre Island into U.S. territorial seas to depths of approximately 93 feet (ft.). The proposed SPM buoy system would be installed offshore within the GOM within BOEM block number 823 at Latitude N27° 28' 42.60" and Longitude W97° 00' 48.43", approximately 12.7 nautical miles (14.62 statute miles) off the coast of North Padre Island in Kleberg County, Texas. The SPM buoy system would be positioned in water depths of approximately 93 ft. The lease blocks intersected by the proposed Project are shown in Figure 11-1. Lease blocks of which any portion of the proposed Project is located within are listed in Table 11-1.

11.2.1 Land Use

11.2.1.1 Onshore Land Use

The land use in the region of the onshore storage terminal facility is generally agriculture and does not currently have any farming activity (Figure 11-1). The land use in the region of the inshore pipeline crossing at Padre Island is vacant land located just north of the protected Padre Island National Seashore (PINS). Although land use data obtained from the City of Corpus Christi (Figure 11-1) identify the area crossed by the inshore pipeline crossing at Padre Island as "Park", it is not designated by any entity as a named park. Local beaches are discussed below within Section 11.2.3 Recreation.

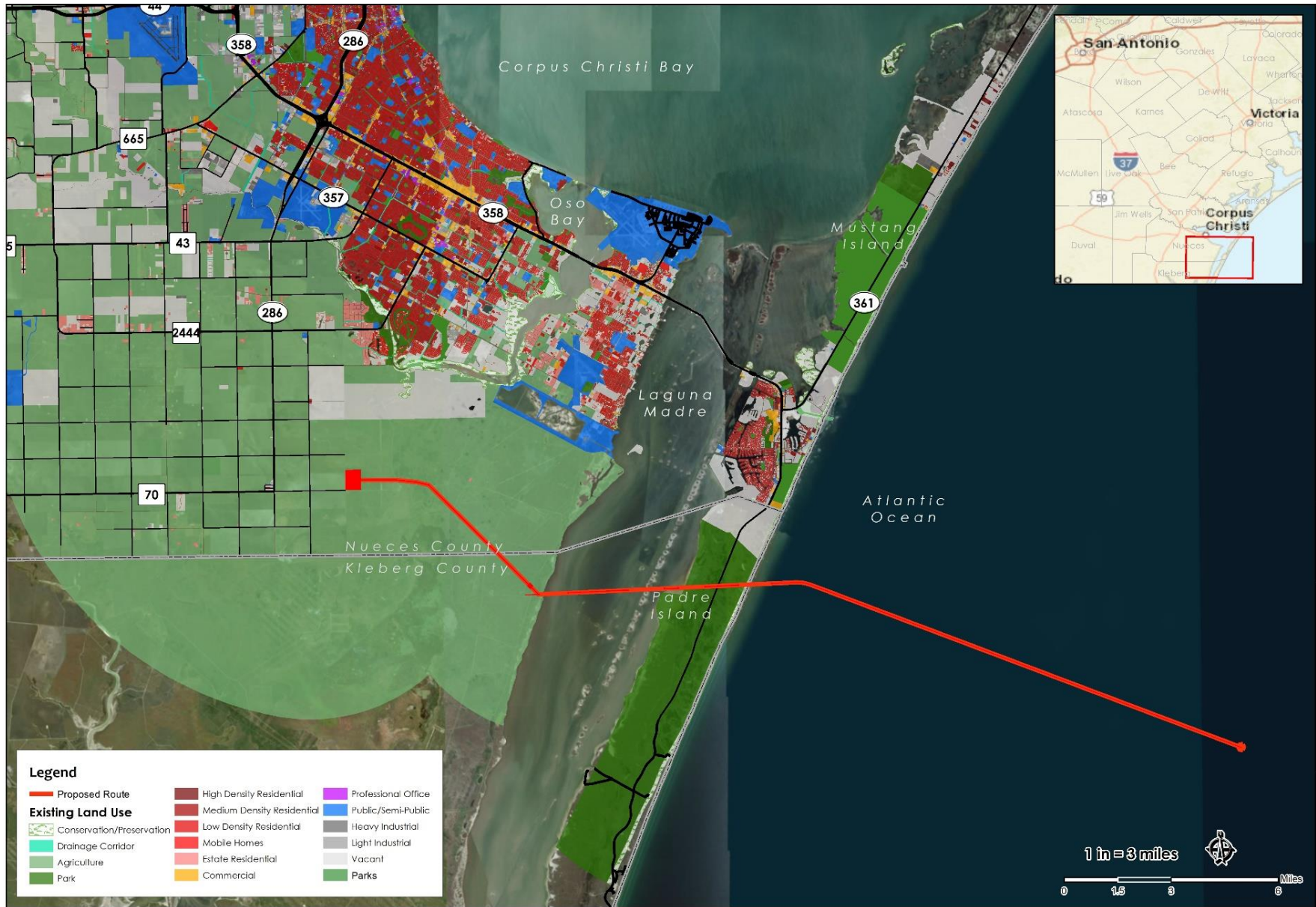


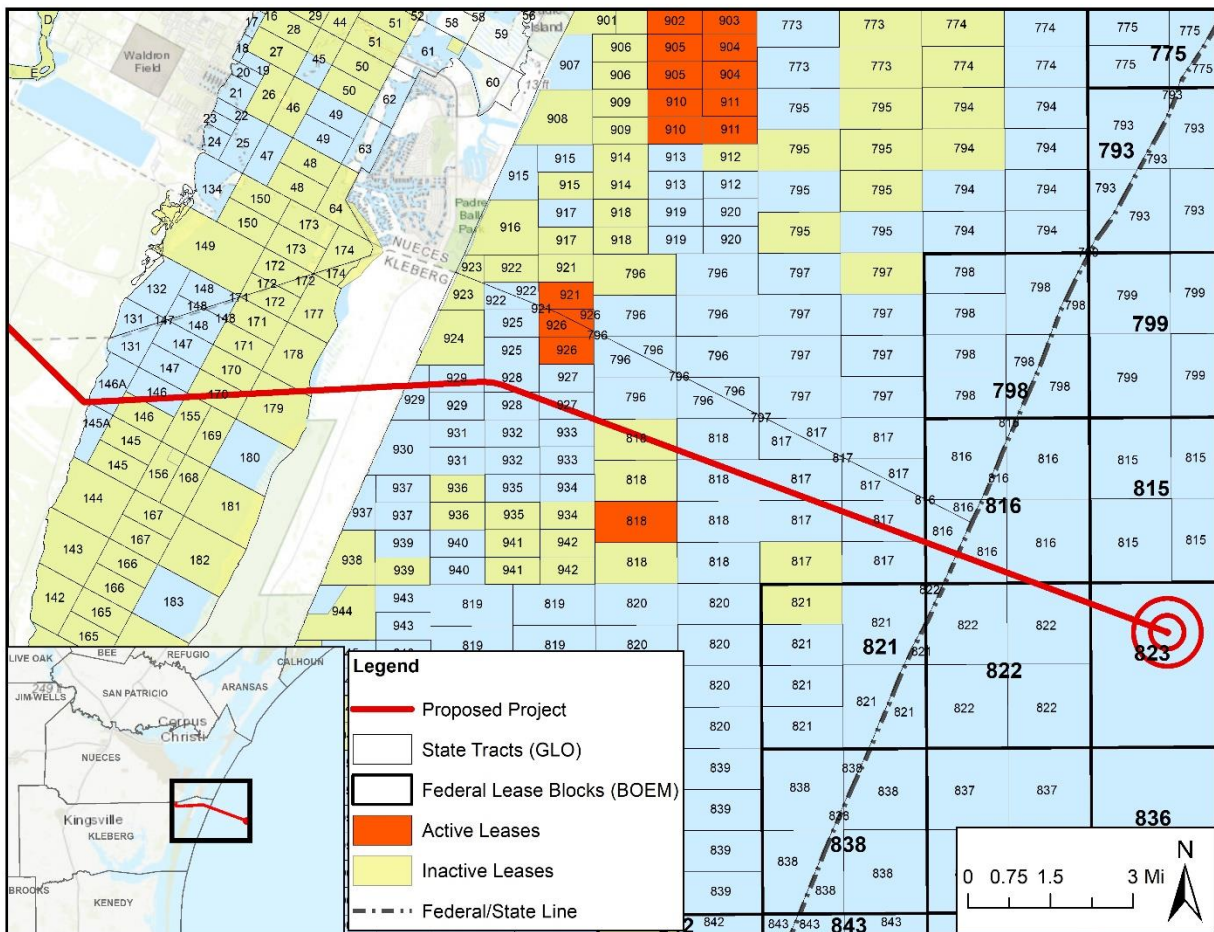
Figure 11-1: Existing Land Use

11.2.1.2 Offshore Oil and Gas Activity

BOEM manages oil and gas leases in the GOM OCS, which encompasses the Western and Central Planning Areas, and portions of the Eastern Planning Area. Currently there are 1,031 platforms and 6,554 mi of pipeline in the Western Planning Area (BOEM 2018). Additionally, there are 82 platforms in the state waters of Texas. Several planned offshore liquefied natural gas (LNG) terminals have been approved but subsequently cancelled; in two instances, the Applicant withdrew the Project application prior to authorization, and one LNG terminal was decommissioned in 2012 (A Barrel Full 2018).

There are no offshore terminals in BOEM’s Western Planning Area. Currently the only offshore terminal in operation within the GOM is the Louisiana Offshore Oil Port, which is located in BOEM’s Central Planning Area (BOEM 2017). Since this port is outside the geographic range of the proposed Project, it is excluded from further discussion. An initial assessment indicates that there are no federal lease blocks with active leases traversed by the proposed Project. This assessment included the statuses of state and federal lease blocks for both the proposed DWP location and those blocks traversed by the proposed pipeline infrastructure extending from the onshore storage terminal facility. One active lease was identified within the protraction area, i.e., Mustang Island Area, Block 726, located approximately 28 mi away from the nearest Project component (Figure 11-2). Based on the BOEM 2017–2022 Five-Year Leasing Program, there has been no interest in the OCS lease blocks traversed by or immediately adjacent to the proposed offshore facilities (BOEM 2017).

Figure 11-2: Lease Blocks Intersected By the Proposed Project



One active lease was identified within the Project’s protraction area (Mustang Island Area Block 726), however is not intersected by the proposed Project. To the Applicant’s knowledge, there are no active leases or other currently planned uses in the areas affecting the blocks identified in Table 11-1.

Table 11-1: Lease Block Information

Project Component	Lease Block ID	Project Quadrant Location	Federal / State	Lease Status	Location
Inshore Pipelines	146	NE/2	TX	None	Laguna Madre
Inshore Pipelines	146	SW/2	TX	Inactive	Laguna Madre
Inshore Pipelines	146A	ALL	TX	None	Laguna Madre
Inshore Pipelines	155	ALL	TX	Inactive	Laguna Madre
Inshore Pipelines	170	NE/2	TX	Inactive	Laguna Madre
Inshore Pipelines	170	SW/2	TX	Inactive	Laguna Madre
Inshore Pipelines	178	ALL	TX	Inactive	Laguna Madre
Inshore Pipelines	179	ALL	TX	Inactive	Laguna Madre
Offshore Pipelines	817	S/2	TX	None	GOM
Offshore Pipelines	817	N/2	TX	None	GOM
Offshore Pipelines	817	N/2	TX	None	GOM
Offshore Pipelines	817	S/2	TX	None	GOM
Offshore Pipelines	818	N/2	TX	Inactive	GOM
Offshore Pipelines	818	N/2	TX	None	GOM
Offshore Pipelines	818	S/2	TX	None	GOM
Offshore Pipelines	927	S/2	TX	None	GOM
Offshore Pipelines	928	N/2	TX	None	GOM
Offshore Pipelines	928	S/2	TX	None	GOM
Offshore Pipelines	929	N/2 OF E/640	TX	None	GOM
Offshore Pipelines	929	W/310	TX	None	GOM
Offshore Pipelines	933	N/2	TX	None	GOM
Offshore Pipelines	816	SW/SE	FED	None	GOM
Offshore Pipelines	822	NE	FED	None	GOM
Offshore Pipelines and single point mooring (SPM) Facility	823	NW/NE	FED	None	GOM

