

DEEPWATER PORT LICENSE APPLICATION FOR THE BLUEWATER SPM PROJECT

VOLUME II – ENVIRONMENTAL EVALUATION

Section 12 - Coastal Zone Use, Recreation, and Aesthetics

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LIST OF ACRONYMS

ac	acre
ACCRI	Aransas County Coastal Resiliency Initiative
BMP	best management practices
BOEM	Bureau of Ocean Energy Management
BWTT	Bluewater Texas Terminal, LLC
CCSC	Corpus Christi Ship Channel
CFR	Code of Federal Regulations
CMP	Texas Coastal Management Program
CNATRA	Chief of Naval Air Training
CWA	Clean Water Act of 1977
CZMA	Coastal Zone Management Act of 1972
DWP	Deepwater Port
DWPA	Deepwater Port Act
DWPL	Deepwater Port License
E.O.	Executive Order
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EIS	environmental impact statement
FR	Federal Register
ft	feet
GLO	Texas General Land Office
GOM	Gulf of Mexico
ha	hectare
HAPC	habitat areas of particular concern
HDD	horizontal directional drill
km	kilometer
LEDPA	Least Environmentally Damaging Practicable Alternative
LNG	liquefied natural gas
m	meter
MARAD	Maritime Administration
mi	mile
MMA	Marine Managed Area
MPA	Marine Protected Area
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act of 1969
nm	nautical mile
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
ODMDS	Ocean Dredged Material Disposal Site
OPAREA	Operating Area
OSCLA	Outer Continental Shelf Lands Act of 1953
P.L.	Public Law
PINS	Padre Island National Seashore
POCC	Port of Corpus Christi
PPA	Pollution Prevention Act of 1990
Project	Bluewater SPM Project
RBSSA	Redfish Bay State Scientific Area
RHA	U.S. Rivers and Harbors Act of 1899
ROW	right-of-way
SCUBA	self-contained underwater breathing apparatus
SLA	Submerged Lands Act of 1953
SPM	single point mooring
sq	square
TPWD	Texas Park and Wildlife Department
U.S.	United States [of America]
U.S.C.	United States Code
UP	Union Pacific
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
VHF	very high frequency
VLCC	very large crude carriers
W-228	Warning Area 228 A

12 Coastal Zone Use, Recreation and Aesthetics

This section discusses the existing coastal zone use, recreation and aesthetics conditions within the vicinity of the Proposed Project and the Alternative Project, and the anticipated environmental impacts associated with the construction, operation, and decommissioning of the proposed Bluewater Single Point Mooring (SPM) Project (Project) and the Alternative Project. The detailed description of the Proposed and Alternative Project and the framework for the evaluation of environmental impacts is provided in Section 3: Project Description and Framework for Environmental Evaluation.

This section describes the existing commercial and recreational activities that typically occur within the vicinity of the Project, as well as the current aesthetic conditions within proximity of the Proposed Project, and the anticipated environmental consequences associated with the proposed and Alternative Projects.

12.1 Applicable Laws and Regulations

Bluewater Texas Terminal, LLC (BWTT) has reviewed the following laws and statutes that relate to coastal zone use, recreation and aesthetics and provided a list of applicable regulations required to comply with the Deepwater Port Act (DWPA) during construction and operation of the Proposed Project: Coastal Zone Management Act (CZMA) of 1972 administered by the National Oceanic and Atmospheric Administration (NOAA), DWPA administered by the Maritime Administration (MARAD), Submerged Lands Act administered by NOAA, Outer Continental Shelf Lands Act administered by the Bureau of Ocean Energy Management (BOEM), and Section 10 of the Rivers and Harbors Appropriation Act of 1899 administered by the U.S. Army Corps of Engineers (USACE), and the National Environmental Protection Agency (NEPA), Public Law (P.L. 91–190, 42 U.S. Code [U.S.C.] 4321, et. seq). A summary of each is found herein.

12.1.1 Local

12.1.1.1 Port Aransas Coastal Management Plan

In 1995, Port Aransas adopted its Coastal Management Plan that establishes goals for managing and regulating human impacts on the beach and dune systems within city limits (Port of Aransas 1995).

12.1.1.2 Aransas County Coastal Resiliency Initiative

Aransas County works to coordinate funding efforts to support initiatives outlined in its Coastal Resiliency Initiative (ACCRI). The ACCRI focuses on projects, programs, and policies in three areas: the environment (e.g., restoration, conservation, protection), economics (e.g., job creation, promote tourism), and community (e.g., public support/participation).

12.1.1.3 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 and was financed in part by a Community Development Block Grant from the United States (U.S.) Department of Housing and Urban Development and a Metropolitan Planning Organization grant from the Federal Highway Administration. The Plan's goal is to "...guide the transformation of the Mustang/Padre Island area into a world-renowned tourist, resort and residential community. The City will encourage the highest development standards within the area's boundaries to create a unique "sense of place." Economic development and growth will be tempered with common sense and environmental sensitivity to the significant coastal natural resources on the Islands." The Plan recommendations are intended to assure City support and are not intended to substitute or establish an overlap or duplication of authority. Recommendations within the Plan are being implemented by the City and additional governmental agencies including: USACE, Nueces County, and the State of Texas.

12.1.2 State

12.1.2.1 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 General Land Office (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 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 Deepwater Port License (DWPL) Application.

12.1.3 Federal and International

12.1.3.1 Coastal Zone Management Act of 1972

As set forth in the CZMA (16 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 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 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).

12.1.3.2 Deepwater Port Act of 1974

Section 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 12.1.3.1 above.

12.1.3.3 Submerged Lands Act

The Submerged Lands Act (SLA) of 1953 identifies the jurisdictional boundary between state and federal lands submerged beneath the Gulf of Mexico (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 3.0 nautical miles (nm) (3.5 miles [mi] [5.6 kilometers (km)]) from the coastline into the GOM (or to three marine leagues (9.0 nm [10.4 mi (14.5 km)]) offshore of Texas and the Gulf Coast of Florida) (43 U.S.C. Section 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 200.0 nm (230.2 mi [321.9 km]) from the coastline depending on the proximity of neighboring coastal nations. The Texas GLO 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 CZMA CMP with the Texas GLO.

12.1.3.4 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.

12.1.3.5 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 seafloor 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.

12.1.3.6 National Environmental Policy Act

The 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 U.S. Coast Guard (USCG) would initiate the NEPA process and have federal jurisdiction over the entire Project under NEPA. The USCG and MARAD have determined that an environmental impact statement (EIS) will be prepared to support the NEPA process.

12.2 Proposed Project

12.2.1 Proposed Project Area

12.2.1.1 Commercial and Recreational Environment Study Area

The extent of the commercial and recreational environment which could potentially be impacted by a project extends further than a project's footprint, and as such it is important to identify a study area which adequately reflects this. For this Project the study area includes the Texas Coastal Bend, a region referenced for both economic development and tourism and consisting of five counties (Aransas, San Patricio, Nueces, Kleberg, and Kenedy Counties), and neighboring counties Refugio and Calhoun.

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. The Project lies entirely within the Texas Coastal Bend, with components located onshore, near shore and offshore waters of the GOM, however, due to the Project being located close to Refugio and Calhoun counties, these two counties have also been included in the examined study area. Throughout this commercial and recreational resources impact assessment, when referenced, the 'study area' will refer to the seven counties: Aransas, San Patricio, Nueces, Kleberg, Kenedy, Refugio and Calhoun, as depicted in Figure 12-1.

This area is known for its fishing, birding, the Padre Island National Seashore (PINS), the energy industry, as well as its commercial and private boating. Most of the cities that are located in the study area are small in scale and population, as the study area offers more of a rural lifestyle. Corpus Christi is the largest city in the study area at 325,605 persons (estimated for 2017 [Census 2019a,b]).