11.2.1.3 Offshore Pipelines or Other Submerged Infrastructure

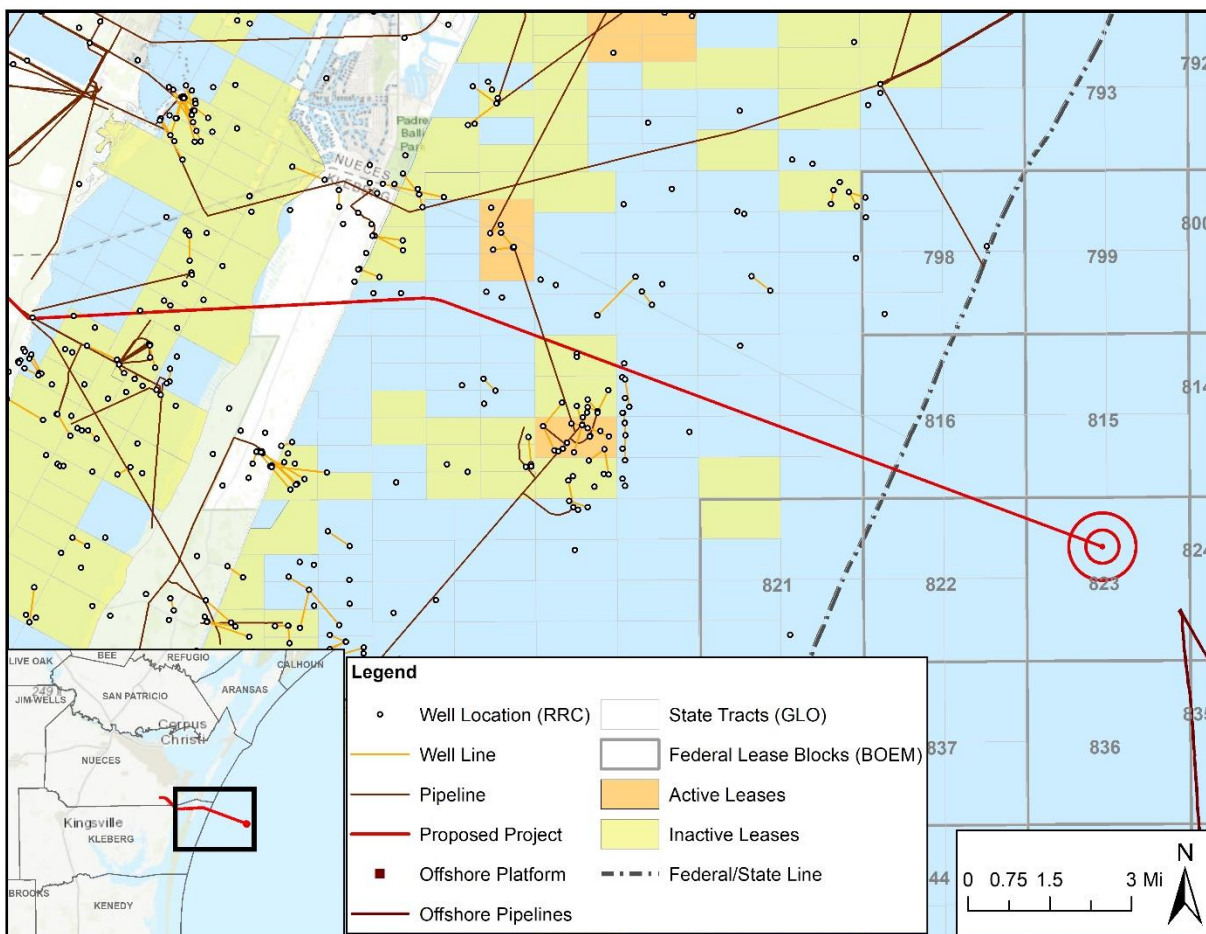
Based on publicly available information managed by the BOEM, there are two abandoned pipelines that exist in the southeastern quadrant of Block 823, approximately 1.5 nm to the southwest of the nearest proposed Project component. The Texas Railroad Commission (RRC) database indicates that the pipelines are the Williams Gulf Coast Gathering Co., LLC gas gathering line that passes approximately 0.69 nm northeast of the proposed DWP terminal and that ties into another Williams Gulf Coast Gathering Co., LLC gas pipeline approximately 1.5 nm to the southeast of the DWP terminal in block 823.

The Texas RRC database indicates that there is one gas transmission pipeline (owned by Mustang Island Gathering, LLC) that transects the proposed offshore pipeline corridor at the northwest/2 of Mustang Island Large Block 818. Numerous plugged and abandoned wells are within Block 818 south of the proposed offshore pipeline. Nine gas wells are indicated to occur in S/2 of 818; those are from two separate

directional well locations, both more than 0.86 nm southwest from the proposed offshore pipeline corridor (Texas RRC 2018).

The NOAA Marine Cadastre database indicates that there is a submerged wreck/obstruction at Latitude 27.516983 N, -97.183597 W, in block 934, approximately 1 nm south of the proposed offshore pipeline corridor (NOAA 2018).

Figure 11-3: Offshore Pipelines or Other Submerged Infrastructure



11.2.1.4 Other OCS Non-energy Mineral Resources

Non-energy minerals generally refers to any resource extracted from a geologic substrate that does not directly contribute to national energy commodities. Non-energy mineral resources of the OCS include sand, gravel, and shell deposits. Section 8 (k) of the OCSLA provides BOEM authority to identify OCS sand and gravel borrow areas and to negotiate an agreement for the use of OCS sand, gravel, and shell resources for use in: (1) a project for shore protection, beach restoration, or coastal restoration undertaken by a Federal, State, or local government agency; or (2) for use in a construction project funded in whole or in part by, or authorized by, the Federal government. BOEM and the agency/entity enter into a Negotiated Non-Competitive Lease or Memorandum of Agreement so that entity can dredge sand, gravel, or shell resources from the OCS. According to the NOAA Marine Cadastre, no federal OCS sand and gravel borrow areas under BOEM's purview occur within the vicinity of the Project, with the nearest federal OCS sand and gravel borrow located past Houston, over 260 mi northeast of the Project. Sand leases and resources within State waters are not available through this data layer.

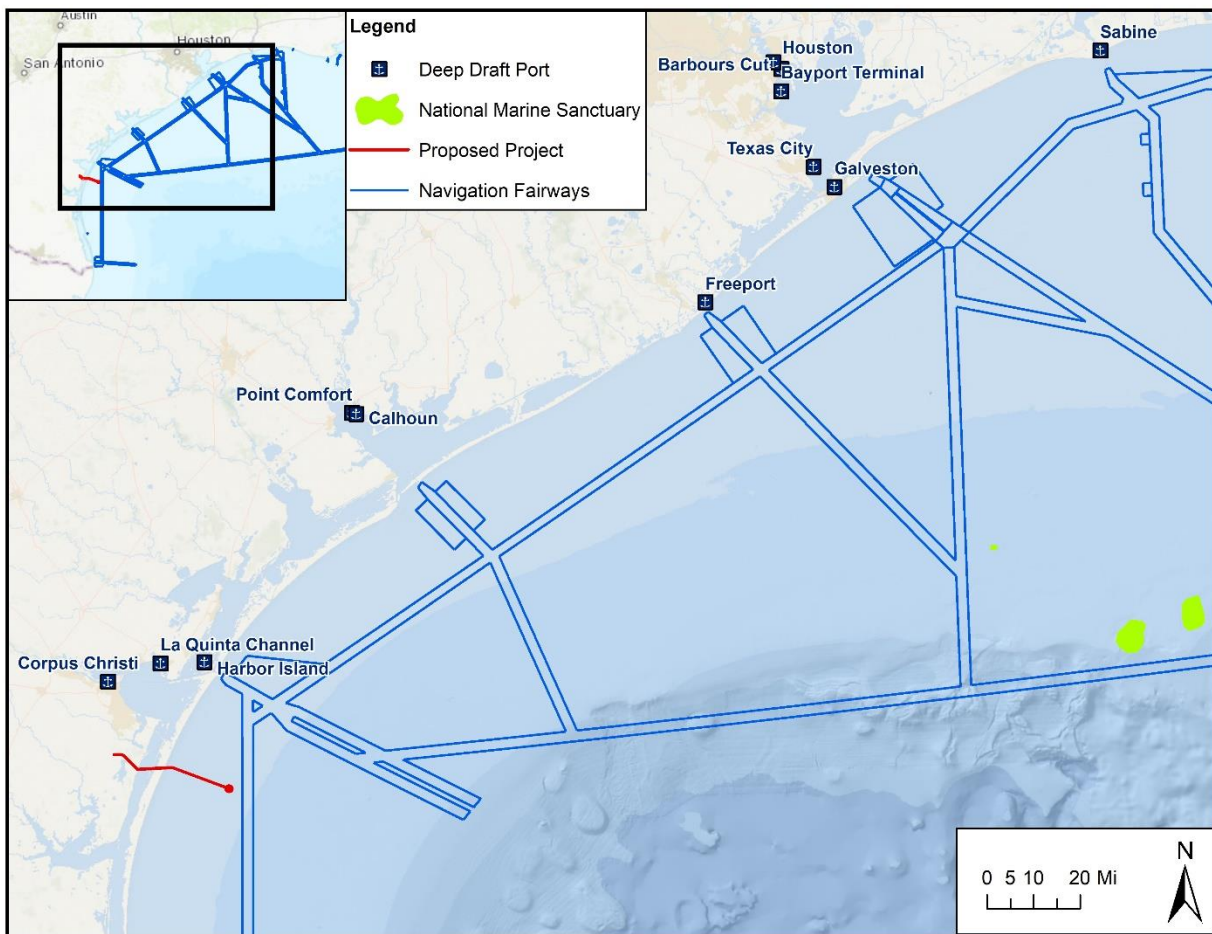
11.2.1.5 Marine Shipping and Commercial Ports

Marine traffic in the western planning area and state waters of Texas occurs within areas of "federally designated shipping safety fairways and anchorage areas" (33 CFR 166) as depicted in Figure 11-4. In 2015, over 12,500 vessel calls were made to ports in Texas via these fairways (MARAD 2018). Tankers were the predominate vessel type (57 percent) utilizing the fairways; other vessels included dry bulk (13 percent), cargo (11 percent), container and gas (8 percent each), and Roll on – Roll off cargo ships (3 percent) (BOEM 2017). The Port of Corpus Christi (POCC) is the closest port to the proposed Project and is the fifth largest port in the U.S., providing access to the GOM, inland waterways, and offering connections to three railroad systems (POCC 2018b). About 14 percent of the vessel calls to Texas ports in 2015 were to the POCC. Vessel calls to this port were also comprised mostly of tankers (67 percent) and included dry bulk (16 percent), gas (9 percent), and cargo (8 percent). Aransas Pass Safety Fairway provides access to the POCC. Vessels approaching the port from the north would do so via the Aransas Pass to Calcasieu Pass fairway, while the Brazos Santiago Pass to Aransas Pass fairway provides access from the south and is the closest shipping lane to the proposed Project (about 2.9 mi east of the proposed single point mooring (SPM) System location).

In addition to associations with oil and gas activity in the Western Planning Area, state waters of Texas, and onshore terminals and ports, marine vessel traffic may also be associated with mineral exploration, recreation (cruises, diving, and fishing), and military training. Recreational activities such as fishing, boating, and diving in the vicinity of the Project occur in Aransas Bay, Corpus Christi Bay, Laguna Madre, as well as in near shore and offshore locations. The marine sanctuaries depicted in Figure 11-4, are also well-known destinations for recreational fishing and diving and can be assessed by private boat or charter (NOAA 2017).

Between 2004 and 2007, about 1,050 cruise ships departed from the Ports of Galveston and Houston (Maritime Administration 2018). However, in subsequent years (2008 through 2012), departures in Texas have occurred exclusively from the Port of Galveston and during this time the number of departures has continued to decline. These ports are located over 180 mi (290 kilometers [km]) north of the proposed Project, see Figure 11-4. (BOEM 2018b, 2018c; A Barrel Full 2018; Maritime Administration 2018)

Figure 11-4: Marine Shipping and Commercial Ports



11.2.1.6 Military Use

Several military installations and operations zones occur within the vicinity of the Project. One military Operating Area (OPAREA) boundary would be transected by the proposed offshore pipeline corridor. No other military bases or specialized military zones would directly transect the area to be utilized by (any component of) the proposed DWP Project.

Naval Air Station (NAS) Corpus Christi is in the town of Corpus Christi strategically located on the Encinal Peninsula surrounded by Corpus Christi Bay, Oso Bay, and the Laguna Madre. The overall command assignment of NAS Corpus Christi is pilot training. The Chief of Naval Air Training (CNATRA), headquartered here, oversees the training operation throughout the Southeast Region, from Texas to Florida. The DWP terminal would be approximately 22 mi from NAS Corpus Christi. The NAS Corpus Christi is approximately 9 mi northward from the proposed onshore storage facility. The Waldron Field Naval Outlying Landing Field (NOLF) is located approximately 6 mi north from the proposed onshore storage facility and appears to be a small subunit of naval operations in the Corpus Christi area. The Waldron Field NOLF has two landing strips, and may or may not be utilized for training purposes. No information was found regarding this air field.

Warning Area 228 A (W-228) is a 12,574 square (sq.) mi. airspace designated offshore of NAS Corpus Christi to support the training mission. W-228 supports the CNATRA as well as other users, including the Texas Air National Guard and National Aeronautics and Space Administration (NASA) aircraft from the

Johnson Space Center south of Houston. At its closest, W-228 is 7.47 nm from the DWP terminal. (Global Security 2018; BOEM 2014)

Five military OPAREA boundaries, C1, C2, E1, E2, and E3, occur in the vicinity of the proposed DWP Project, as identified on the Marine Cadastre database. An OPAREA is the bounded area in which national defense training exercises and system qualification tests are routinely conducted. OPAREA boundaries are formally established for training purposes and allow for specific exercises and events to be coordinated with other federal, state, and local agencies, and also the general public, as in Notices to Mariners. The MarineCadastre.gov team worked with the Navy to provide this data, which is a subset of the Navy's Common Operating Picture, for ocean planning purposes. The offshore pipelines would transect the area within OPAREA-C2, which encompasses lease block 816, approximately 1.48 nm west of the DWP terminal location. OPAREA-C1 is approximately 3.4 nm to the north of the DWP terminal, and encompasses lease blocks 793 and 799. OPAREA-E3 is approximately 3.11 nm to the west. OPAREA-E2 is contiguous with OPAREA-E3 and is approximately 6.26 nm west of the DWP terminal. OPAREA-E1 is immediately adjacent to OPAREA-E2, and is approximately 11.40 nm west of the proposed DWP terminal.

11.2.1.7 Lightering Zones

According to the U.S. Coast Guard (USCG), lightering is "...the transfer of a cargo of oil or a hazardous material in bulk from one vessel to another, including all phases of the operation from the beginning of the mooring operation to the departure of the service vessel from the vessel to be lightered, except when that cargo is intended only for use as fuel or lubricant aboard the receiving vessel." [*Coast Guard, DHS, Part 156-Oil and Hazardous Material Transfer Operations, § 156.205 Definitions (b)*]

In the GOM, there are several lightering zones, some are regulated by the USCG and some are regulated by the states. The closest USCG lightering zone, the Southtex-lightering Zone, is centered about 150 mi, 105° from Aransas Pass, approximately 60 mi east from the proposed SPM location. The localized lightering rendezvous location closest to the proposed Project is the Offshore Corpus Christi No.1, located at 27.28 N, 96.49 W, approximately 30 nm, 112.8° from the DWP terminal. Lightering zones are further discussed in Section 13, Navigation and Navigation Safety, of this Volume II.

11.2.1.8 Coastal Zones

The entirety of the proposed Project is within the Texas Coastal Management Zone. The Texas Coastal Management Zone stretches the entire length of the Texas coast, from Orange and Jefferson Counties bordering Louisiana to the east, to Cameron country at the Mexico border to the south.

The Federal Coastal Zone Management Act of 1972 requires coastal states develop resource-management programs to regulate coastal resources. The Texas CMP, funded by NOAA, focuses on the state's coastal natural resource areas and is managed by the Texas Land Commissioner. CMP helps ensure the long-term environmental and economic health of the Texas coast.

11.2.2 Protected Offshore Habitats

Marine Managed Areas

Marine Managed Areas (MMAs) are places in the ocean, coastal, and estuarine ecosystems where vital natural and cultural resources are given greater protection than in surrounding water (MPA 2006). These sensitive marine habitats are managed by federal, state, or local agencies. There are more than 1,500 MMAs in the U.S., 321 of which are in the GOM (MPA 2006). The GOM MMAs NMSs, Federal Fishery Management Zones, National Wildlife Refuges (NWRs), National Estuarine Research Reserves, and Artificial Reefs. These habitats are offered varying degrees of protection from applicable regulatory agencies such as NOAA Ocean Services, NOAA Fisheries, U.S. Fish and Wildlife Service (FWS), the National Park Service (NPS), and the USCG, as well as state agencies. The proposed Project does not cross any MMAs.

Essential Fish Habitat

As noted in Section 6.0, an Essential Fish Habitat (EFH) is a protected offshore habitat. Habitat areas of particular concern (HAPC) are localized areas of EFH that are ecologically important, sensitive, stressed, and/or rare areas. Although designated HAPCs have no regulatory protections above all other EFH, Projects impacting HAPCs may be more scrutinized, and may be subject to additional conservation measures (NOAA 2015). The closest HAPC (Stetson Bank) is about 174 mi east of the proposed location for the Project’s SPM buoy. Additional discussion of EFH and assessments of biology and productivity of fish stocks is provided in Section 6, “Commercial and Recreational Fishing” and Section 7, “Wildlife and Protected Species”.

Coral Reefs

Section 5.0 provides a detailed analysis concerning coral reefs in the region. Generally, the northern GOM is not considered suitable for the development of reef-building communities due to physical and geochemical factors including temperature, sedimentation, and water clarity. However, certain areas within the northwestern gulf are an exception to this as they are higher relief areas located away from the Mississippi River, where waters are clearer and warmer (USGS 2004a). However, no hard bottom habitat is present within 30 mi of the Project (see Section 10).

11.2.2.1 Dredged Material Discharge Zones

In 1972, Congress enacted the Marine Protection, Research, and Sanctuaries Act (MPRSA) to prohibit the dumping of material into the ocean that would unreasonably degrade or endanger human health or the marine environment. The MPRSA was amended in 1988 to ban ocean dumping of industrial waste and sewage sludge. Virtually all ocean dumping occurring today is dredged material removed from the bottom of waterbodies in order to maintain navigation channels and berthing areas. Unless a permit is issued under the MPRSA, ocean dumping cannot occur. The USACE issues permits for ocean disposal of dredged material using the Environmental Protection Agency’s (EPA’s) environmental criteria and is subject to EPA’s concurrence. Ocean Dredged Material Disposal Sites (ODMDS) have been designated in specific locations within the GOM.

The closest ODMDS to the Project are located to the northeast of Corpus Christi Bay, approximately 20 mi northeast of the proposed pipeline (Table 11-2).

Table 11-2: The Proximity of Project to Dredged Material Disposal Sites

ODMDS Name	EPA Region	Average depth (ft.)	Area (sq. nautical mi.)	Date Designated	Designated Use	Proximity to Project
Corpus Christi New Work ODMDS (formerly Homeport Project ODMDS)	6	50	1.40	September 30, 1998	Dredge material placement	20 mi Northeast
Corpus Christi Ship Channel (CCSC), TX	6	43	0.63	August 10, 1989	Dredge material placement	20 mi Northeast

Source: US EPA 2018

11.2.2.2 Commercial Fishing

This section discusses commercial fishing as an important marine use offshore of Texas, and more specifically, the offshore waters in the vicinity of the Texas Gulf Terminal Project. EFH and assessments of biology and productivity of fish stocks are discussed in Section 6, “Commercial and Recreational Fishing” and Section 7, “Wildlife and Protected Species”. Finally, the economic contribution of commercial fishing in the region is discussed in Section 9, “Socioeconomics.”

Data on commercial fisheries was obtained NOAA’s National Marine Fisheries Service (NMFS), Fisheries Statistic Division, which provide data for the GOM as a whole and by individual states. More localized data

were acquired from the Texas Parks and Wildlife Department (TPWD) to provide commercial fishing statistics for areas in proximity to the site of the SPM buoy system when possible. Specifically, the TPWD maintains landings and fishing effort (reported in hours) data for fishing that occurs in federally designated grids that contain offshore waters off the coast of Texas into the GOM (Figure 11-6). The proposed Project will be located in Grid 20.

In 2016, the GOM contributed 18 percent of commercial fish landings in the continental U.S. and 72 percent of total domestic shrimp landings (NMFS 2018a). While landings in Texas accounted for only 2.1 percent of total seafood production from the Gulf States, Texas is the greatest contributor of shellfish landings within the GOM, followed by Louisiana and West Florida (NMFS No Date). Table 11-3 provides landings values for the GOM and Texas over the 10-year period from 2008 through 2017. Note, landings data in Texas represents the amount of fish landed in Texas, however some of the fish landed could have been caught in another Gulf state.

Table 11-3: Total Commercial Landings by Weight in the Gulf of Mexico and Texas 2008-2017

Year	GOM	Texas ^a	
	Landings (in million pounds)	Landings (in million pounds)	Percentage (%) of Gulf Coast Landings
2008	1,278.8	34.6	2.7%
2009	1,435.6	47.5	3.3%
2010	1,072.0	41.9	3.9%
2011	1,792.5	41.4	2.3%
2012	1,489.5	40.2	2.7%
2013	1,346.2	41.3	3.1%
2014	1,245.3	37.4	3.0%
2015	1,567.1	40.4	2.6%
2016	1,744.7	37.0	2.1%
2017 ^b	--	45.5	--

Sources: NMFS 2018a, TPWD 2018a.

^a Shrimp data are based on tail weight, except for bait shrimp data which are based on whole weight. Data does not include gulf and bay shrimp caught in federal zone 17, which includes a small portion of Texas state waters, but is predominately associated with waters offshore of Louisiana.

^b NMFS data for 2017 is not available.

As shown in Table 11-3, the percent of Gulf Coast seafood landings in Texas averaged about 2.9 percent each year, peaking in 2010 at 3.9 percent (NMFS 2018a, TPWD 2018a). This peak is likely due to the reduction in landings (by more than half) in areas of the GOM impacted by the Deepwater Horizon oil spill, specifically in Alabama and Mississippi (NMFS No Date).

Table 11-4 summarizes the weight and dollar value of species caught in Texas nearshore waters (from 0 to 3 nm)¹ and in territorial and U.S. navigable waters to the limits of the EEZ (from 3 to 200 nm) (NMFS 2018a). Certain species can be caught in both inshore and offshore habitats, whereas others are only caught in either inshore or offshore habitats. For example, oysters and blue crab are only harvested inshore

¹ Texas State Territorial Waters extend from 0 to 9 nm offshore, however NMFS appears to compile data for a smaller area.

in their shallow water habitats. In 2012, the most important commercial seafood species landed off the coast of Texas and in the offshore waters in the vicinity of the Project were shrimp and oyster (see Table 11-4; NMFS 2018a).

Table 11-5 presents commercial species caught in Texas in 2016 based on the trip ticket program. The program is administered by Texas Parks and Wildlife Department’s (TPWD) who collect and compile landings data reported by commercial fisherman and dealers (TPWD 2018b). Monthly reports must be provided by all dealers who purchase or receive aquatic products, unless they are purchased or received from another dealer. Commercial fishermen are required to report trip tickets for all sales to individuals.²

The dominate species landed in Texas in 2019 was brown shrimp, both in terms of weight and value, followed by white shrimp and blue crab in terms of weight, however eastern oysters and red snapper exceed the value of blue crab.

Table 11-4: Commercial Fish Landings by Distance from Texas Shore: Top Ten Ranked by Pounds Landed (2012)

Rank	Species	0 - 3 nm ^a		3 - 200 nm	
		Pounds (in thousands)	Dollars (in thousands)	Pounds (in thousands)	Dollars (in thousands)
1	Shrimp	14,481	\$35,836	54,569	\$123,625
2	Oyster	5,817	\$21,300	0	\$0
3	Blue Crab (Hard)	2,846	\$2,871	0	\$0
4	Other Marine Fish	1,680	\$1,608	91	\$141
5	Red Snapper	0	\$0	1,122	\$4,447
6	Vermillion Snapper	5	\$15	506	\$1,418
7	Groupers	1	\$0	220	\$757
8	Tilefish	0	\$0	134	\$318
9	Mullet	93	\$262	0	\$0
10	Croaker	89	\$740	0	\$0
All remaining inshore and offshore species		250	\$503	51	\$107
Source: NMFS 2016					
Notes: Zero indicates less than 500 pounds or 500 dollars in landings.					
^a Texas State Territorial Waters extend from 0 to 9 nm offshore, however NMFS appears to compile data for a smaller area as defined within the table.					

Table 11-5: Commercial Species Caught in Texas (2016)

Species	Pounds	Dollars	Species	Pounds	Dollars
Brown Shrimp	16,060,913	\$64,368,053	Seabob Shrimp	2,013	\$2,807
White Shrimp	5,974,196	\$20,682,685	Yellowfin Tuna	C	C
Blue Crab	5,041,927	\$6,472,240	Unclassified Snapper	1,551	\$3,943
Eastern Oyster	3,126,694	\$17,125,175	Stingrays	1,229	\$1,438
Red Snapper	2,386,461	\$10,557,790	Unclassified Scorpionfish	1,100	\$3,208
Black Drum	1,994,875	\$2,282,564	Blue Catfish	1,090	\$1,463
Live Baitshrimp	808,580	\$3,900,422	Brief Squid	1,052	\$1,764

² Other than wholesale fish dealer, retail fish dealer, wholesale truck dealer, retail truck dealer, bait dealer, or bait-shrimp dealer.

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Species	Pounds	Dollars	Species	Pounds	Dollars
Yellowedge Grouper	325,222	\$1,419,317	Sand Seatrout	972	\$878
Dead Baitshrimp	314,117	\$556,011	Yellowfin Grouper	922	\$3,356
Tilefish	201,576	\$598,743	Gray Trigger Fish	912	\$1,624
Vermilion Snapper	191,808	\$583,546	Unclassified Scrap	909	\$528
Atlantic Croaker	100,145	\$855,809	Dolphinfish	703	\$2,300
Unclassified Mullet	64,248	\$202,651	Crevalle Jack	687	\$1,467
Brn Pink Shrimp	60,579	\$84,043	Speckled Hind	629	\$2,387
Unclassified Flounder	47,234	\$180,617	Wahoo	582	\$1,926
King Mackerel	32,307	\$63,245	Great Barracuda	512	\$466
Greater Amberjack	25,134	\$40,746	Yellowmouth Grouper	509	\$1,718
Warsaw Grouper	25,066	\$91,209	Lane Snapper	500	\$1,609
White Mullet	23,940	\$50,142	Blueline Tilefish	497	\$778
Striped Mullet	22,377	\$54,697	Unclassified Kingfish	494	\$578
Southern Flounder	17,018	\$58,417	Shortfin Mako Shark	C	C
Rock Shrimp	15,221	\$49,696	Black Grouper	446	\$1,575
Atlantic Cutlassfish	13,735	\$13,665	Spanish Mackerel	408	\$701
Unclassified Herring	12,308	\$14,543	Pinfish	380	\$1,261
Sheepshead	11,817	\$6,626	Swordfish	C	C
Gulf Kingfish	11,792	\$23,584	Florida Pompano	283	\$872
Silk Snapper	10,112	\$28,324	Snake Eel	C	C
Unclassified Food	9,053	\$16,948	Rainbow Runner	109	\$157
Snowy Grouper	8,972	\$33,943	Banded Rudderfish	103	\$190
Scamp Grouper	8,753	\$32,909	Yellowtail Snapper	91	\$284
Pigfish	8,530	\$81,169	Atlantic Bonita Tuna	64	\$51
Gulf Butterfish	6,693	\$23,426	Blue Fish	61	\$109
Almaco Jack	6,428	\$11,654	Unclassified Jack	56	\$20
Mantis Shrimp	6,022	\$18,895	Southern Kingfish	C	C
Cobia	5,819	\$20,616	Unclassified Triggerfish	C	C
Porgies	4,398	\$4,823	Queen Triggerfish	41	\$68
Stone Crab	4,225	\$26,727	Gray Snapper	C	C
Blue Runner	4,116	\$4,463	Rock Hind	32	\$166
Ballyhoo	4,039	\$22,715	Family Gar	C	C
Unclassified Squid	3,990	\$7,639	Whitebone Porgy	C	C
Goldface Tilefish	3,864	\$9,256	Unclassified Tilefish	C	C
Pink Shrimp	3,424	\$6,631	Channel Catfish	C	C
Unclassified Grouper	3,184	\$9,840	Unclassified Grunt	18	\$15
Gafftopsail Catfish	2,993	\$1,362	Red Grouper	C	C
Blackfin Tuna	2,380	\$3,354	Red Hind	10	\$63
Gag Grouper	2,189	\$8,072	Atlantic Spadefish	C	C
Unclassified Killifish	2,158	\$48,428	Unclassified Codfishes	C	C
Bar Jack	2,150	\$3,202	Wenchman	C	C
Total				37,045,004	\$130,808,694

Source: TPWD 2018a

Notes:

Includes Shrimp data compiled by NMFS, which includes shrimp caught in Texas but landed in another state.

Data excludes federal zone 17, which includes a small portion of Texas waters, but is predominately associated with waters offshore of Louisiana.

C = Confidential – when fewer than three fisherman or dealers have reported landings for the species.

Figure 11-5 compares landings volume for top three fishing ports in Texas, i.e., Brownsville – Port Isabel, Galveston, and Palacios, for a ten-year period (Texas State Historical Association 2018). These ports are 108, 189, and 97 mi, respectively, from the proposed Project. Collectively these ports consistently received over 30 million pounds annually during the 10-year period. Commercial landings at the Aransas Pass – Rockport, which is the closet port to the Project, have been generally decreasing in recent years and average about 1.7 million pounds per year (based on data for 2013, 2014, and 2016). While these statistics do not provide detail on where the fish were caught, presumably some of the catch would have come from inshore and offshore waters in the vicinity of the Project.