12.2.1.2 Aesthetic Environment Study Area

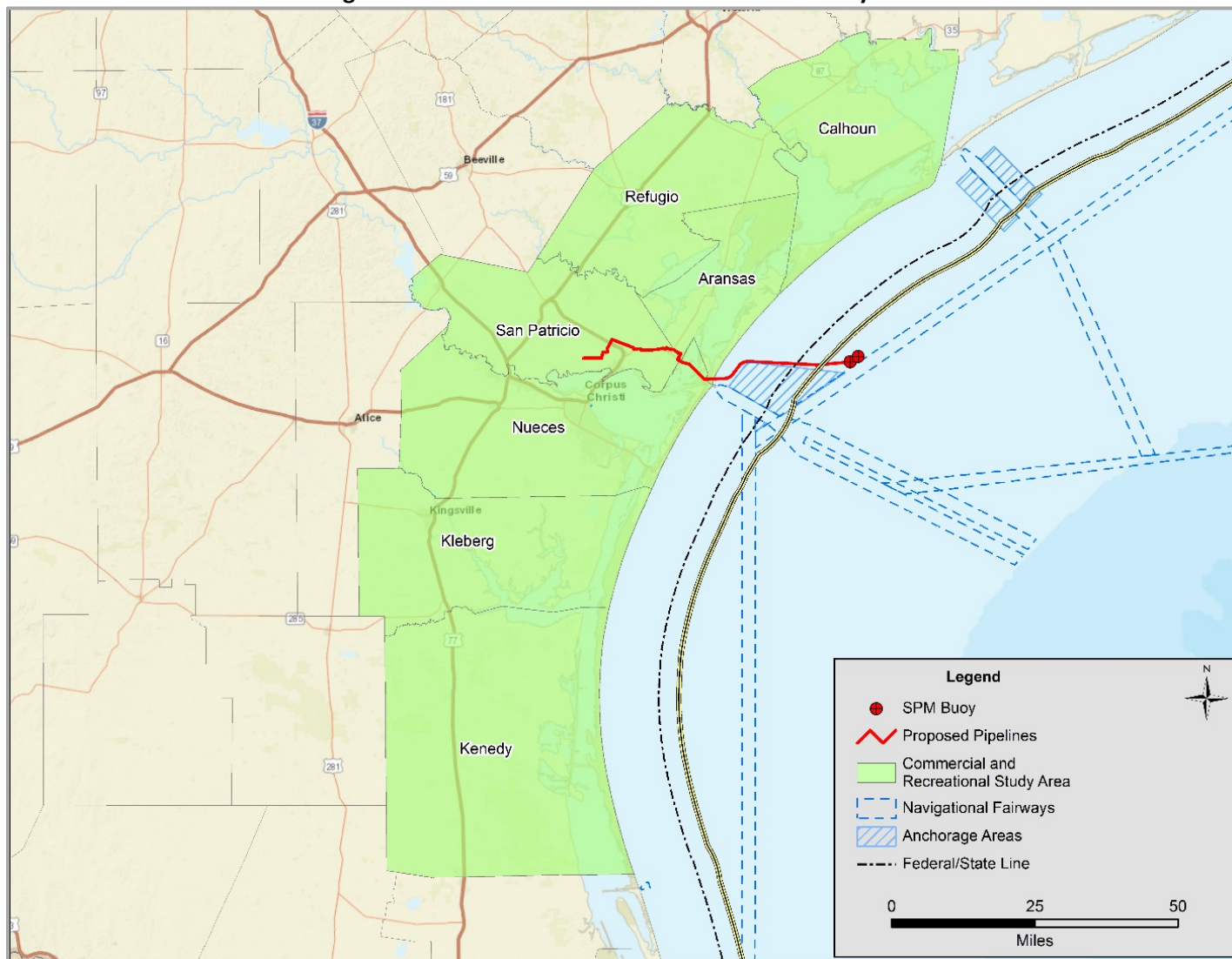
An aesthetic environment is highly dependent upon visual amenity. The aesthetic quality of an area can only be appreciated when that area is seen. As such, the study area for this aesthetic environment assessment was limited to an area within which the Proposed Project or its impacts could be seen.

Visual receptors of the Proposed Project, that is, those who could potentially view the Proposed Project during their regular activities, could include:

- Residents/residential areas within close proximity to the Proposed Project;
- Building users – those who occupy other buildings within the vicinity of the Proposed Project (such as factories, shops, schools, etc.);
- Recreational users – For onshore elements of the Proposed Project this could include users such as those hiking, walking or biking in the vicinity of the Proposed Project. For the nearshore and offshore elements of the Proposed Project, this could include recreational boaters, surfers, beach goers, etc.;
- Workers – For onshore elements of the Proposed Project this could include workers such as farmers. For the nearshore and offshore elements of the Proposed Project, this could include commercial boat users;
- Road users – those utilizing local roadways; and,
- Wildlife and livestock - where potential changes in visual amenity, especially regarding artificial lighting during construction, could hold the potential for changes in livestock behavior.

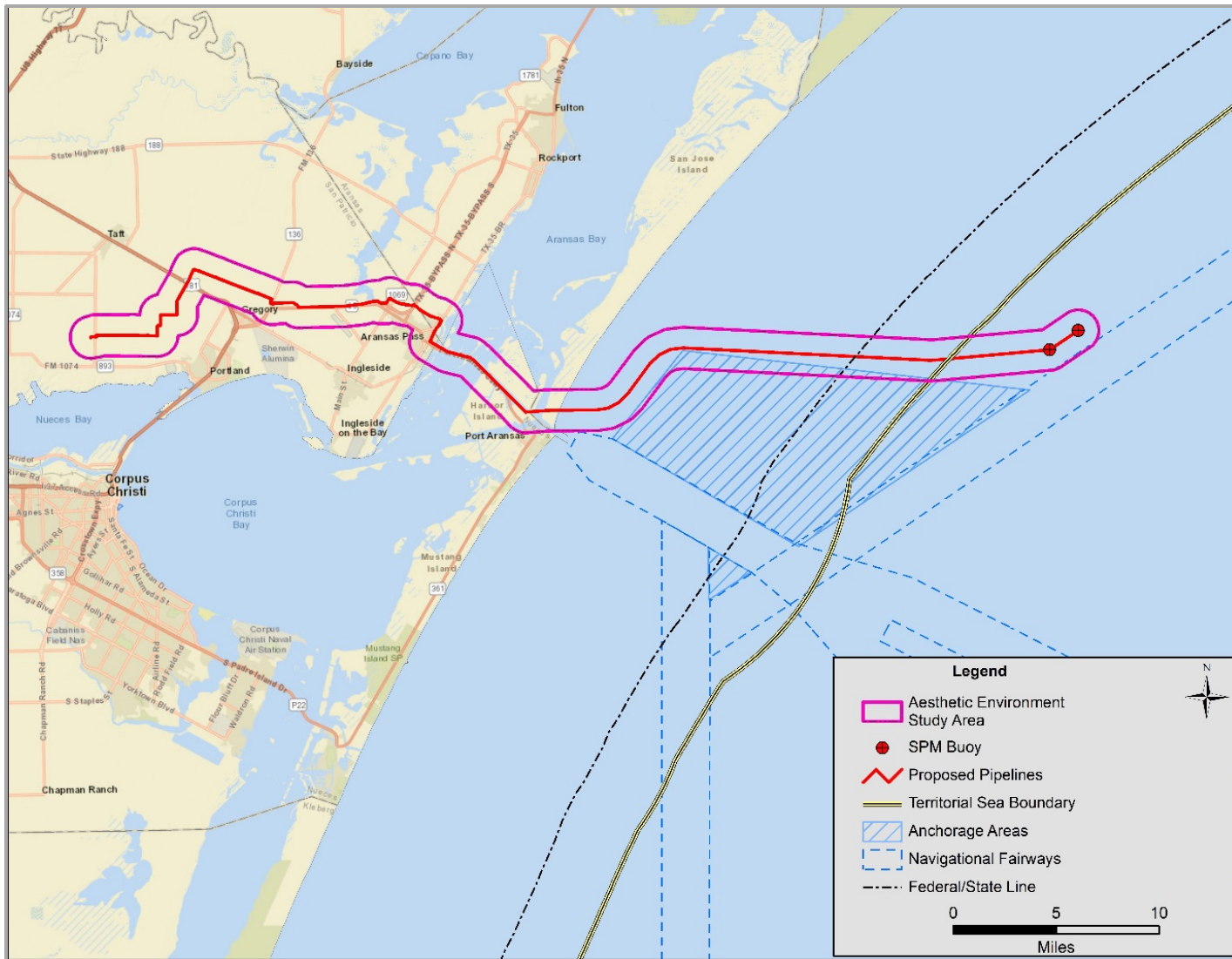
To account for the varied potential visual receptors for this aesthetic environment assessment, the study area was comprised of an area 1 mi (1.6 km) from the boundary of the Proposed Project footprint, as depicted in Figure 12-2.

Figure 12-1: Commercial and Recreational Study Area



Source: BOEM 2019a

Figure 12-2: Aesthetic Environment Study Area



Sources: BOEM 2019a

12.2.2 Proposed Project Existing Conditions

The following subsections provide information to characterize the current general commercial, recreational, and aesthetic environment for the Proposed Project. The Proposed Project is discussed in terms of its Offshore, Inshore and Onshore Components. The Offshore Pipelines will traverse the coast of San Jose Island and terminate at the SPM buoys, which will be located in depths of 88.5 to 89.5 feet (ft) (27.0 to 27.3 meters [m]), about 17.0 mi (27.4 km) from the closest onshore point. The Inshore Pipelines will occur in estuarine and marine waters between Redfish Bay and San Jose Island, opposite the City of Aransas Pass and including Aransas Channel and includes the Harbor Island Booster Station. The Onshore Pipelines will commence at the planned multi-use terminal located south of Taft in San Patricio County, Texas, traversing east towards Gregory and continuing on through Aransas Pass, Texas, transitioning into the Inshore Pipelines at the shore of the mainland.