Figure 11-5: Total Commercial Fishery Landings at Ports in the Vicinity of the Project

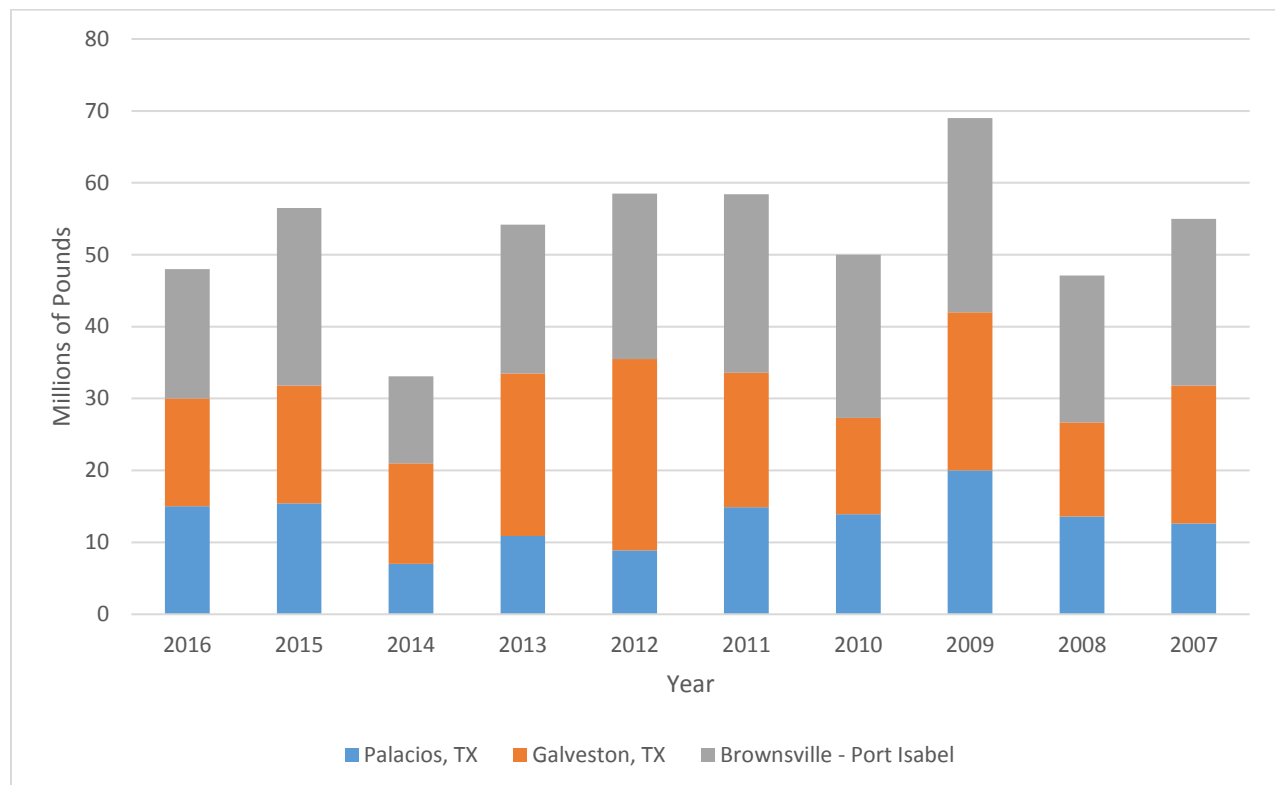
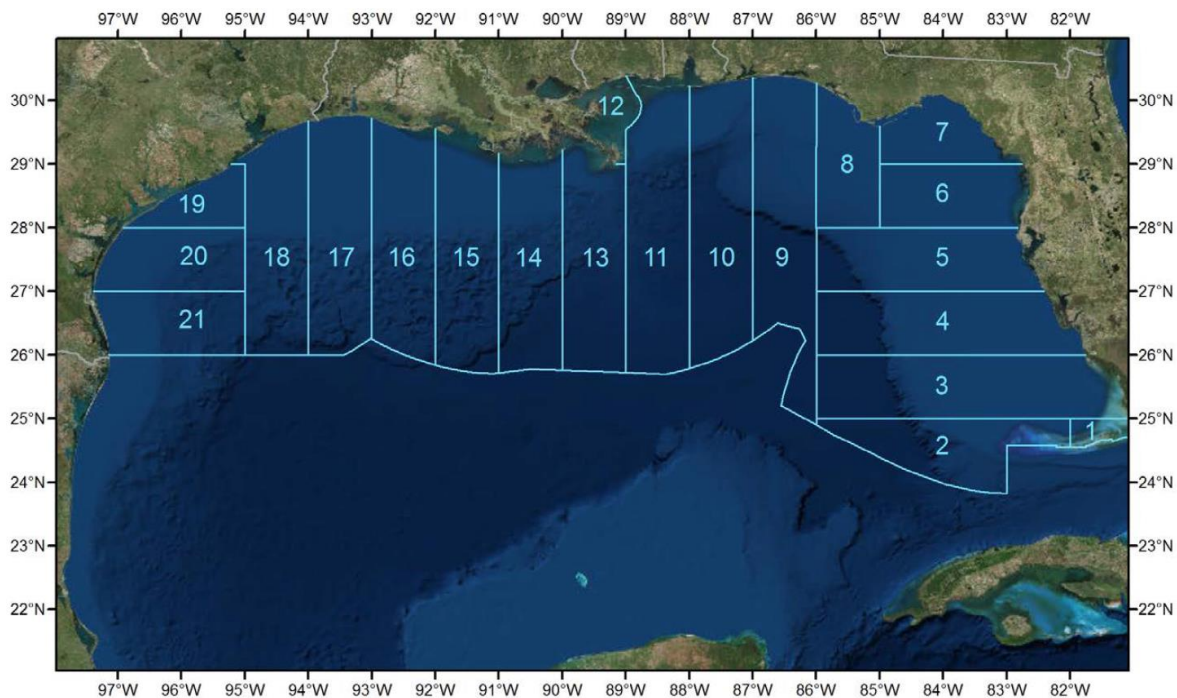


Figure 11-6: Gulf of Mexico Grid of Federal Waters



Annual commercial fishing trips to federal waters offshore of Texas are presented in Table 11-6. Grid 20 consistently had the lowest average number of recorded trips from 2015 to 2017 of the three grids closest to the Project.

Table 11-6: Annual Commercial Vessel Fishing Trips in Federal Grids Offshore of Texas

Federal Grid	2017 Total Trips	Three-Average (2015 - 2017)
Grid 19	902	893.7
Grid 20	294	298.7
Grid 21	785	749.7

Source: TPWD 2018a
 Note: The trip level data from 2015-2017 is based on Texas Trip Ticket data and does not include data from other states landings.
^a The proposed Project would be located in this federal grid.

Landings (in pounds and dollars) by species within Grid 20 for years 2015 through 2017 are presented in Table 11-7.

The 2015 and 2016 data are based on NMFS data which includes all shrimp caught in federal zone 20, regardless of where the fish are landed. Alternatively, the 2017 data are based solely on TPWD's trip ticket program, which includes only shrimp caught in federal grid 20 that are also landed in Texas. Despite the differences in the underlying data for these years, table 11-7 shows that brown shrimp are consistently the most harvested fish in Grid 20, as well as being the most valuable harvest.

Table 11-8 presents similar data as that described for table 11-7, but exclusively for shrimp. As shrimp are the most frequently harvested species offshore of Texas, they are likely to be frequently caught in the waters

near the proposed SPM buoy system. Table 11-9 shows that landings data for the grid in which the proposed SPM buoy system would be located, is typically fished by trawl.

Table 11-7: Fish Landing and Values by Species in Federal Grid 20^a

Species	2015 Landings (pounds)	2015 Values (dollars)	2016 Landings (pounds)	2016 Values (dollars)	2017 Landings (pounds)	2017 Values (dollars)	Total Landings (pounds)	Total Values (dollars)
Brown Shrimp	3,394,118	\$9,590,035	2,207,809	\$7,944,459	2,386,552	\$8,395,755	7,125,275	\$22,593,794
White Shrimp	109,562	\$338,637	85,220	\$237,857	165,457	\$851,932	353,663	\$1,537,207
Live Baitshrimp	1,401	\$7,688	4,788	\$28,728	C	C	8,290	\$46,260
Dead Baitshrimp	2,944	\$7,360	340	\$534	C	C	3,390	\$8,053
Red Snapper	NA	NA	NA	NA	C	C	C	C
Rock Shrimp	222	\$646	339	\$1,132	NA	NA	1,163	\$2,094
Unclassified Mullet	204	\$987	895	\$4,831	C	C	1,103	\$5,854
Atlantic Cutlassfish	422	\$400	NA	NA	C	C	429	\$407
Unclassified Herring	144	\$378	NA	NA	NA	NA	C	C
Unclassified Squid	138	\$110	NA	NA	NA	NA	C	C
Atlantic Croaker	NA	NA	50	\$660	C	C	82	\$958
Seabob Shrimp	554	\$605	350	\$535	NA	NA	C	C
Striped Mullet	NA	NA	NA	NA	C	C	C	C
Blacktip Shark	NA	NA	NA	NA	C	C	C	C
Pinfish	NA	NA	NA	NA	C	C	C	C
Vermilion Snapper	NA	NA	20	\$50	NA	NA	NA	NA
Grand Total	3,509,709	\$9,946,846	2,299,811	\$8,218,786	2,556,311	\$9,268,667	8,365,831	\$27,434,299

Source: TPWD 2018a
 Notes: C = Confidential – when fewer than three fisherman or dealers have reported landings for the species. NA = no catch reported for this species
^a The proposed Project would be located in Federal Grid 20.

Table 11-8: Shrimp Landings in the Federal Grids in the Project Vicinity^a

Federal Grid	2015 Landings (pounds)	2016 Landings (pounds)	2017 Landings (pounds)	Average Landings 2015-2017 (pounds)
Grid 19	7,363,067	4,599,679	10,505,313	7,489,353
Grid 20 ^a	3,508,801	2,298,846	2,554,216	2,787,287
Grid 21	9,866,114	8,151,225	7,599,880	8,539,073

Source: TPWD 2018a.
^a The proposed Project would be located in this federal grid.

Table 11-9: Fish Landing and Values by Gear Type in Federal Grid 20^a

Gear Type	2015 Landings (pounds)	2015 Values (dollars)	2016 Landings (pounds)	2016 Values (dollars)	2017 Landings (pounds)	2017 Values (dollars)	Total Landings (pounds)	Total Values (dollars)
Shrimp Trawl	3,316,401	\$8,841,558	1,627,490	\$6,103,915	2,554,257	\$9,258,010	7,498,148	\$24,203,483
Hook and Line	NA	NA	NA	NA	2,030	\$10,601	2,030	\$10,601
Cast Net	C	C	\$895	\$4,831	C	C	1,123	\$5,874

Gear Type	2015 Landings (pounds)	2015 Values (dollars)	2016 Landings (pounds)	2016 Values (dollars)	2017 Landings (pounds)	2017 Values (dollars)	Total Landings (pounds)	Total Values (dollars)
Source: TPWD 2018a. Notes: C = Confidential – when fewer than three fisherman or dealers have reported landings for the species. NA = no catch reported for this species ^a The proposed Project would be located in this federal grid.								

11.2.3 Recreation

11.2.3.1 Public Parks and Beaches

The beaches within the Texas Coastal Zone are popular recreation locations for both local Texas residents and tourists. Sunbathing, swimming, bird watching, are all popular activities at the beaches local to the Project.

11.2.3.2 Recreational Boating

In 2014 over 580 thousand boats were registered in Texas, and boating safety is the responsibility of Texas game wardens (TPWD 2018c). Recreational boating in the vicinity of the Project have a variety of launch points to choose from depending on the specific boating activity and destination for a given trip. There are 29 public recreational boat launches providing access to the bays and offshore waters off the coast of Texas in the Project vicinity, see Figure 11-7 (TPWD 2018d). An additional 56 boat ramps are available within 100 mi of the Project and include boat ramps in neighboring counties; however, most recreational boaters nearby the Project would be expected to launch from ramps closer to the desired fishing location. Access within the vicinity of the Project could also occur via boat ramps that are located on inland waterways connecting to the Gulf.

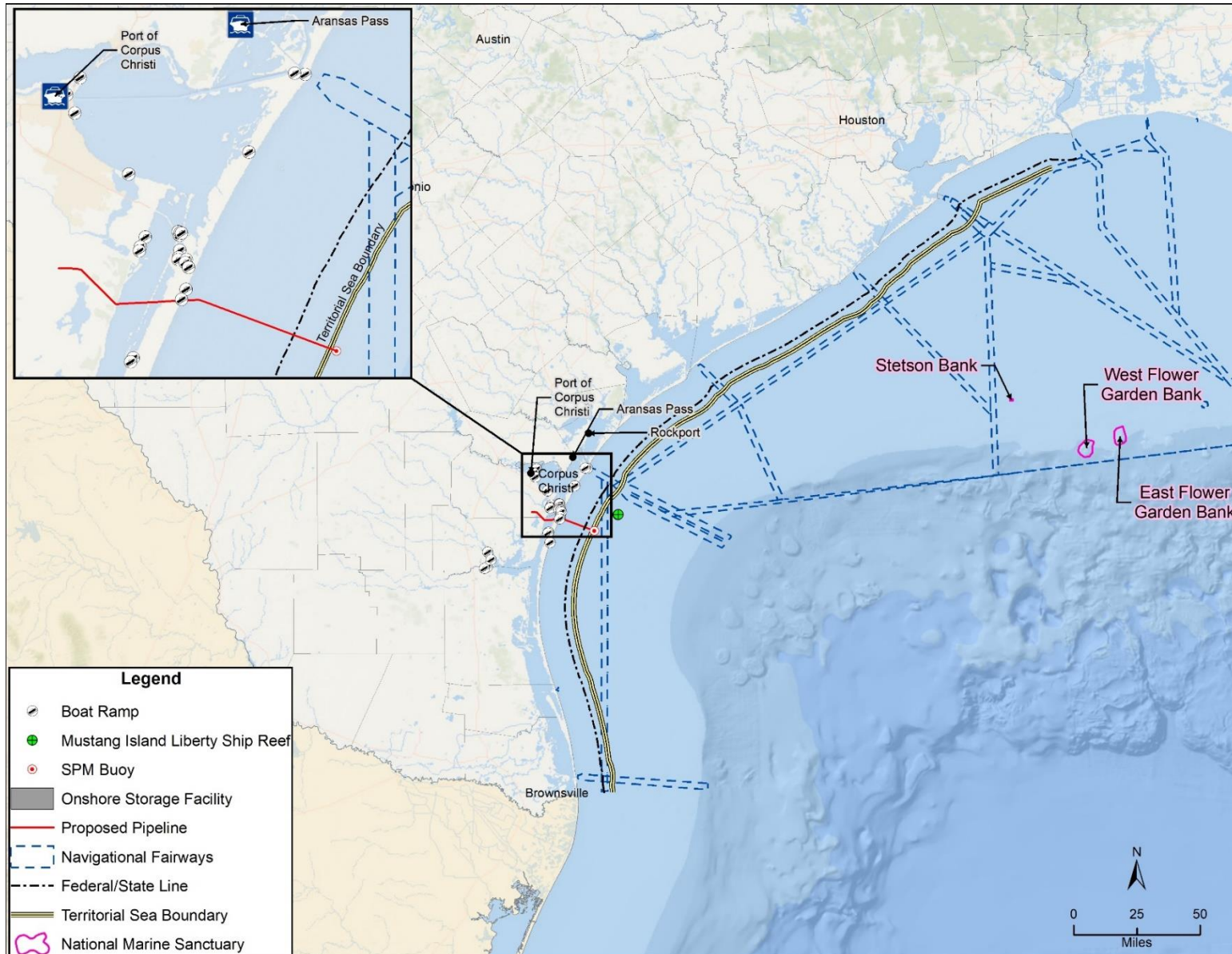


Figure 11-7: Recreational Features in the Vicinity of the Project

One attractor for recreational boaters in the GOM is artificial reef structures. In Texas, large inlets or ship channels are protected by jetties and concrete or rubble breakwaters along bay and barrier island shorelines, which act as reef structures attracting species that prefer artificial substrates (TPWD 2018e). Also, as part of the Texas Artificial Reef Program, decommissioned oil and gas infrastructure can be converted to reef structures (TPWD 2018f). While events in the recent past, such as increased security from 9-11, perceived contamination of the BP oil spill, and destruction or damage to infrastructure from hurricanes, have diminished the volume of diving that occurs around oil and gas inactive platforms that served the self-contained underwater breathing apparatus (SCUBA) community, diving is still known to occur around inactive rigs. The proposed SPM buoy system location is in about 92 ft. (28 meters [m]) of water, and the nearest artificial reef (Mustang Island Reef) is located approximately 8 mi northeast of the Project (TPWD 2018e). Active platforms in proximity to the proposed Project would not be candidates for scuba activities; however, upon decommissioning, a platform could be converted to a reef as part of the Texas Artificial Reef Program.

National Marine Sanctuaries (NMS) are also well-known destinations for recreational fishing and diving and can be assessed by private boat or charter (NOAA 2017). Two designated NMSs are in the GOM (the Flower Garden Banks NMS and the Florida Keys NMS); the closest (Stetson Bank, within the Flower Garden Banks NMS) is about 174 mi northeast of the Project. NMS are also discussed in Section 5, “Inshore and Offshore Aquatic Environment.”

The Ports of Galveston and Houston on Galveston Bay are the closest cruise ship departure ports to the proposed Project. Cruise ships, or other recreational vessels, traveling north-south that call at these ports are likely to transit in or near the shipping safety fairways about 2.9 mi east of the SPM buoy system. Recreational vessels that travel east-west to access the POCC will navigate in or near the defined shipping safety fairway about 3 mi north of the SPM buoy system (see Figure 11-4). Neither the POCC nor the Aransas Pass-Rockport are ports that regularly receive cruise ships engaged in multi-day trips. Thus, cruise ships do not typically use the shipping safety fairways in the vicinity of the Project.

11.2.3.3 Recreational Fishing

This section discusses the marine use aspects of recreational fishing such as how frequently the activity is practiced and where. EFH for recreational fisheries is discussed in Section 7, “Wildlife and Protected Species,” and Appendix G, “Essential Fish Habitat Assessment.” The economic contribution of recreational fishing to the area is discussed in Section 9, “Socioeconomics.”

Based on the depth of the waters where the SPM buoy system will be located (92 ft. [28 m]), recreational activities in proximity would be considered offshore fishing; however, inshore fishing (in the Laguna Madre) and nearshore fishing (on the seaward side of Padre Island) would also occur nearby the Project. Target species in the Gulf include: Atlantic croaker, Gulf and southern kingfish, sand and silver seatrout, spotted seatrout, sheepshead porgy, red drum, red snapper, southern flounder, Spanish mackerel, and striped mullet (NMFS No Date). Recreationally important coastal pelagic species such as king and Spanish mackerel, cobia, and jacks are sought by the charter and recreational fisheries in the region.

Since 1974 TPWD has been conducting creel surveys to collect data on marine recreational fishing; as such NMFS stopped collecting this data since 1986. Saltwater fishing effort (measures in hours) in inland waters, state territorial waters, and the EEZ off the coast of Texas for a 10-year period are presented in Table 11-10. The data presented in Table 11-10 are based on marine recreational fishing surveys conducted by TPWD (TPWD 2018g).

Table 11-10: Recreational Saltwater Fishing in Texas State Inland and Territorial Seas and the EEZ (2008 - 2017)

Year	Angler-hours in Inland Saltwater Bodies (in thousands)	Angler-hours in State Territorial Waters (0 to 9 nm) (in thousands)	Angler-hours in the EEZ Offshore of Texas (9 to 200 nm) (in thousands)	Total Saltwater Angler-hours (in thousands)	Percent (%) of Angler-hours in EEZ
2008	5,590	297	166	6,054	2.8
2009	5,530	229	194	5,952	3.3
2010	5,361	184	132	5,677	2.3
2011	5,932	278	147	6,357	2.3
2012	6,378	157	126	6,662	1.9
2013	6,134	165	149	6,448	2.3
2014	5,730	155	105	5,990	1.7
2015	5,498	213	117	5,828	2.0
2016	6,366	171	129	6,666	1.9
2017	6,198	166	155	6,520	2.4

Source: TPWD 2018g

Between 2008 and 2017 recreational fishing effort in the EEZ offshore of Texas was less than 2 percent of total recreational saltwater trips in Texas inland, territorial, and offshore waters (TPWD 2018g).

Table 11-11 shows fishing effort in the Corpus Christi and Laguna Madre Systems in 2017 (TPWD 2018g). These estimates included fishing effort by private and rental boats and charter boats. In 2017, anglers spent close to 1.2 million hours fishing in the Corpus Christi Bay System, of which almost half (52 percent) occurred from shore. Alternatively, only about a third (35 percent) of the total marine recreation fishing effort in the Laguna Madre Bay System was from shore.

Table 11-11: Marine Recreational Fishing Trips to Corpus Christi and Laguna Madre Bay Systems in 2017

Angler Type	Corpus Christi Bay System		Laguna Madre Bay System	
	Total	Percent	Total	Percent
For-hire	200,858	17%	391,845	15%
Private Vessel	370,755	31%	1,270,575	49%
Shore	619,097	52%	906,694	35%
Total	1,190,710	100%	2,569,114	100%

Source: TPWD 2018g

11.2.4 Aesthetics

11.2.4.1 Onshore Viewshed

The land use in the region of the onshore storage facility is generally agriculture and does not currently have any farming activity (see Figure 11-1).

The land use in the region of the inshore pipeline crossing at Padre Island is vacant land located just north of the protected PINS. Since its founding in 1962, PINS has regulated non-federal oil and gas development within its boundaries and in 2001 developed an Oil and Gas Management Plan to “...manage, the exploration, development, and transportation of nonfederal oil and gas.” While the inshore component of the proposed alternative is not on PINS lands, there is a precedent for this activity in the region.

11.2.4.2 Offshore Activities

The baseline aesthetics in the vicinity of the Project is the open GOM horizon dotted by various oil/gas exploration and production facilities, aids to navigation (floating sea buoys), large commercial vessel traffic, and miscellaneous small commercial and recreational vessel traffic

11.3 Environmental Consequences

The methodology for evaluating impacts to coastal zone resources has identified consequence-producing factors within three distinct phases of the Project, including Construction, Operation, and Decommissioning. Consequences are assessed to determine the magnitude of impact. Refer to Appendix A: Construction, Operation and Decommissioning Procedures, for a detailed description of techniques, procedures, and phases of the Project that were used to evaluate environmental consequences in the following sections.

11.3.1 Installation/Commissioning

11.3.1.1 Land Use

Onshore Land Use

The development of the onshore storage facility will result in a permanent take of land in the footprint of the facility. The land use in the region of the onshore storage facility is generally agriculture, however, the land where the onshore storage facility will be located does not currently have any farming activity (Figure 11-1). Impacts to local land use as a result of the onshore storage facility are anticipated to be permanent and of negligible significance.

In the region of the inshore pipeline crossing at Padre Island, the land is vacant and located just north of the protected PINS. PINS regulates non-federal oil and gas development since its founding in 1962 and in 2001 developed an Oil and Gas Management Plan to “...manage, the exploration, development, and transportation of nonfederal oil and gas.” (United States Department of the Interior [DOI] NPS 2001). So, while the inshore component of the proposed alternative is not on PINS lands, there is a precedent for this activity in the region. Impacts to local land use as a result of the inshore pipeline crossing are anticipated to be permanent and of negligible significance.

Offshore Oil and Gas Activity

Installation of the Project is not likely to affect offshore oil and gas activities in the vicinity of the Project. No active drilling is happening within the lease blocks that would be transected by the proposed offshore pipelines or within lease block 823. Any oil/gas exploration that would be proposed during installation of the Project would be aware of all activity, obstacles, and obstructions within their area of interest. As such, no impact is anticipated to offshore oil and gas activities as a result of the Project construction.

Offshore Pipelines or Other Submerged Infrastructure

The Texas RRC database indicated that there is one gas transmission pipeline (owned by Mustang Island Gathering, LLC) that transects the proposed offshore pipeline corridor at the northwest/2 of Mustang Island Large Block 818. Based on a review of records, the existing pipeline to be crossed is not currently operational. No other offshore pipelines or other submerged infrastructure has been identified within the pipeline ROW.

Prior to Project construction, the Applicant will contact the pipeline owner to request the owner’s permission for the existing pipeline to be plugged and a section be cut to allow for the proposed offshore pipeline to be installed below the seafloor. If the current owner cannot be contacted for permission to plug and cut the existing line, it will be treated as if it is a currently operational line and the existing pipeline would be covered with grout bags to provide a spacing of 1.5 ft. between the existing pipeline and the proposed offshore pipelines to be installed. The proposed offshore pipelines will be ramped up, over, and down to maintain the necessary bend radiuses within stress and strain allowable limits. After making the crossing, if any portion of any line remains above the ocean floor, it will be covered by concrete mats to ensure the protection of any portions of the offshore pipeline located above the seabed.

No other offshore pipelines or other submerged infrastructure is anticipated to be impacted by the proposed Project.

With the above mitigation in place, potential impacts to offshore pipelines or other submerged infrastructure as a result of the inshore pipeline crossing are anticipated to be permanent and of negligible significance.

For discussion on submerged cultural resources, please refer to Section 8, Cultural Resources, of this Volume II.

Other OCS Non-Energy Minerals Resources

Construction of a project within the immediate vicinity of OCS non-energy minerals resources could result in disturbance and adverse impacts to these resources. As identified, there are no OCS non-energy minerals lease areas in the vicinity of the Project, as such, no impact to OCS non-energy minerals resources is anticipated as a result of Project installation and commissioning.

Marine Shipping and Commercial Ports

Establishment of a temporary safety zone during installation of the Project is not likely to significantly affect commercial shipping or activities at the POCC. Typically, commercial vessels use the established fairway located 2.46 nm to the east of the site (Figure 11-4). Any vessels that would otherwise transit through the Project vicinity would be forced to navigate around the safety zones, increasing the time that it would take them to move through the area and reach their destination. The temporary safety zones would be in effect for approximately 18 months. Any vessels that would have utilized the areas that will be off-limits due to safety zones, could use established fairways or move around that area. It is unlikely that large commercial vessels would be transiting outside of established fairways. However, those that do would be affected only for the short-term duration of the construction period. Construction is expected to have negligible effect on marine shipping.

Military Use

Construction of the Project is not expected to affect military activities. The Project offshore construction sites are located amidst various designated Military Warning Areas and/or specialized training zones (see Section 11.2.1.6). Any military activities that occur during construction or after installation and commissioning of the Project would have the added benefit of a new feature/activity within the landscape that would provide an additional element of interest on the landscape for military operations and training in the area. The schedule of Project construction activities would be coordinated and communicated with area ports, USCG, and other military branches, as directed. Construction of the Project would have **negligible** impacts on military uses in the area.

Lightering Zones

The closest USCG lightering zone to the proposed Project is the Southtex-lightering Zone, located approximately 60 mi from the SPM. Due to the removed nature of the Project from the lightering zone, it is not anticipated that the Project will pose any undue restrictions to the lightering zone or lightering operations. As such, the Project is anticipated to have no impact on lightering zones.

Lightering zones are further discussed in Section 13, Navigation and Navigation Safety, of this Volume II.

Coastal Zones

The entirety of the proposed Project is within the Texas Coastal Management Zone. To minimize potential impacts to coastal resources, the Applicant will install the coastal crossing of the offshore pipelines using horizontal directional drilling (HDD), as described in Appendix A.

The shore approach drills are anticipated to be almost a mile long (approximately 0.95 mi, 1.5 km) in order to avoid any sensitive shallow water and shoreline habitat. The use of the HDD technique will avoid any surface impacts as the pipeline is expected to be relatively deep. The offshore pipelines will result in no permanent impact to the seabed since they will be buried with a minimum depth of 5 ft. (1.5 m) of cover.