12.2.2.1 Onshore

12.2.2.1.1 LAND USE

The land use in the vicinity of the Onshore Pipelines is generally agricultural, with the exception of the approximately 4 mi (6.4 km) closest to the mainland shoreline where the Onshore Pipelines are located in an urban area (Figure 12-3; Source: BOEM 2019a).

From the far western extent of the Proposed Project, the Onshore Pipelines travel east along an existing right-of-way (ROW), through agricultural land and wind farms; the Onshore Pipelines' ROW then continues northeast, before passing Gregory approximately 1 mi (1.6 km) to its north, and moving directly east, continuing through agricultural pasture. Once the Onshore Pipelines are approximately 0.7 mi (1.1 km) northwest of The Falman Colonia, the Onshore Pipelines then turn southeast and travel through an agricultural and rural residential setting on the northeastern outskirts of Aransas Pass until they are approximately 0.5 mi (0.8 km) from the coastline. There they turn southwest and traverse parallel to the Union Pacific (UP) railway in a vegetated ROW within an urban setting on the outskirts of Aransas Pass City, until the Onshore Pipelines enter an area of light industry and finally turn southeast and towards the shoreline.

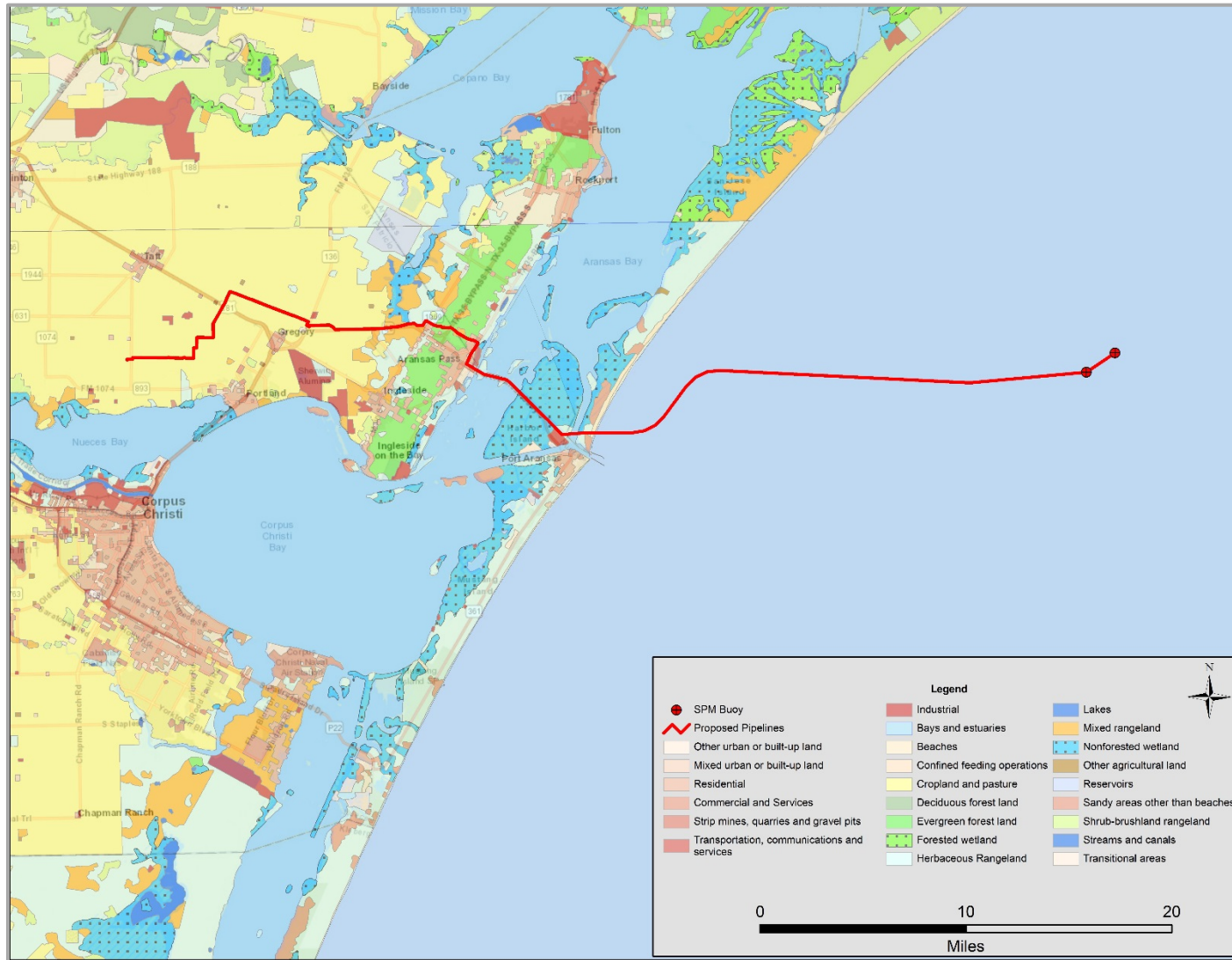
12.2.2.1.2 RECREATION

Within the vicinity of the proposed Onshore Pipelines there are multiple public recreation parks, RV parks and campsites, hotels, and hike and bike trails, with the closest (Newbury Park) located about 0.5 mi (0.8 km) away north of the Onshore/Inshore Pipelines connection. The majority of the recreation facilities within the study area are focused to the south along the shoreline and are geared towards day and weekend tourism, rather than purely local resident recreation.

12.2.2.1.3 AESTHETICS

The majority of the Onshore Pipelines traverse agricultural pasture land with limited visual receptors consisting mainly of rural workers and passing traffic. As the Onshore Pipelines move towards the GOM and pass to the east of The Falman Colonia, the proposed Onshore Pipelines pass within 300 ft (91.4 m) of rural residential and mobile homes. The current view from these homes in the direction of the proposed Onshore Pipelines is rural, with some vegetation, tree coverage, additional homes, roadways, and powerlines. As the Onshore Pipelines move on towards the shoreline and the eastern extent of the City of Aransas Pass and turn to travel parallel to the Gulf, the Pipelines traverse within a vegetated ROW alongside a railway, with limited visual receptors, until reaching an area of light industry where visual receptors are likely to be limited to workers within the industrial area, and then finally turning towards the Gulf and starting the inshore element of the Proposed Project.

Figure 12-3: Land Cover



Source: U.S. Geological Survey (USGS) 2019

12.2.2.2 Inshore

12.2.2.2.1 COASTAL ZONE USE

The Inshore Pipelines would cross the southern portion of San Jose Island, a barrier island located adjacent to Aransas Pass and the Mission-Aransas National Estuarine Research Reserve. San Jose Island is a privately-owned island that is managed principally for wildlife. The public is only allowed on beach areas, below the vegetation line; however, vehicles are prohibited (Port Aransas Chamber of Commerce and Tourist Bureau 2019).

Two smaller islands between San Jose Island and the mainland would also be crossed (Harbor Island and Stedman Island). Harbor Island is directly behind San Jose Island and is accessible from multiple named channels, one of which (Aransas Channel) splits the island into two halves. Harbor Island is zoned for industrial activity and is home to oil and gas facilities (Port of Corpus Christi [POCC] 2019a). Stedman Island is a smaller island between Harbor Island and the mainline, which is traversed by Texas State Highway 361 and powerlines, and is also home to oil and gas facilities.

The Redfish Bay State Scientific Area (RBSSA) encompasses the majority of the inshore waters between the inland side of San Jose Island and the mainland, and is bounded to the west and east by the Corpus Christi Channel and Aransas Bay, respectively. The RBSSA, which also includes South Bay, is designated as a State Scientific Area due to the approximately 32,000 acres (ac) (12,950 hectares [ha]) of biologically sensitive communities including seagrass beds, oyster reefs, marshes, and mangroves (Texas Parks and Wildlife Department [TPWD] 2019a,b). Due to the presence of seagrasses and the potential for long-term scarring from propeller scars, TPWD recommends the use of airboats, johnboats, shallow water boats, or trolling motors when traversing shallow waters. Although anchoring is allowed in the area, it is illegal to allow the uprooting of any seagrass plants by submerged propeller (TPWD 2019a). The Inshore Pipelines will cross the RBSSA for a total of 6.5 mi (10.5 km); however, all open water areas will be crossed using horizontal directional drill (HDD).

At the crossing of the Redfish Bay Causeway there are eight active BOEM oil and gas leases (see Figure 12-4 and Section 12.2.2.2.4 for further discussion).