Additional information concerning the potential for water quality and resource impacts is provided in Sections 3 “Water Quality and 5 “Inshore and Offshore Aquatic Resources”, respectively.

As such, the Project is anticipated to have negligible impact on coastal zones during construction.

Protected Offshore Habitats

11.3.1.1.1 Marine Managed Areas

No MMAs have been identified in the vicinity of the proposed Project, as such, no impact to MMAs is anticipated as a result of the Project.

11.3.1.1.2 Essential Fish Habitat

Reference Sections 5.0, 6.0, 7.0, and Appendix G for a discussion regarding EFH.

11.3.1.1.3 Coral Reef

No coral reefs have been identified in the vicinity of the proposed Project, as such, no impact to coral reef is anticipated as a result of the Project.

Dredged Material Discharge Zones

The proposed Project do not cross any Ocean Dredged Material Disposal Sites (ODMDS). The nearest ODMDS is located approximately 20 mi northeast of the proposed Project and as such, no impact to ODMDS is anticipated a result of the Project.

Commercial Fishing

During the 18-month construction period of the SPM buoy system, commercial fishing will be prohibited in the temporary safety zone. This will primarily affect commercial harvesters of shrimp but could also affect commercial fishermen targeting open water pelagic finfish like mackerels and dolphin. Fishermen who typically would fish in the area of the temporary safety zone could choose to fish in a new or more distant area, allowing them to maintain a similar harvest level. Although the removal of these fishing areas could negatively affect commercial fishermen through increased costs of recovering the same harvest levels and increased travel distances or expended effort to achieve similar harvest levels, there is no unique habitat located at the site of the SPM buoy system that would attract commercial fishermen. Given the sufficient fishing habitat available in the adjacent, unrestricted areas and because harvest levels are typically set below estimated abundances, no impact to actual harvest levels in the Project vicinity are anticipated.

Similarly, construction of the Offshore and Inshore Pipelines will be sequential over the 18-month construction and testing period, during which waters in proximity to construction vessels will be inaccessible to fisherman. Similar to that discussed for the SPM buoy system, fishermen who typically fish in the waters where the pipelines will be installed could choose to fish in a new or more distant area, allowing them to maintain a similar harvest level. Within the Laguna Madre, the Intracoastal Waterway would be crossed by HDD, which would allow fishermen unrestricted access to other portions of Laguna Madre. Given the sufficient fishing habitat available in the vicinity of the Project, no impact to actual harvest levels area are anticipated.

Overall, construction of the proposed Project will result in minor, temporary, direct effects on commercial fishermen by temporarily displacing their access to an available fishing area, or by resulting in minor changes in transit paths around areas of active pipeline construction. The location of the temporary safety zone would be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fisherman so they can plan alternate routes and/or destinations to other accessible areas nearby the Project. As such, impacts on commercial fishermen’s ability to maintain current harvest levels and assess to fishing areas in the broader region will be negligible. Further, construction activities are not expected to impact fishery resources at the population level (see Section 6, “Commercial and Recreational Fisheries” and Section 7 “Wildlife and Protected Species”).

11.3.1.2 Recreation

Parks and Beaches

The entirety of the proposed Project is within the Texas Coastal Management Zone. To minimize potential impacts to coastal recreation, the coastal crossing of the offshore pipelines will be installed via HDD, as described within Appendix A.

The shore approach drills are anticipated to be almost a mile long (approximately 0.95 mi, 1.5 km) in order to avoid any sensitive shallow water and shoreline habitat. The use of the HDD technique will avoid any surface impacts as the pipeline is expected to be relatively deep. The offshore pipelines will not result in permanent seabed impacts since they will be buried with a minimum depth of 3 ft. (1 m) of cover.

Additional information concerning the potential for water quality and biological resource impacts is provided in Sections 3 “Water Quality and 7 “Wildlife and Protected Species”, respectively.

As such, the Project is anticipated to have negligible impact on parks and beaches during construction.

Recreational Boating

Nearshore and offshore recreational boaters would be prohibited from transiting through the temporary safety zones associated with construction of the proposed Project. The temporary safety zone associated with the SPM buoy system will be inaccessible for 5 weeks, while other areas of Project construction associated with pipeline installation will be inaccessible for a shorter period, about 14 weeks. The location of the temporary safety zone would be published in the USCG Local Notice to Mariners, serving as a forewarning for boaters so they can plan alternate routes and/or destinations to other accessible areas in the Project vicinity. Given the amount of boating opportunities in the near and offshore waters in the area, impacts on boaters will be temporary and negligible. As stated above, the closest known scuba diving site (an artificial reef) that would attract recreational boaters is 8 mi northeast of the Project. Further as neither the POCC nor the Aransas Pass-Rockport regularly receive cruise ships engaged in multi-day trips, shipping fairways near the Project are not likely to support this activity. Overall, construction of the proposed Project will have a negligible impact on recreational boating.

Recreational Fishing

During the 1.5-year construction period of the SPM buoy system, recreational fishing will be periodically prohibited in the temporary safety zone. Direct effects on offshore recreational fishing experiences will be negligible given the availability of accessible offshore fishing areas in proximity to the SPM buoy system site, and the lack of unique fishing opportunities afforded by the offshore Project site. Further, given that only 2 percent of angler-trips to the area occur in the EEZ off the coast of Texas, we believe the unrestricted areas outside of the immediate Project vicinity are sufficient to accommodate the fishing trips that could be displaced during construction. Therefore, the construction of the SPM buoy system will have a negligible impact on recreational offshore fishing.

Similarly, construction of the Offshore Pipelines and Inshore Laguna Madre Pipelines will be sequential over the 18-month period, during which, waters in proximity to construction vessels will be inaccessible to fisherman. The Intracoastal Waterway would be crossed by HDD, which would allow fishermen unrestricted access to other portions of Laguna Madre. These areas will be relatively small compared with other accessible nearshore and offshore fishing locations in the Project vicinity.

Construction of the proposed Inshore North Padre Island Pipelines and Onshore Pipelines will generally be sequential over the 18-month period. At four locations the pipelines will be installed via the HDD method, which will occur over about 6 weeks at each location. During the construction periods for these activities, access to the specific portions of the Padre Island shoreline would be limited. Similarly, the shoreline at the proposed Onshore Storage Facility site will be inaccessible during construction of this facility. However, these onshore lands are privately owned and the shoreline is generally not accessible to the public. Given the amount of accessible shoreline within the Laguna Madre Bay System and nearby Corpus Christi Bay System, impacts on recreational fishermen will be temporary and negligible.

Overall, construction of the proposed Project will result in temporary, direct, and indirect effects on recreational fishermen by temporarily displacing their access to an available fishing area. The location of the temporary safety zone would be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational fisherman so they can plan alternate routes and/or destinations to other accessible areas. As such, impacts on recreational fishing experiences in the broader region will be negligible.

Further, construction activities are not expected to impact fishery resource population-levels (see Section 6, “Commercial and Recreational Fisheries” and Section 7 “Wildlife and Protected Species”).

11.3.1.3 Aesthetics

Onshore Activities

During the construction of the onshore storage facility, the viewshed for areas directly adjacent to the construction area would be disrupted by the presence of trucks, dust, temporary employees, and other construction activities. Best Management Practices (BMP), such as dust suppression and construction lighting limitations, will be used to minimize the alteration of the viewshed. In addition, since the nature of the affected area is primarily rural and/or vacant, any anticipated and perceived adverse impact to visual amenity and aesthetics will be limited due to the lack of sensitive receptors within the locality of the proposed onshore storage facility.

In the vicinity of the onshore pipeline ROW however, sensitive receptors are present. The onshore pipeline ROW transects vacant land located just north of the protected PINS, and area frequented for recreation. Without mitigation, potential impacts to aesthetics and visual amenity from the presence of trucks, dust, temporary employees, and other construction activities, could be experienced by sensitive receptors such as recreational beach goers, bird-watchers, and boaters. To help minimize any such adverse impacts, the Project will utilize HDD to avoid the need for open cut pipeline trenching when crossing coastal areas, and BMPs, such as dust suppression and construction lighting limitations, throughout the construction phase. In addition, once the pipeline crossing is complete and pipeline buried in areas where vegetated ground disturbance occurred, the Applicant will re-seed the land with a native grass mixture or with some other suitable reclamation mixture approved by the BLM or the landowner to return disturbed areas to a vegetated state.

Overall, with mitigation in place, any adverse impact to aesthetics and visual amenity within the vicinity of the onshore activities during construction is anticipated to be temporary and minor.

Offshore Activities

The DWP terminal will be constructed 12.7 nm (14.6 mi) offshore and, therefore, will not be visible from the shore; as such, impacts to aesthetics and visual amenity resulting from offshore construction activities will be limited to offshore receptors, such as passing boat traffic.

The group of area users most likely to note a change in the ocean-scape or viewshed would be the recreational boaters (fishing and diving charters) who use the area for recreational purposes.

Construction of the DWP would take approximately 16 months to complete and is anticipated to present a short term **minor** visual impact for users in the offshore area.

11.3.2 Routine Operations

11.3.2.1 Land Use

Onshore Land Use

The development of the onshore storage facility would result in a permanent take of land in the footprint of the facility. The land use in the region of the onshore storage facility is generally agriculture; however, the land where the onshore storage facility will be located does not currently have any farming activity (Figure 11-1). Impacts to local land use as a result of the onshore storage facility once operational are anticipated to be of **minor** significance.

The land use in the region of the inshore pipeline crossing Padre Island is vacant land located just north of the protected PINS. As previously noted, there is a precedent for this activity in the region; in addition, once the pipeline crossing is complete, the pipeline will be buried and the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the BLM or the landowner and will be returned to a vegetated state. While the change of land use to pipeline ROW will be permanent, the impacts to local land use as a result of the inshore pipeline crossing are anticipated to be of minor significance.

Offshore Oil and Gas Activities

The proposed Project would have a negative effect on oil and gas uses by presenting an encumbrance to industry vessels that could otherwise access the safety zones to explore or drill from the surface of the water above the OCS. However, the Project's impact would be negligible considering that the OCS lease blocks adjacent would still be available for leasing and could be accessed by horizontal drilling or other technology. At this time, there are no federal lease blocks with active leases traversed by the proposed Project.

The effects of operation of the Project on offshore pipelines and other submerged infrastructure would be negligible.

Offshore Pipelines and Other Submerged Infrastructure

Based on the BOEM 2017–2022 Five-Year Leasing Program, there has been no interest in the OCS lease blocks traversed by or immediately adjacent to the proposed offshore facilities. One active lease was identified within the Project's protraction area (Mustang Island Area Block 726), however, it is not intersected by the proposed Project. Once operational, the Project is anticipated to have no impacts on offshore pipelines and other submerged infrastructure.

Other OCS Non-Energy Minerals Resources

There are no OCS non-energy minerals lease areas in the vicinity of the Project. Operation of the Project would not affect this resource, as such, no impact is anticipated.

Marine Shipping and Commercial Ports

Typically, commercial vessels use the established fairway located 2.46 nm to the east of the site (Figure 11-4). During operation, a 1,000 m radius safety zone will be established around the SPM buoy system. Any vessels that would otherwise transit through the Project vicinity would be forced to navigate around the safety zones, increasing the time that it would take them to move through the area and reach their destination. Any vessels that would have utilized the areas that will be off-limits due to safety zones, could use established fairways or move around that area. It is unlikely that large commercial vessels would be transiting outside of established fairways.

Overall, operation of the Project at full buildout is anticipated to result in a negligible impact on marine shipping and commercial port activity.

Military Use

The Project site is located amidst various designated Military Warning Areas and/or specialized training zones (see Section 11.2.5). Any military activities that occur in the vicinity of the Project would have the added benefit of a new feature/activity within the landscape that would provide an additional element of interest on the landscape for military operations and training in the area. Once the Project becomes a known element in the area, military operations will continue as normal. Operations of the Project would have no impact on military uses in the area.

Lightering Zones

The closest USCG lightering zone to the proposed Project is the Southtex-lightering Zone, located approximately 60 mi from the SPM. Due to the removed nature of the Project from the lightering zone it is not anticipated that the Project will pose any undue restrictions to the lightering zone or lightering operations. As such, the Project is anticipated to have no impact on lightering zones.

Coastal Zones

Due to the removed location of the onshore and offshore facilities, and buried nature of the pipeline, once operational the Project is anticipated to have no impact to coastal zones.

Protected Offshore Habitat

11.3.2.1.1.1 Marine Managed Areas

No MMAs have been identified near the proposed Project, as such, no impact to MMAs is anticipated as a result of the Project.

11.3.2.1.1.2 Essential Fish Habitat

No offshore habitats of critical importance have been identified in the vicinity of the proposed Project. No impact to EFH is anticipated as a result of the Project.

11.3.2.1.1.3 Coral Reef

No coral reefs have been identified near the proposed Project, as such, no impact to coral reef is anticipated as a result of the Project.

Dredged Material Discharge Zones

The proposed Project do not cross any ODMDS. The nearest ODMDS is located approximately 20 mi northeast of the proposed Project and as such, no impact to ODMDS is anticipated a result of the Project.

Commercial Fishing

During operation, an approximately 1,000 m safety zone will be established around the SPM buoy system. Activities such as commercial fishing will not be permitted within the safety zone and vessels will not be able to transit through the safety zone. This restricted area could have a negative, long-term impact on fishing opportunities by causing certain commercial fishermen to expend extra effort to maintain current harvest levels. However, given the location of the SPM buoy system is considered a low vessel traffic area and the amount of unrestricted fishing area available in the vicinity of the Project, offshore of Texas, and the Gulf overall, the no-fishing zone associated with the SPM buoy system would result in negligible impacts in commercial fishing activities. Further, the habitat within the restricted area is not unique or specifically productive for commercial fishing.

Once installation is complete, the Offshore and Inshore Pipelines will be buried and as such will not impede commercial fishing activities. Further, operation of pipelines is not expected to impact fishery resource population-levels (see Section 6, “Commercial and Recreational Fisheries” and Section 7, “Wildlife and Protected Species”). Overall, negative effects on commercial fishing from operation of the proposed Project will be negligible.

11.3.2.2 Recreation

Parks and Beaches

Once operational, the Project is anticipated to have a no impact to recreational parks and beaches.

Recreational Boating

Operation of the SPM buoy system could result in negative effects on recreational boaters due to the restricted area that will be created by the establishment of an approximately 1,000 m safety zone. As discussed in Section 10.2.3.3, recreational boating trips in the EEZ are a small percentage of recreational boating trips overall off the coast of Texas. Also, the area occupied by the safety zone is relatively small compared to other accessible waters offshore of Texas, and the character of the site does not offer any unique appeal for recreational boaters, such as those afforded by Mustang Island, which is the closest artificial reef to the proposed SPM buoy system site.

Neither the POCC nor the Aransas Pass-Rockport have ports that regularly receive cruise ships engaged in multi-day trips that would transit the fairways north and east of the SPM buoy system site. Further, cruise ships departing out of the Ports of Galveston and Houston on Galveston Bay do not typically use the shipping safety fairways in the Project vicinity.

Service vessels will frequent the SPM buoy system during operation for regular maintenance and tugboats will be deployed to meet vessels calling on the Project. These vessels are likely to depart from the Aransas Pass-Rockport or other nearby ports and will result in additional transits. These support vessels will be similar to existing vessels in the waters offshore of Texas. Given the level of marine traffic associated with nearby ports, commercial fishing, and recreation fishing and boating in the Project vicinity, the presence of these support vessels will not have a significant effect on the experience of recreational boating offshore of Texas.

Once installation is complete, the Offshore, Inshore, and Onshore Pipelines will be buried and as such will not impact recreational boating activities. Overall, the impact of Project operation on recreational boating will be negligible.

Recreational Fishing

Similar to recreational boating, offshore recreational fishing will be prohibited within the an approximately 1,000 m safety zone around the SPM buoy system. Because there are so many other accessible offshore fishing areas in proximity to the SPM buoy system, the loss of access to the restricted area is unlikely to cause significant direct effects on recreational offshore fishing. Given that only 2 percent of angler-effort in the vicinity of the Project occur in the EEZ off the coast of Texas, effects from operation of the SPM buoy system on recreation fishing will be negligible.

Once installation is complete, the Offshore, Inshore, and Onshore Pipelines will be buried and as such will not impede recreational fishing activities. Further, operation of pipelines is not expected to impact fishery resource population-levels (see Section 6, “Commercial and Recreational Fisheries” and Section 7, “Wildlife and Protected Species”). Overall, negative effects on recreational fishing from operation of the proposed Project will be negligible.

11.3.2.3 Aesthetics

Onshore Activities

Since the nature of the land use surrounding the onshore storage facility is primarily rural and/or vacant with limited sensitive receptors, and as Project pipelines will be buried and land re-vegetated, no impact to aesthetics and visual amenity resulting from the onshore Project activities during operation is anticipated.

Offshore Activities

The DWP terminal will be located 12.7 nm (14.6 mi) offshore and therefore will not be visible from the shore, as such, impacts to aesthetics and visual amenity resulting from the presence of the DWP terminal will be limited to offshore receptors, such as passing boat traffic. Overall, the visual impact resulting from the DWP terminal presence is anticipated to be negligible.

11.3.3 Upsets and Accidents

Upsets or accidents, such as a vessel collision or minor hydrocarbon release, may cause temporary negligible impacts to offshore commercial uses. The effects may occur for a limited period and would be naturally reversible. The potential for upsets and accidents and measures to maintain safety and security are addressed in Section 14, Safety and Security.

11.3.4 Decommissioning

At the end of its useful life, all components associated with the Project would be disassembled and brought to shore. The subsea pipelines would be removed, resulting in temporary and minor impacts similar to those discussed during construction. Once decommissioning is complete, the safety zone would no longer apply and activities that had been associated with the vicinity of the Project prior to its construction would be allowed to resume; however, fishermen and boaters may benefit from the abandoned platform, which could be used as a fishing/diving destination.

11.4 Cumulative Impacts

Cumulative effects generally refer to impacts that are additive or synergistic in nature and result from the construction of multiple actions in the same vicinity and time frame. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time. In general, small-scale projects with minimal impacts of short duration do not significantly contribute to cumulative impacts (see Volume II Introduction, Evaluation Framework, and Summary of Impacts).

Of the reasonably foreseeable projects identified, 11 of them could have effects on marine and land Use, recreation, and aesthetics that could have a cumulative impact when combined with the effects of the proposed Project. Potential cumulative impacts to land and marine use, recreation, and aesthetics are addressed below.

BOEM prepares Five-Year OCS Oil and Gas Leasing Programs to facilitate leasing of portions of the OCS for exploration and drilling, including in the Central and Western Planning Areas of the GOM (see Sections 11.2.1.2 and 11.2.1.3 for more detail). The BOEM Oil and Gas Leasing Program, 2012–2017, authorized lease bidding on 64.5 million ac in the Central Planning Area and 28.6 million ac in the Western Planning Area (BOEM 2012b). The most recent draft of the BOEM Oil and Gas Leasing Program, 2017–2022, proposes to offer all unleased blocks within the same boundaries during the upcoming five-year cycle (BOEM 2015d). These lease programs confer long-term benefits on the oil and gas industry both by permitting long-term leases on productive operations and continuously arranging bidding opportunities on unleased blocks. The proposed Project would have a negative effect on oil and gas uses by presenting an encumbrance to industry vessels that could otherwise access the safety zones to explore or drill from the surface of the water above the OCS. However, the Project's impact would be negligible considering that the OCS lease blocks adjacent would still be available for leasing and could be accessed by horizontal drilling or other technology. The beneficial impact of the BOEM Five-Year OCS Oil and Gas Leasing Programs would outweigh the impact of the Project, so that the cumulative effect on use by the oil and gas industry would be long-term and beneficial.

The PEIS for the BOEM 2012-2017 OCS Oil and Gas Leasing Program predicted it would lead to installation of 2,400 to 7,500 mi of subsea pipeline in the GOM (BOEM 2012b). Based on the BOEM 2017–2022 Five-Year Leasing Program, there has been no interest in the OCS lease blocks traversed by or immediately adjacent to the proposed offshore facilities. One active lease was identified within the Project's protraction area (Mustang Island Area Block 726), however is not intersected by the proposed Project. The other concurrent projects are not expected to install any additional offshore pipelines or submerged infrastructure, or create impacts that would obstruct installation of offshore pipeline or other submerged infrastructure. The Project proposes to install a combined length of approximately 26,300 ft. of offshore pipeline and establish a 760-ac safety zone around the SPM. Given the limited subsea infrastructure the Project would install, and the small restricted area of the Project safety zones, the Project's contribution to cumulative impacts on the ability to install or maintain offshore pipelines and other submerged infrastructure in the GOM would be negligible.

According to the NOAA Marine Cadastre, no federal OCS sand and gravel borrow areas under BOEM's purview occur within the vicinity of the Project, with the nearest federal OCS sand and gravel borrow located past Houston, over 260 mi north east of the Project. Sand leases and resources within State waters are not available through this data layer. The concurrent projects listed in the Introduction are not expected to result in negative cumulative impacts on the collection of non-energy mineral resources on the OCS.

During construction of the Project, multiple marine traffic movements are expected to occur during the 18-month construction period, once operational the Project anticipates 8 VLCC visits per month in addition to maintenance vessel visits when necessary. As shown in Figure 11-4 the proposed Project will not impede any of the shipping lanes in the vicinity of the Project. The closest shipping lane to the SPM Buoy is the Brazos Santiago Pass (about 2.9 mi east).

When combined with expected vessel service associated with construction of the other projects as identified in Table 11-12, and in combination with other projects for which the number of deliveries is not publicly known, concurrent construction of these projects will increase the number of vessels transiting the shipping/fairways lands in the Western Planning Area. While this change in vessel traffic may be noticeable for some users of the waterways in the Project vicinity, impacts on these users from vessel traffic associated with construction will be consistent with existing use of the waterway.

During operations, up to 8 very large crude carriers (VLCCs) will call on the SPM Buoy per month, or equivalent volume of smaller vessels. If all of the projects identified in the Introduction achieve in-service, then by 2022, an additional 1,200 vessels per year will be transiting the shipping/fairways lands in the Western Planning Area. Additionally, a portion of the vessel traffic in the GOM associated with oil and gas exploration and production (an increase between 860 and 10,820 vessels) could occur within the Western Planning Area. Collectively operation of these projects will increase traffic in the Western Planning Area, however, the increase in transits will be spread geographically from the Port of Brownsville to Port Arthur and throughout the GOM.

While the vessel transits to the SPM Buoy will be subject to a moving security zone during transit, as are LNG vessels in transit to the Corpus Christi LNG Terminal, cumulative impacts on vessel traffic in the Project vicinity are not likely to experience significant delays or be precluded from use of the shipping/fairways lands in the Western Planning Area. Further, safe navigation practices as established through the 1972 Convention on the International Regulations for Preventing Collisions at Sea will mitigate potential impacts from the increased vessel traffic. Any other project for which LNG vessels calls will occur, will be subject to this regulation.

Overall the proposed Project's contribution to cumulative impacts on marine transportation would be long-term and negligible, as the VLCCs and service vessels calling on the SPM Buoy will result in a nominal increase in the current vessel traffic transiting the area.

The concurrent projects listed in the cumulative impact discussion of the Introduction are not expected to result in negative cumulative impacts on military uses offshore. The Project would have a negligible impact on military uses, and the BOEM OCS Five-Year OCS Oil and Gas Leasing Program provides special instruction for coordination between OCS lessees and the armed forces to prevent and mitigate any conflicts of use.

The proposed Project will not impact ocean dredged materials sites, coastal zone habitats or coral reefs during construction or operation. Recreation activities such as fishing, diving, and boating, will not be allowed within a safety zone around construction vessels based on the established safety zone, resulting in temporarily impacts associated with displacement of these activities. Operation of the Project will result in a small restricted area associated with an approximately 1,000 m operational safety zone around the SPM Buoy. Based on the level of activity at the proposed SPM Buoy site, the Project's impact on water-based recreation will be permanent but minor.

Several cumulative effects on commercial fishing could be associated with development of offshore projects. These include a decrease in the amount of unrestricted water, a localized increase in vessel traffic, and alteration of natural viewsheds. Given the size of offshore projects relative to the GOM, these impacts are considered minor but long term.

Ongoing oil and gas exploration and production associated with BOEM leasing program will impact commercial fishing by restricting portions of the Western Planning Area that contribute to commercial fishing landings (BOEM 2017). However, since the current program is regionwide, allowing for leases of blocks within all of BOEM's planning areas³, the amount of future development and specific locations within the

³ A large portion of the Eastern Planning Area is not included in the proposed lease program as it is subject to Congressional moratorium.

Western Planning Area are not able to be predicted. Impacts from these activities may be partially offset by positive impacts on fish populations and habitat as oil and gas structures serve as artificial structures that attract fish and/or provide alternative habitat (see Section 6, “Commercial and Recreational Fisheries”).

The other projects identified in the Introduction are not expected to create significant impacts on commercial fishing, with the exception of potential indirect effects from additional vessel traffic. The cumulative impact is not expected to be more than minor, and the proposed Project’s incremental contribution to negative impacts on commercial fishing will be negligible.

Commercial fishing will not be allowed within a safety zone around construction vessels based on the established safety zone, resulting in temporarily impacts associated with displacement of these activities. Operation of the Project will result in a small restricted area associated with a 1,000 m operational safety zone around the SPM buoy system. Based on the level of activity at the proposed SPM buoy system site, and the finding fishery resource population-levels will not be impacted (see Section 6, “Commercial and Recreational Fisheries”), the Project’s impact on commercial fishing will be permanent but negligible.

Several cumulative effects on recreational boating could be associated with development of offshore projects. These include a decrease in the amount of unrestricted water, a localized increase in vessel traffic, and alteration of natural viewsheds. Given the size of offshore projects relative to the GOM, these impacts are considered minor but long term.

Structures and restricted areas associated with BOEM’s Leasing Program will also impact recreational boating during exploration, drilling, and long-term production. BOEM estimates that between 561 and 1,788 additional production structures and between 3,049 and 6,930 mi (4,907 and 11,153 km) of new pipeline are projected to be installed in the Western Planning Area over a five-year period (BOEM 2017). Further, between 740 and 1,892 structures maybe removed during this period. In aggregate, these activities will result in an increase in the number of platforms in the Western Planning Area, however these structures are likely to be located in deepwater locations farther offshore, thereby minimizing impacts on recreational boating.

The other projects identified are not expected to create significant impacts on recreational boating, with the exception of potential indirect effects from additional vessel traffic. The cumulative impact is not expected to be more than minor, and the proposed Project’s incremental contribution to negative impacts on recreational boating will be negligible.

The proposed Project would have permanent but negligible impacts on water-based recreation, primarily associated with the small 1,000 m operational safety zone around the SPM buoy system.

Cumulative effects on recreational fishing will be similar to those discussed above for recreational boating, including a decrease in the area available for recreation activities and increased vessel traffic, but also including potential cumulative impacts on fishery resource population-levels.

Ongoing oil and gas exploration and production associated with the BOEM leasing program will impact recreational fishing by restricting portions of the Western Planning Area that provide recreational fishing opportunities (BOEM 2017). As discussed above, the regionwide nature of the program does not allow predictions of the amount of future development or identification of specific locations within the Western Planning Area. However, recreational fishing in the vicinity of the Project is predominately from shore which aids in minimizing impacts on recreational fishing. Also, impacts from oil and gas exploration and production may be partially offset by positive impacts on fish populations and habitat as oil and gas structures serve as artificial structures that attract fish and/or provide alternative habitat (see Section 6, “Commercial and Recreational Fisheries”).

Recreational fishing will not be allowed within a safety area surrounding the construction vessels based on the established safety zone, resulting in temporarily impacts associated with displacement of these activities. Operation of the Project will result in a small restricted area associated with a 1,000 m operational

safety zone around the SPM buoy system. Based on the level of activity at the proposed SPM buoy system site, and the finding fishery resource population-levels will not be impacted (see Section 6, “Commercial and Recreational Fisheries”), the Project’s impact on recreational fishing will be permanent but negligible.