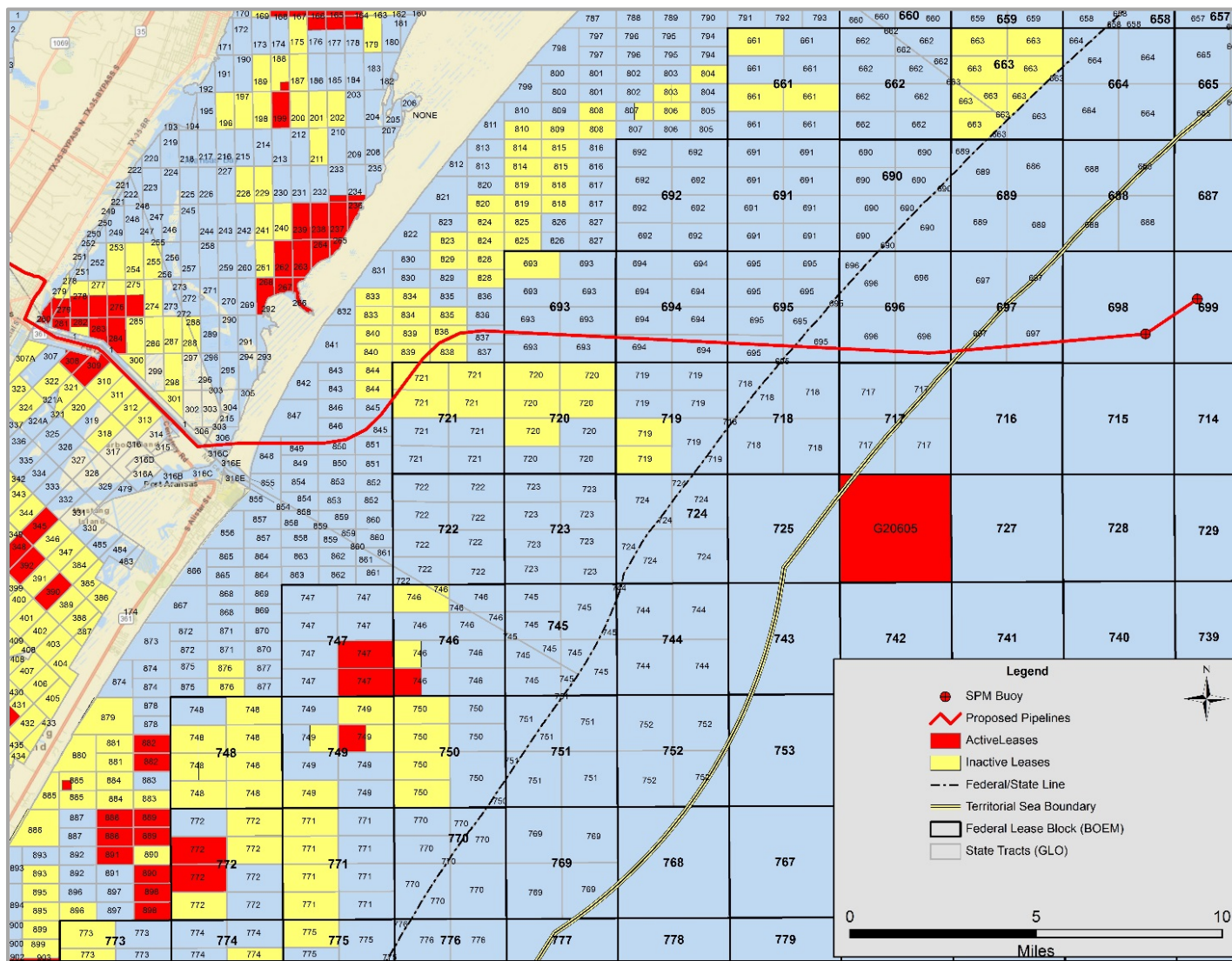
12.2.2.2.2 RECREATION

The waters of Redfish Bay and other saltwater grass flats within the vicinity of the Proposed Project are popular with tourists and local residents for recreation activities such as kayaking, wade fishing, fly fishing, paddling, birding, and boating opportunities. Directly within the footprint of the Proposed Project is Conn Brown Harbor, a popular harbor and boat launch located to the north of where the Inshore Pipelines meets the Onshore Pipeline.

The Proposed Project crosses San Jose Island, a privately-owned island, managed principally for wildlife, access to the island is permitted but only on public land which consists primarily of the island beaches located below the vegetation line. The beaches are popular with both locals and tourists for relaxing, birding, shelling, fishing, and beach combing. Beaches are further discussed above under Coastal Zone Use in Section 12.2.2.2.1 (Port Aransas Chamber of Commerce and Tourist Bureau 2019).

Elsewhere in the study area, the beaches of Port Aransas on Mustang Island are also very popular. There are three main beaches in Port Aransas. Starting at the northern most point of Mustang Island is the Port Aransas South Jetty. Moving along the beach to the south (towards North Padre Island) is the Nueces County Beach called IB Magee Beach. Continuing south takes beach visitors past Beach Access Road 1 then past Beach Access Road 2 some 11 mi (17.7 km) later.

Figure 12-4: Lease Blocks Intersected by the Proposed Project



Source: BOEM 2019a, General Land Office Texas (GLO TX) 2019.

12.2.2.2.3 AESTHETICS

The location of the Inshore Pipelines is relatively flat, and an area visited for its natural beauty and wildlife. Views in the vicinity of the Inshore Pipelines are coastal and the Inshore Pipelines' ROW could be viewed by people located on neighboring beaches or in boats. The area is utilized by tourists, nature enthusiasts, and for fishing and bird watching. As such, the aesthetics of the location are greatly appreciated by those who visit the area, and highly sensitive visual receptors are common place.

12.2.2.2.4 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

Eight active leases were identified within the immediate vicinity of the Inshore Pipeline, however no active leases are crossed by the Proposed Project (Figure 12-4) (BOEM 2019a).

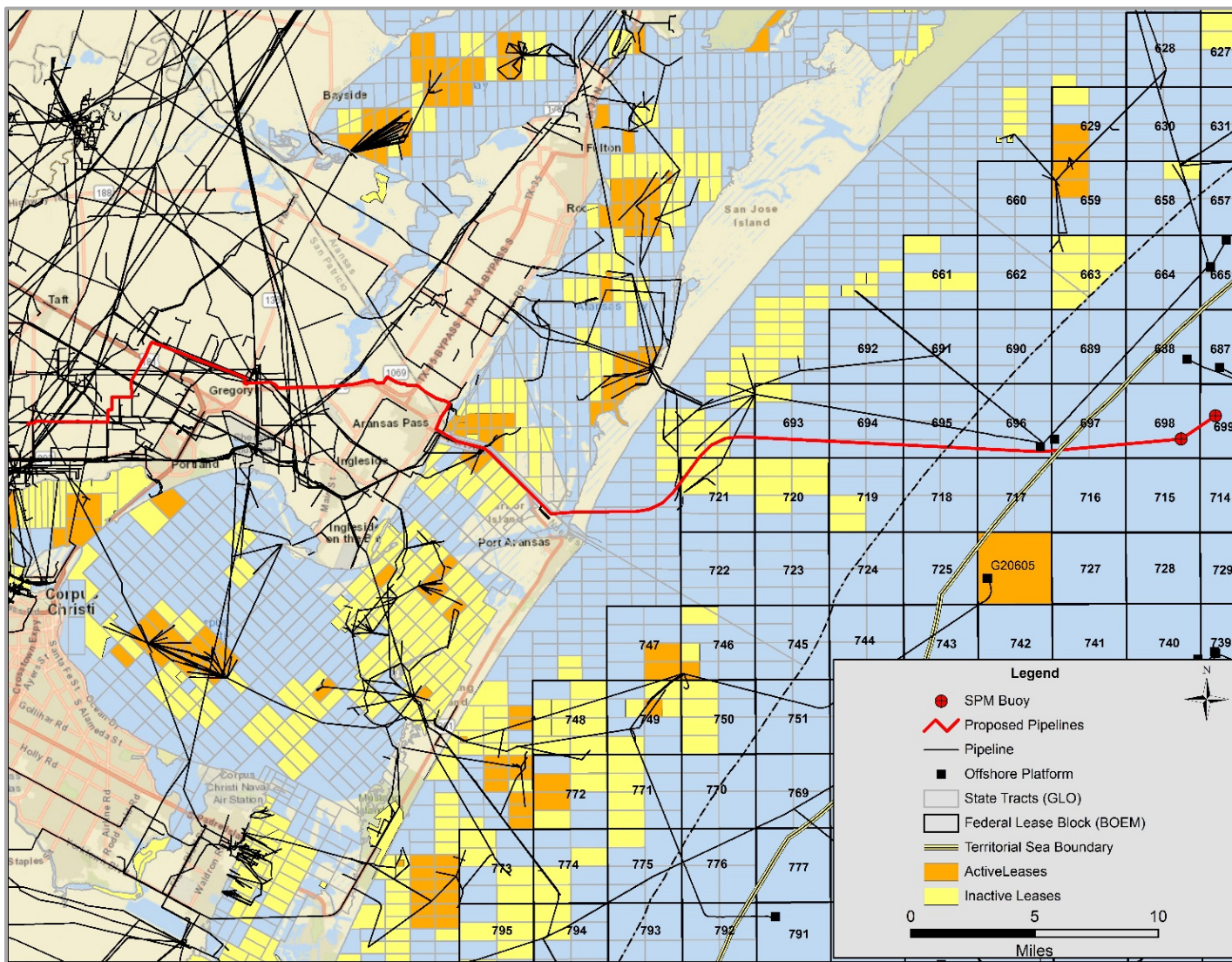
INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The proposed Inshore Pipelines will run parallel with an abandoned gas pipeline owned by Koch Midstream Services Company LLC, through the Aransas Channel, and will traverse a total of 69 existing inshore pipelines (Texas RRC 2019; BOEM 2019a) (Figure 12-5). Cultural resources identified during surveys are discussed in Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