As discussed in Appendix A, onshore facilities to support construction activities, including contractors’ office and fabrication sites, will be located at the point of fabrication or within existing disturbed area. Temporary disturbance of nearby onshore recreational fishing areas will be associated with on-shore and nearshore installation of the pipelines. Even if the proposed Project is built at the same time as other projects in Nueces County, cumulative impacts on recreational fishing are not expected, as activities associated with the other projects are sufficiently removed from the vicinity of the Project. Once installation is complete, the Offshore and Inshore Pipelines will be buried and as such will not impede recreational fishing activities.

There are no offshore terminals in BOEM’s Western Planning Area. Currently the only offshore terminal in operation within the GOM is the Louisiana Offshore Oil Port, which is located in BOEM’s Central Planning Area (BOEM 2017). Since this port is outside the geographic range of the proposed Project, it is excluded from our cumulative impact analysis. The shared use of the GOM for industrial and recreational activity historically has been permitted in the region for approximately 65 years. It is unlikely that the additional installation of the Project would cause a significant visual impact that is inconsistent with the typical views in the GOM. Overall, the cumulative effect of the concurrent projects on the viewshed in the region of the Gulf shared by the Project would be negligible.

11.5 Mitigation Measures

The selection of the Project facility-type and the proposed site location was made to avoid and minimize potential impacts on marine uses or aesthetics. Those considerations, as well as certain other mitigation measures that would be implemented when installation and operation begins, are summarized below:

Site selection: A number of alternative Project locations were considered prior to the selection of the proposed Project location and pipeline route. During the alternatives review and selection process, consideration was given to the avoidance of sensitive resources, such as sensitive and protected ecological areas and residential areas. Section 2 (Alternative Analysis) of this report offers detailed information regarding the site selection and alternatives review.

Stakeholder Consultation: During Project installation/commissioning, the Applicant will communicate with the USCG and USACE Navigation Branch, and federal pilots regarding offshore Project installation activities. Prior to commencing installation, the Applicant will communicate with the appropriate USCG personnel to ensure a Notice to Mariners is issued prior to any installation activity. The Notice to Mariners would alert vessel captains ahead of time about the location of the Project’s temporary installation activities and the exact coordinates of restricted-access temporary safety zones around each installation site. Working vessels could also issue very high frequency (VHF) radio broadcasts, as needed, to alert passing vessels about the presence of temporary safety zones around each site of active installation. The temporary safety zones, themselves, would be mitigation measures to temporarily segregate marine uses in the area and prevent collisions, accidents, or other undesired interactions between Project installation activities and non-Project commercial or recreational vessel transits. The mitigation measures employed during decommissioning would be nearly identical to those used during installation, though the duration of decommissioning would be much shorter than installation/commissioning.

Horizontal Directional Drilling (HDD): To minimize potential impacts to coastal resources, the coastal crossing of the offshore pipelines will be completed using HDD, as described within Appendix A.

Best Management Practices (BMPs):

- *Restoration:* Once the pipeline installation is complete, the pipeline ROW will be returned to pre-construction contours and vegetated state.

- *Dust Suppression:* excavation of onshore and inshore trenches on North Padre Island will employ industry standard BMPs to prevent dust, erosion, and storm water pollution.
- *Lighting Limitations:* lighting will be limited to workspace areas and only the minimum necessary to maintain safe working conditions during 24-hr construction operations.
- *Any other BMPs as required by the USACE permit.*

Plug and Abandon of Existing Pipeline: With the owner’s permission, the one existing pipeline to be crossed by the proposed Project pipeline will be plugged and a section be cut to allow for the proposed offshore pipeline to be installed below the seafloor. If the current owner cannot be contacted for permission, the existing pipeline will be treated as if it is a currently operational line.

11.6 Summary of Potential Impacts

Table 11-12: Summary of Potential Impacts to Coastal Zone Uses, Recreation, and Aesthetics

Project Phase	Impact	Duration	Significance	Mitigation
Construction	Onshore Land Use: Change in land use due to Project storage facility footprint.	Permanent	Minor	Site selection: Current land use has been taken into consideration in the site selection for the onshore elements of the Project so that land of high ecological, cultural, and/or economic value is avoided.
Construction	Onshore Land Use: Change in land use due to onshore pipeline.	Permanent	Minor	Site selection: Current land use has been taken into consideration in the site selection for the onshore elements of the Project so that land of high ecological, cultural, and/or economic value is avoided. BMPs: Once the pipeline crossing is complete, the pipeline will be buried and the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the BLM or the landowner will be returned to a vegetated state.
Construction	Offshore Oil and Gas Activity: Potential physical adverse impacts to offshore oil and gas activity as a result of Project construction transecting existing offshore oil and gas activity.	Permanent	No Impact	Site selection: Locations of existing offshore oil and gas activities have been taken into consideration in the site selection for the offshore elements of the Project so that existing offshore oil and gas activities are avoided.
Construction	Offshore Pipelines or Other Submerged Infrastructure: The proposed offshore pipeline will transect one existing, currently non-operational, pipeline.	Permanent	Negligible	With the owner’s permission the existing pipeline to be plugged and a section be cut to allow for the proposed offshore pipeline to be installed below the seafloor. If the current owner cannot be contacted for permission the existing pipeline will be treated as if it is a currently operational line.

Project Phase	Impact	Duration	Significance	Mitigation
Construction	Other OCS Non-Energy Minerals Resources: Disturbance to the OCS non-energy minerals resources due to Project installation and commissioning.	Temporary	No Impact	Site selection: Locations of OCS non-energy minerals lease areas have been taken into consideration in the site selection of the Project so that OCS non-energy minerals lease areas are avoided.
Construction	Marine Shipping and Commercial Ports: Marine vessels that would otherwise transit in the vicinity of the Project will be forced to navigate around Project safety zones, increasing time taken for the vessel to reach their destination.	Temporary	Negligible	Stakeholder Consultation: The Applicant will communicate Project safety zone boundaries and construction periods with Stakeholders including the POCC and local marine users.
Construction	Military Use: Any military activities that occur during construction or after installation and commissioning of the Project would have the added benefit of a new feature/activity within the landscape that would provide an additional element of interest on the landscape for military operations and training in the area.	Temporary	Negligible	Stakeholder Consultation: The schedule of Project construction activities will be coordinated and communicated with area ports, USCG, and other military branches, as directed.
Construction	Lightering Zones: Adverse impacts to lightering zones due to Project construction/introduction of additional marine traffic due to Project construction.	Temporary	No Impact	Site selection: Locations of Lightering Zones have been taken into consideration in the site selection of the Project so that Lightering Zones are avoided.
Construction	Coastal Zones: Adverse impacts to coastal land use, recreation, and aesthetics as a result of pipeline construction.	Temporary	Negligible	Installation of the coastal crossing of the offshore pipelines using HDD.
Construction	Protected Offshore Habitats: Adverse impacts to protected coastal and offshore habitats, such as marine managed areas, EFH, and coral reef, due to Project construction.	Temporary/Permanent	No Impact	Site selection: Locations of protected offshore habitats have been taken into consideration in the site selection of the Project so that protected offshore habitats are avoided.
Construction	Dredged Material Discharge Zones: Adverse impacts to ODMDS due to Project construction.	Temporary	No Impact	Site selection: Locations of ODMDS have been taken into consideration in the site selection of the Project so that ODMDS are avoided.
Construction	Commercial Fishing: Displacement of commercial fishing within the temporary safety zone.	Temporary	Minor	Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fisherman so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.

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Project Phase	Impact	Duration	Significance	Mitigation
Construction	Recreational use of Parks and Beaches: Adverse impacts to coastal land use, recreation, and aesthetics as a result of pipeline construction.	Temporary	Negligible	Installation of the coastal crossing of the offshore pipelines using HDD.
Construction	Recreational Boating: Displacement of recreational boating within the temporary safety zone.	Temporary	Negligible	Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational boaters so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Construction	Recreational Fishing: Displacement of recreational fishing within the temporary safety zone.	Temporary	Negligible	Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational fishermen so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project. Installation of the offshore pipelines at the Intracoastal Waterway using HDD to allow fishermen unrestricted access to other portions of Laguna Madre.
Construction	Aesthetics - Onshore Activities: Adverse impact to viewshed due to presence of trucks, dust, temporary employees, and other construction activities.	Temporary	Minor	Site selection: Current land use and proximity of sensitive receptors (such as residential areas) were taken into consideration in the site selection for the onshore elements of the Project so that land of high aesthetic value is avoided and the proximity of sensitive receptors minimized. BMPs: Construction BMPs (such as dust suppression and construction lighting limitations) will be implemented at the onshore Project site. BMPs: Once the pipeline crossing is complete, the pipeline will be buried and the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the BLM or the landowner will be returned to a vegetated state.
Construction	Aesthetics - Offshore Activities: Adverse Impact to ocean-scape or viewshed due to presence of offshore	Temporary	Minor	Site selection: Due to its distance from the shoreline, the DWP terminal will not be visible from the shore.

Project Phase	Impact	Duration	Significance	Mitigation
	construction activities and construction marine traffic.			BMPs: Construction BMPs (such as construction lighting limitations) will be implemented to minimized visual impacts to marine users.
Operation	Onshore Land Use: Change in land use due to Project storage facility footprint.	Permanent	Minor	Site selection: Current land use has been taken into consideration in the site selection for the onshore elements of the Project so that land of high ecological, cultural, and/or economic value is avoided.
Operation	Onshore Land Use: Change in land use due to onshore pipeline.	Permanent	Minor	Site selection: Current land use has been taken into consideration in the site selection for the onshore elements of the Project so that land of high ecological, cultural, and/or economic value is avoided. BMPs: Once the pipeline crossing is complete, the pipeline will be buried and the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the BLM or the landowner will be returned to a vegetated state.
Operation	Offshore Oil and Gas Activity: Potential physical adverse impacts to offshore oil and gas activity as a result of Project construction transecting existing offshore oil and gas activity.	Permanent	No Impact	Site selection: Locations of existing offshore oil and gas activities have been taken into consideration in the site selection for the offshore elements of the Project so that existing offshore oil and gas activities are avoided.
Operation	Offshore Pipelines or Other Submerged Infrastructure: The proposed offshore pipeline will transect one existing, currently non-operational, pipeline.	Permanent	No Impact	With the owner's permission the existing pipeline to be plugged and a section be cut to allow for the proposed offshore pipeline to be installed below the seafloor. If the current owner cannot be contacted for permission the existing pipeline will be treated as if it is a currently operational line.
Operation	Other OCS Non-Energy Minerals Resources: Disturbance to the OCS non-energy minerals resources due to Project presence.	Permanent	No Impact	Site selection: Locations of OCS non-energy minerals lease areas have been taken into consideration in the site selection of the Project so that OCS non-energy minerals lease areas are avoided.
Operation	Marine Shipping and Commercial Ports: Marine vessels that would otherwise transit in the vicinity of the Project will be forced to navigate around Project safety	Permanent	Negligible	Stakeholder Consultation: The Applicant will communicate Project safety zone boundaries with Stakeholders including the POCC and local marine users.

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Project Phase	Impact	Duration	Significance	Mitigation
	zones, increasing time taken for the vessel to reach their destination.			
Operation	Military Use: The Project would have the benefit of a new feature/activity within the landscape that would provide an additional element of interest on the landscape for military operations and training in the area, however once the Project becomes a known element in the area, this benefit will cease.	Temporary	Negligible	N/A
Operation	Lightering Zones: Adverse impacts to lightering zones due to Project presence.	Permanent	No Impact	Site selection: Locations of Lightering Zones have been taken into consideration in the site selection of the Project so that Lightering Zones are avoided.
Operation	Coastal Zones: Due to the removed location of the onshore and offshore facilities, and buried nature of the pipeline, once operational the Project is anticipated to have a negligible impact to coastal zones.	Permanent	No Impact	N/A
Operation	Protected Offshore Habitats: Adverse impacts to protected coastal and offshore habitats, such as marine managed areas, EFH, and coral reef, due to Project operation/presence.	Permanent	No Impact	Site selection: Locations of protected offshore habitats have been taken into consideration in the site selection of the Project so that protected offshore habitats are avoided.
Operation	Dredged Material Discharge Zones: Adverse impacts to ODMDS due to Project presence.	Permanent	No Impact	Site selection: Locations of ODMDS have been taken into consideration in the site selection of the Project so that ODMDS are avoided.
Operation	Commercial Fishing: Displacement of commercial fishing within the Project safety zone.	Permanent	Negligible	Stakeholder Consultation: The location of the Project safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fisherman so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Operation	Recreational use of Parks and Beaches: Once operational the Project is anticipated to have a negligible impact to recreational parks and beaches.	Permanent	No Impact	N/A
Operation	Recreational Boating: Displacement of recreational boating within the Project safety zone.	Permanent	Negligible	Stakeholder Consultation: The location of the Project safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational

Project Phase	Impact	Duration	Significance	Mitigation
				boaters so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Operation	Recreational Fishing: Displacement of recreational fishing within the Project safety zone.	Permanent	Negligible	Stakeholder Consultation: The location of the Project safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational fishermen so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Operation	Aesthetics - Onshore Activities: Adverse impact to viewshed due to presence onshore storage facility.	Permanent	Negligible	Site selection: Current land use and proximity of sensitive receptors (such as residential areas) were taken into consideration in the site selection for the onshore elements of the Project so that land of high aesthetic value is avoided and the proximity of sensitive receptors minimized.
Operation	Aesthetics - Offshore Activities: Adverse Impact to ocean-scape or viewshed due to presence of DWP terminal.	Permanent	Negligible	Site selection: Due to its distance from the shoreline, the DWP terminal will not be visible from the shore. BMPs: BMPs (such as lighting limitations) will be implemented to minimized visual impacts to marine users.
Decommissioning	Impacts to coastal zone uses, recreation, and aesthetics during Project decommissioning	Temporary	Minor to Negligible	BMPs
Cumulative	Impacts to coastal zone uses, recreation, and aesthetics during Project construction	Temporary	Negligible	Site selection; BMPs; and HDD.
Cumulative	Impacts to coastal zone uses, recreation, and aesthetics during Project operation	Permanent	Negligible	Site selection and BMPs.

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