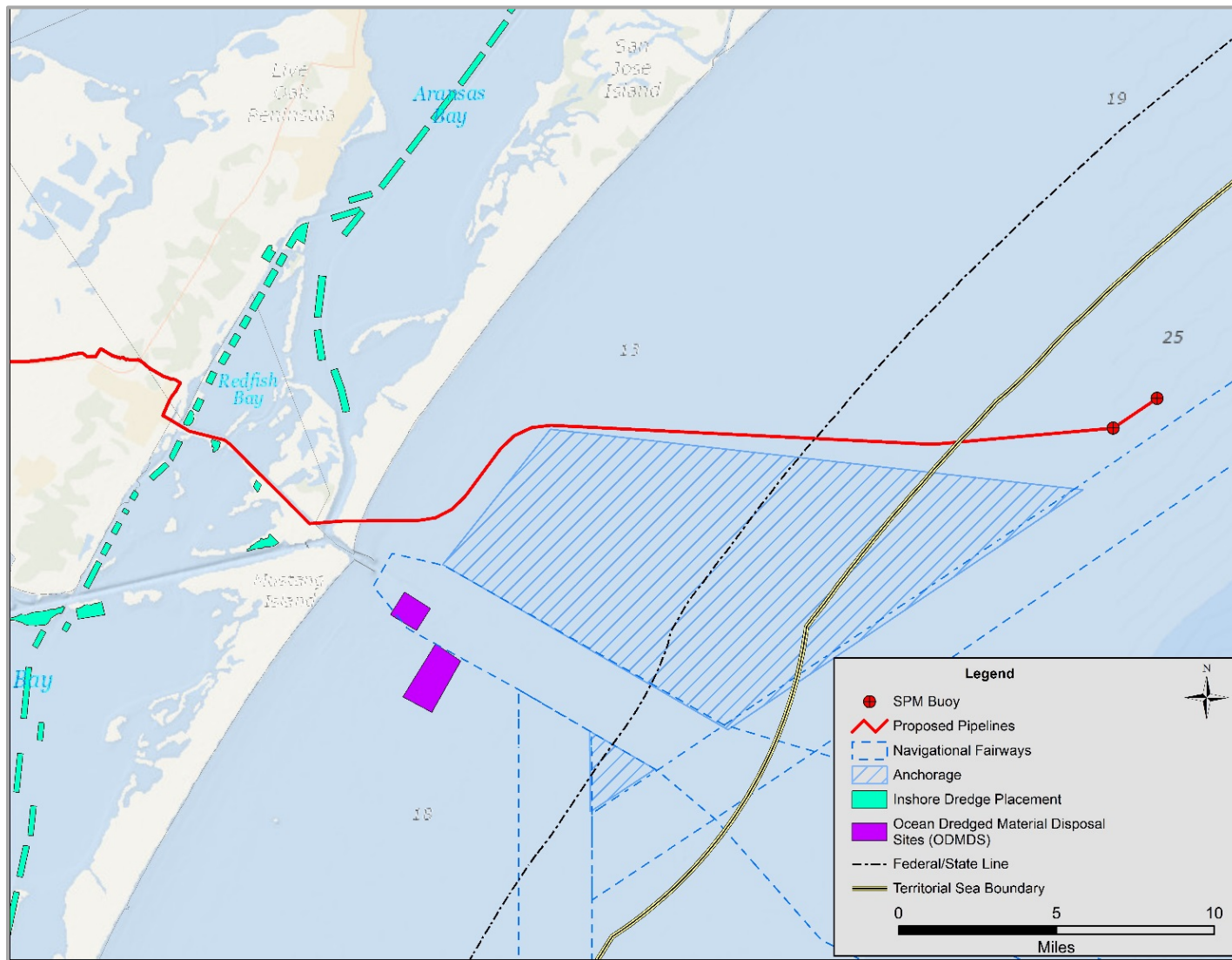
As part of a 50-year Gulf Intracoastal Waterway (GIWW) dredged material management plan, there are over 200 designated disposal areas along the GIWW in Texas (USACE 2019) (Figure 12-6). The dredge spoil placement areas are used by the USACE to dispose of material dredged from the GIWW. The proposed Inshore Pipelines do not traverse any active dredge placement area (USACE 2019) (Figure 12-6).

Figure 12-5: Offshore Pipelines or Other Submerged Infrastructure



Sources: BOEM 2019a

Figure 12-6: Active Dredge Placement Areas



Sources: USACE 2019; USEPA 2019

12.2.2.3 Offshore

12.2.2.3.1 MARINE ZONE USE

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 (10,547.6 km) of pipeline in the Western Planning Area (BOEM 2019b). 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 Proposed Project application prior to authorization, and one LNG terminal was decommissioned in 2012 (A Barrel Full 2018). More recently, applicants for three different offshore terminal projects have submitted applications with MARAD. Texas Gulf Terminal, Inc. submitted an application in July 2018 for a single point mooring (SPM) buoy system in the GOM that would connect to an onshore storage terminal facility via a series of offshore, inshore, and onshore pipelines. SPOT Terminal Services LLC and Texas COLT LLC both submitted their applications in January 2019. These projects would also include SPMs in the GOM connecting to existing and/or new onshore storage facilities but would also include platforms. Additional detail on these proposed projects is provided in Section 16: Cumulative Impact Assessment.

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, 2019c). Since this port is outside the geographic range of the Proposed Project, it is excluded from further discussion.

There are no federal lease blocks with active leases traversed by the Proposed Offshore Pipelines or the SPM buoy systems (BOEM 2019a) (Figure 12-4). 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, 2019c).

OFFSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The proposed Offshore Pipelines traverse a total of three existing Offshore Pipelines. The proposed Offshore Pipelines cross two abandoned gas pipelines within Lease Block 845, before traversing through Lease Block 721, and crossing another abandoned gas line owned by XTO Energy Inc. in Lease Block 837. The proposed Offshore Pipelines then travel almost parallel to an abandoned gas pipeline owned by LLOG Exploration Texas, L.P. located approximately 0.5 nm (0.6 mi [0.8 km]) to the south, between Lease block 693 to 696 (Figure 12-5) (BOEM 2019a). Submerged cultural resources identified during surveys are discussed in Section 9: Cultural Resources.

OTHER OCS NON-ENERGY MINERAL RESOURCES

Non-energy minerals resources 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 (NOAA 2019), no federal OCS sand and gravel borrow areas under BOEM’s purview occur within the vicinity of the Proposed Project, with the nearest federal OCS sand and gravel borrow located past Houston, over 230.0 mi (370.1 km) northeast of the Proposed Project. Sand leases and resources within state waters are not available through this data layer.

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 12-7. In 2015, over 12,500 vessel

calls were made to ports in Texas via these fairways (MARAD 2019). 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, 2019c). The La Quinta Channel, an extension of the 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 2019b). 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.

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 Proposed Project occur in Redfish Bay, Aransas Bay, and Corpus Christi Bay, as well as in near shore and offshore locations. The marine sanctuaries depicted in Figure 12-7, are also well-known destinations for recreational fishing and diving and can be accessed by private boat or charter (NOAA 2019).

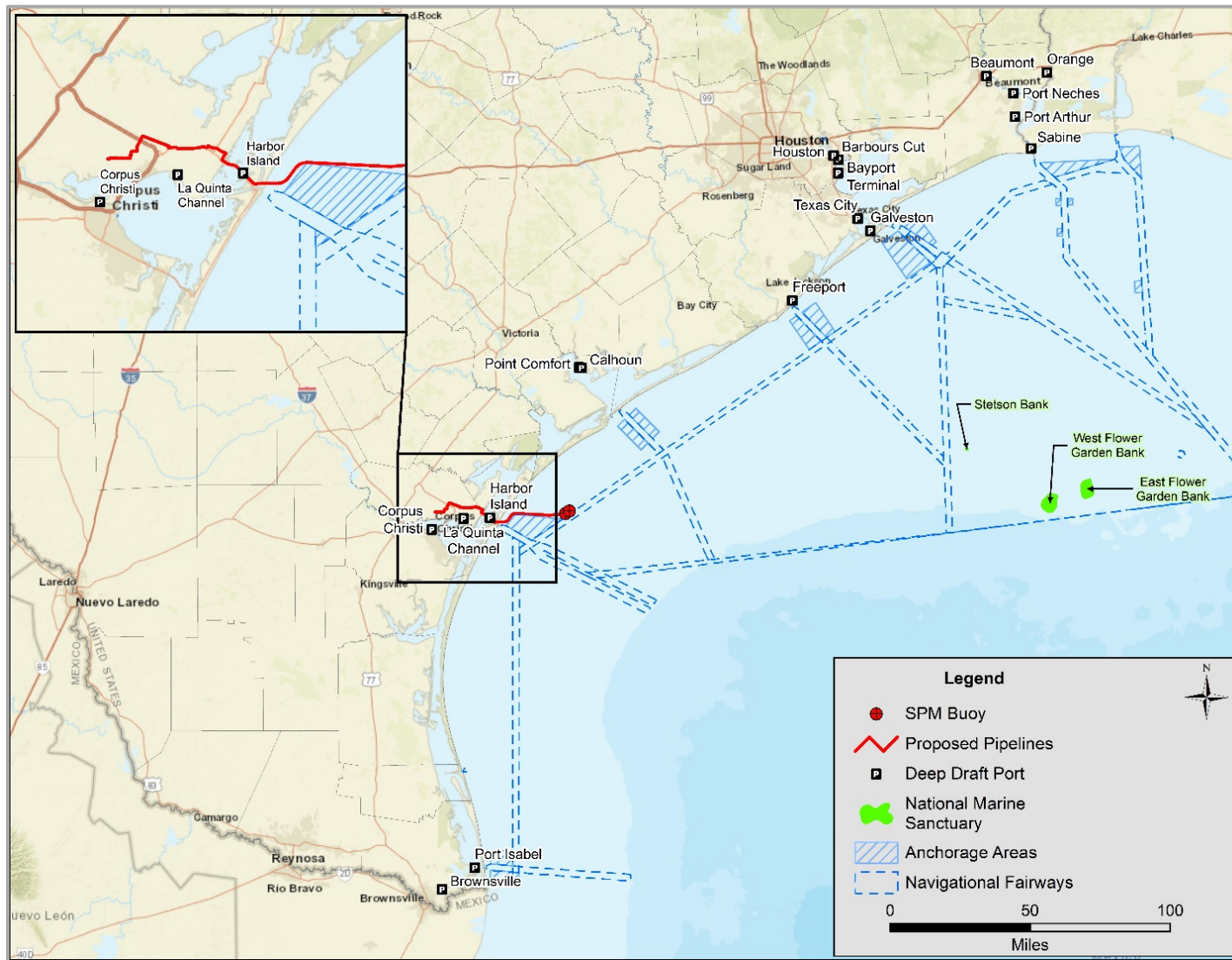
MILITARY USE

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 (U.S. Navy 2019). 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 SPM buoy systems would be approximately 40 mi (64.4 km) from NAS Corpus Christi. The NAS Corpus Christi is approximately 17.0 mi (27.4 km) southwest from the proposed Onshore Pipelines. The Waldron Field Naval Outlying Landing Field (NOLF) is located approximately 22.0 mi (35.4 km) west from the proposed Onshore Pipelines 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 (32,566.5 sq km) airspace designated offshore of NAS Corpus Christi to support training missions. 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 7.5 nm (8.6 mi [12.1 km]) from the DWP terminal. (Global Security 2019; BOEM 2014)

One military Operating Area (OPAREA) occurs within the vicinity of the Proposed Project (MarineCadastre.gov 2019). An at-sea military OPAREA is an area where training exercises and system qualification tests are routinely conducted. The Corpus Christi OPAREA is the largest OPAREA in the GOM, extending from just south of San Antonio Bay to the U.S.-Mexico border at Brownsville, and over 100 nm (115.1 mi [160.9 km]) from the shoreline into the GOM (NOAA 2019). No other military bases or specialized military zones would directly transect the area to be utilized by any component of the proposed DWP Project. 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.

Figure 12-7: Marine Shipping and Commercial Ports



Sources: Texas Department of Transport (TXDOT) 2019; BOEM 2019a.

LIGHTERING ZONES

According to the 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.” (USCG, DHS, Part 156-Oil and Hazardous Material Transfer Operations, Section 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 approximately 55.0 mi (88.5 km) from the SPM buoys. 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 37 nm (42.6 mi [59.5 km]) from the SPM buoy systems. Lightering zones are further discussed in Section 14: Navigation, Safety, and Security.

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 County at the Mexico border to the south.

The Federal CZMA 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. The CMP helps ensure the long-term environmental and economic health of the Texas coast.

12.2.2.3.2 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 (NOAA 2019). The GOM MMAs include National Marine Sanctuaries (NMS), Federal Fishery Management Zones, National Wildlife Refuges (NWR), National Estuarine Research Reserves (NERR), and Artificial Reefs. These habitats are offered varying degrees of protection from applicable regulatory agencies such as NOAA Ocean Services, National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the USCG, as well as state agencies. MMAs can include Marine Protected Areas (MPAs), as a subset.

Under Executive Order (E.O.) 13158, an MPA is any “area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.” There are more than 1,200 MPAs in the U.S., protecting about 26 percent of U.S. marine waters (National Marine Protected Areas Center 2016). These areas have various levels of protection, depending on the managing agency and resources protected. Examples of areas covered by the broader definition of MPA include, but are not limited to, NMSs, NERR, fishery management areas, state parks, and Wildlife Management Areas.

MMAs and MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

Essential Fish Habitat (EFH) includes estuarine and marine habitat that is important for sustainable fisheries. 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 142.9 mi (230.0 km) east of the proposed location for the Proposed Project's SPM buoys. Additional discussion of EFH and assessments of biology and productivity of fish stocks is provided in Section 8: Wildlife and Protected Species and Appendix J.

CORAL REEFS

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 30.0 mi (48.3 km) of the Proposed Project (see Section 6: Aquatic Environment). The closest coral reef to the Proposed Project (Stetson Bank, part of the Flower Garden Banks NMS) is approximately 142.9 mi (230.0 km) east of the SPM buoy systems.

With the northern GOM there are artificial reefs and manmade structures used to create artificial reef habitat, the closest of which to the Proposed Project is Boatmen's Reef, located approximately 5.7 mi (9.2 km) south of the proposed Offshore Pipelines (TPWD 2019e). Locations of artificial reefs can be seen on Figure 12-10: Recreational Features in the Vicinity of the Proposed Project, and further discussion on artificial reefs can be found in Section 6: Aquatic Environment.

OFFSHORE 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 U.S. Environmental Protection Agency's (USEPA) environmental criteria and is subject to USEPA's concurrence. Ocean Dredged Material Disposal Sites (ODMDS) have been designated in specific locations within the GOM.

The closest ODMDS to the Proposed Project is located approximately 2.1 mi (3.4 km) to the south of the proposed Offshore Pipelines (Table 12-1, and Figure 12-6 above). Neither the proposed Offshore Pipelines nor the proposed SPM buoy systems cross ODMDS.

ODMDS Name	USEPA Region	Average depth (ft)	Area (sq. nm.)	Date Designated	Designated Use	Proximity to Project
Corpus Christi Ship Channel (CCSC), TX	6	43.0 (13.1 m)	0.63 (0.8 sq. mi [2.2 sq. km])	August 10, 1989	Dredge material placement	2.1 mi (3.4 km) southwest
Corpus Christi New Work ODMDS (formerly Homeport Project ODMDS)	6	50.0 (15.2 m)	1.40 (1.9 sq. mi [4.8 sq. km])	September 30, 1998	Dredge material placement	3.8 mi (6.1 km) south

Source: USEPA 2019

12.2.2.3.3 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 Proposed Project. EFH and assessments of biology and productivity of fish stocks

are discussed in Section 7: Commercial and Recreational Fishing and Section 8: Wildlife and Protected Species. Finally, the economic contribution of commercial fishing in the region is discussed in Section 10: Socioeconomics.

Data on commercial fisheries was obtained from NMFS' Fisheries Statistic Division, which provide data for the GOM as a whole and by individual states. More localized data were acquired from the TPWD to provide commercial fishing statistics for areas in proximity to the site of the SPM buoy systems, when possible. Specifically, the TPWD maintains landings and fishing effort (reported in hours) for fishing that occurs in federally designated grids that contain offshore waters off the coast of Texas into the GOM (Figure 12-8). The Proposed Project will be located in Grid 20.

In 2017, the GOM contributed 14 percent of commercial fish landings in the continental U.S. and 78 percent of total domestic shrimp landings (NMFS 2019a). 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 2011). Table 12-2 provides landings values for the GOM and Texas over the 10-year period from 2009 through 2018. 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.

As shown in Table 12-2, the percent of Gulf Coast seafood landings in Texas averaged about 2.9 percent each year, peaking in 2010 at 3.9 percent (NMFS 2019a, TPWD 2019a). This peak is likely due to the reduction in landings (by more than half) in areas of the GOM impacted by the Deepwater Horizon (DWH) oil spill, specifically in Alabama and Mississippi (NMFS 2011).

Table 12-3 summarizes the weight and dollar value of species caught in Texas nearshore waters (from 0.0 to 3.0 nm [from 0.0 to 4.8 km])¹ and in territorial and U.S. navigable waters to the limits of the EEZ (from 3.0 to 200.0 nm [4.8 to 321.9 km]) (NMFS 2019b). 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 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 Proposed Project were shrimp and oyster (see Table 12-3; NMFS 2019b).

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

Figure 12-8: Gulf of Mexico Grid of Federal Waters

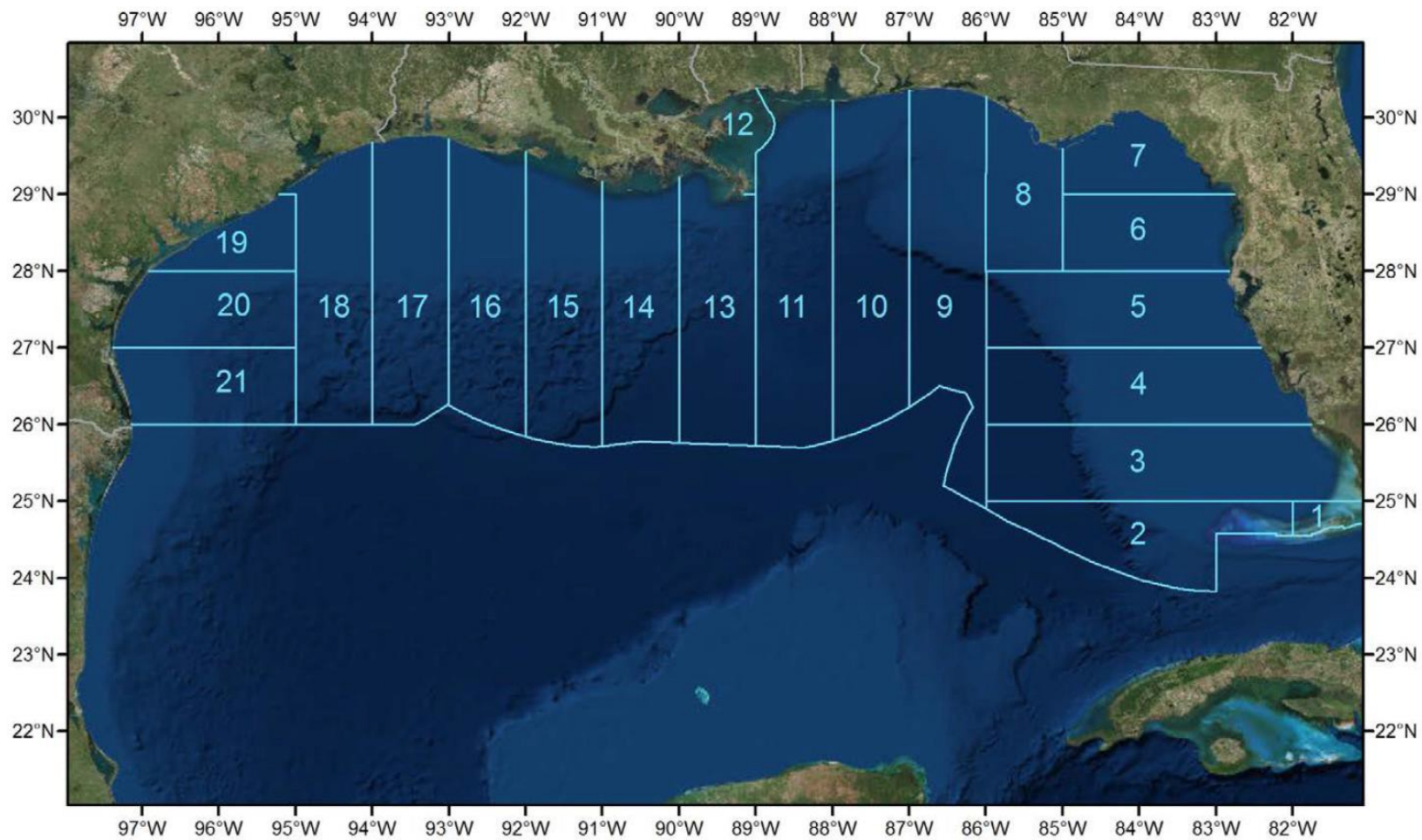


Table 12-2: Total Commercial Landings by Weight in the Gulf of Mexico and Texas 2009-2018

Year	GOM	Texas ^a	
	Landings (in million pounds)	Landings (in million pounds)	Percentage (%) of Gulf Coast Landings
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	1,55.3	40.4	2.6%
2016	1,735.8	37.0	2.1%
2017 ^b	1,402.2	47.0	3.4%
2018 ^c	--	42.1	

Sources: NMFS 2019a, TPWD 2019a.

^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 Based on estimates from Trip Ticket data. These are fish and shrimp caught in Texas and landed in Texas (stat zone 17 excluded for shrimp).

^c NMFS data for 2018 is not available. Data provided by TPWD for this year is preliminary due to outstanding dealer tickets.

**Table 12-3: 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	Vermilion Snapper	5	\$15	506	\$1,418
7	Groupers	1	\$0	220	\$757
8	Tilefish	0	\$0	134	\$318
9	Catfish/Bullheads	102	\$101	0	\$0
10	Mullet	93	\$262	0	\$0
All remaining inshore and offshore species		250	\$503	51	\$107

Source: NMFS 2019b

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 12-4 presents commercial species caught in Texas in 2017 based on the trip ticket program. The program is administered by TPWD, who collects and compiles landings data reported by commercial fishermen and dealers (TPWD 2019b). 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 2017 were 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. These trends continue in 2018 based on preliminary data.

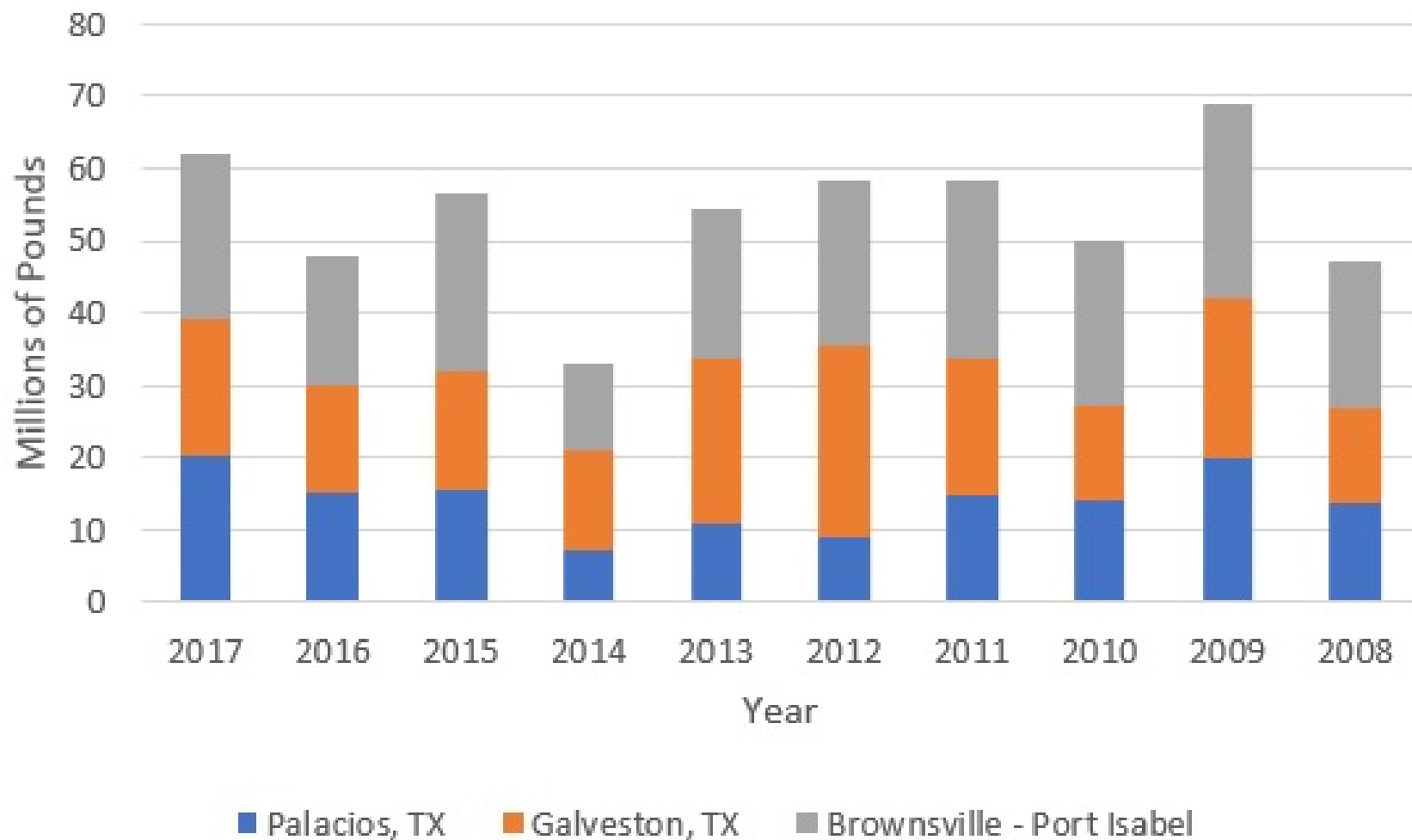
Species	Pounds	Dollars	Species	Pounds	Dollars
Brown Shrimp	22,947,515	\$83,808,710	Dolphinfish	924	\$2,630
White Shrimp	10,011,913	\$41,077,842	Pinfish	881	\$8,064
Blue Crab	4,131,522	\$5,422,681	Unclassified Scorpionfish	875	\$2,538
Astern Oyster	3,503,514	\$20,403,679	Blackfin Tuna	859	\$1,315
Red Snapper	2,212,788	\$9,881,446	Snake Eel	599	\$495
Lack Drum	1,926,055	\$2,457,774	Spanish Mackerel	593	\$971
Live Baitshrimp	750,196	\$3,704,376	Brief Squid	585	\$1,552
Dead Baitshrimp	271,867	\$495,202	Dolphinfish	576	\$578
Yellowedge Grouper	224,159	\$974,230	Pinfish	520	\$520
Tilefish	207,217	\$637,479	Unclassified Scorpionfish	508	\$456
Vermilion Snapper	148,965	\$442,805	Blackfin Tuna	434	\$1,472
Atlantic Croaker	87,515	\$767,322	Snake Eel	377	\$660
Unclassified Mullet	79,613	\$215,879	Spanish Mackerel	337	\$180
Pink Shrimp	74,645	\$185,414	Brief Squid	331	\$679
Unclassified Shrimp	57,424	\$225,492	Sand Seatrout	327	\$1,184
King Mackerel	33,541	\$65,558	Blue Catfish	325	\$1,241
Unclassified Flounder	31,002	\$128,338	Great Barracuda	324	\$534
Striped Mullet	29,537	\$74,359	Yellowmouth Grouper	314	\$737
Warsaw Grouper	28,851	\$109,573	Seabob Shrimp	304	\$111
Greater Amberjack	21,030	\$38,141	Crevalle Jack	300	\$410
Sheepshead	17,655	\$9,838	Bar Jack	288	\$307
White Mullet	13,903	\$26,326	Wahoo	274	\$1,024
Unclassified Herring	11,100	\$16,005	Speckled Hind	251	\$1,059
Scamp Grouper	9,950	\$38,246	Blueline Tilefish	218	\$615
Unclassified Food	8,969	\$22,930	Shortfin Mako Shark	214	\$386
Southern Flounder	8,843	\$35,201	Atlantic Bonita Tuna	213	\$327
Atlantic Cutlassfish	8,296	\$9,845	Gray Triggerfish	177	\$643

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

Species	Pounds	Dollars	Species	Pounds	Dollars
Snowy Grouper	8,031	\$30,803	Unclassified Kingfish	162	\$178
Pigfish	6,892	\$71,205	Black Grouper	152	\$266
Yellowfin Tuna	6,482	\$31,559	Rock Hind	146	\$475
Stone Crab	6,412	\$41,573	Lane Snapper	145	\$139
Gulf Kingfish	5,680	\$11,386	Jack Tuna	122	\$122
Gulf Butterfish	5,493	\$19,226	Southern Kingfish	85	\$290
Rock Shrimp	5,335	\$14,165	Unclassified Grouper	79	\$114
Maco Jack	4,734	\$8,805	Unclassified Scrap	75	\$95
Cobia	4,665	\$16,748	Blue Fish	61	\$231
Silk Snapper	3,495	\$9,227	Florida Pompano	54	\$46
Unclassified Snapper	3,322	\$12,735	Unclassified Jack	42	\$124
Topsail Catfish	2,657	\$1,373	Alligator Gar	40	\$20
Ballyhoo	2,597	\$14,610	Yellowfin Grouper	32	\$15
Blue Runner	2,538	\$2,884	Rainbow Runner	32	\$128
Porgies	2,281	\$3,295	Atlantic Spadefish	26	\$31
Unclassified Squid	2,131	\$3,149	Red Grouper	25	\$23
Mantis Shrimp	2,093	\$7,817	Unclassified Grunt	7	\$6
Gag Grouper	2,018	\$7,613	Yellowtail Snapper	7	\$18
Stingrays	2,017	\$2,880	Rimapenaeus Shrimp	4	\$16
Unclassified Killifish	1,850	\$41,552	Cubera Snapper	2	\$5
Goldface Tilefish	1,400	\$2,974	Atlantic Sharpnose Shark	1	\$5
Swordfish	942	\$3,677			
Total				46,940,651	\$171,633,945
Source: TPWD 2019a					
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. Shrimp landings are given in tail weight, except for Baitshrimp, live/dead, which are given in whole live weight.					

Figure 12-9 compares landings volume for top three fishing ports in Texas, i.e., Brownsville – Port Isabel, Galveston, and Palacios, for a 10-year period (Texas State Historical Association 2019; NMFS 2019b). These ports are 123.0, 148.0, and 61.0 mi, (197.9, 238.2, and 98.2 km) respectively, from the Proposed Project. Collectively these ports consistently received over 30.0 million pounds (13.6 million kilograms) annually during the 10-year period. Commercial landings at the Aransas Pass – Rockport fishing port have been generally decreasing in recent years and average about 1.7 million pounds (0.8 million kilograms) 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 Proposed Project.

Figure 12-9: Total Commercial Fishery Landings at Ports in the Vicinity of the Proposed Project



Texas State Historical Association 2019; NMFS 2019b

Annual commercial fishing trips to federal waters offshore of Texas are presented in Table 12-5. Grid 20 consistently had the lowest average number of recorded trips from 2015 to 2017 of the three grids closest to the Proposed Project.

Federal Grid	2017 Total Trips	Three-Average (2015 - 2017)
Grid 19	902	903.0
Grid 20 ^a	294	299.0
Grid 21	785	750.7

Source: TPWD 2019a
 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 12-6.

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	7,988,479	\$25,930,249
White Shrimp	109,562	\$338,637	85,220	\$237,857	165,457	\$851,932	360,239	\$1,428,426
Live Baitshrimp	1,401	\$7,688	4,788	\$28,728	1,811	\$8,975	8,000	\$45,390
Dead Baitshrimp	2,944	\$7,360	340	\$534	106	\$159	3,390	\$8,053
Red Snapper	NA	NA	NA	NA	2,020	\$10,586	2,020	\$10,586
Pink Shrimp	NA	NA	NA	NA	NA	NA	NA	NA
Rock Shrimp	222	\$646	339	\$1,132	NA	NA	561	\$1,778
Unclassified Mullet	204	\$987	895	\$4,831	C	C	1,099	\$5,818
Atlantic Cutlassfish	422	\$400	NA	NA	C	C	422	\$400
Unclassified Herring	144	\$378	NA	NA	NA	NA	144	\$378
Unclassified Squid	138	\$110	NA	NA	NA	NA	138	\$110
Atlantic Croaker	NA	NA	50	\$660	C	C	50	\$660
Seabob Shrimp	554	\$605	350	\$535	NA	NA	904	\$1,140
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	C	C
Grand Total	3,509,709	\$9,946,846	2,299,811	\$8,218,786	2,556,021	\$9,267,797	8,365,541	\$27,433,429

Source: TPWD 2019a
 Notes: C = Confidential – when fewer than three fishermen 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.

The 2015 and 2016 data are based on NMFS data which includes all shrimp caught in Federal Grid 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 12-6 shows that brown shrimp are consistently the most harvested fish in Grid 20, as well as being the most valuable harvest.

Table 12-7 presents similar data as that is described for Table 12-6, 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 systems. Table 12-8 shows that landings data for the grid in which the proposed SPM buoy systems would be located, is typically fished by trawl.

Federal Grid	2015 Landings (pounds)	2016 Landings (pounds)	2017 Landings (pounds)	Average Landings 2015-2017 (pounds)
Grid 19	7,363,067	4,599,679	11,033,849	7,665,532
Grid 20 ^a	3,508,801	2,298,846	2,553,926	2,787,191
Grid 21	9,866,114	8,151,225	7,599,969	8,539,103

Source: TPWD 2019a.
^a The Proposed Project would be located in this federal grid.

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	7,497,858	\$24,202,613
Hook and Line	NA	NA	NA	NA	2,030	\$10,601	2,030	\$10,601
Cast Net	C	C	\$895	\$4,831	C	C	895	\$4,831

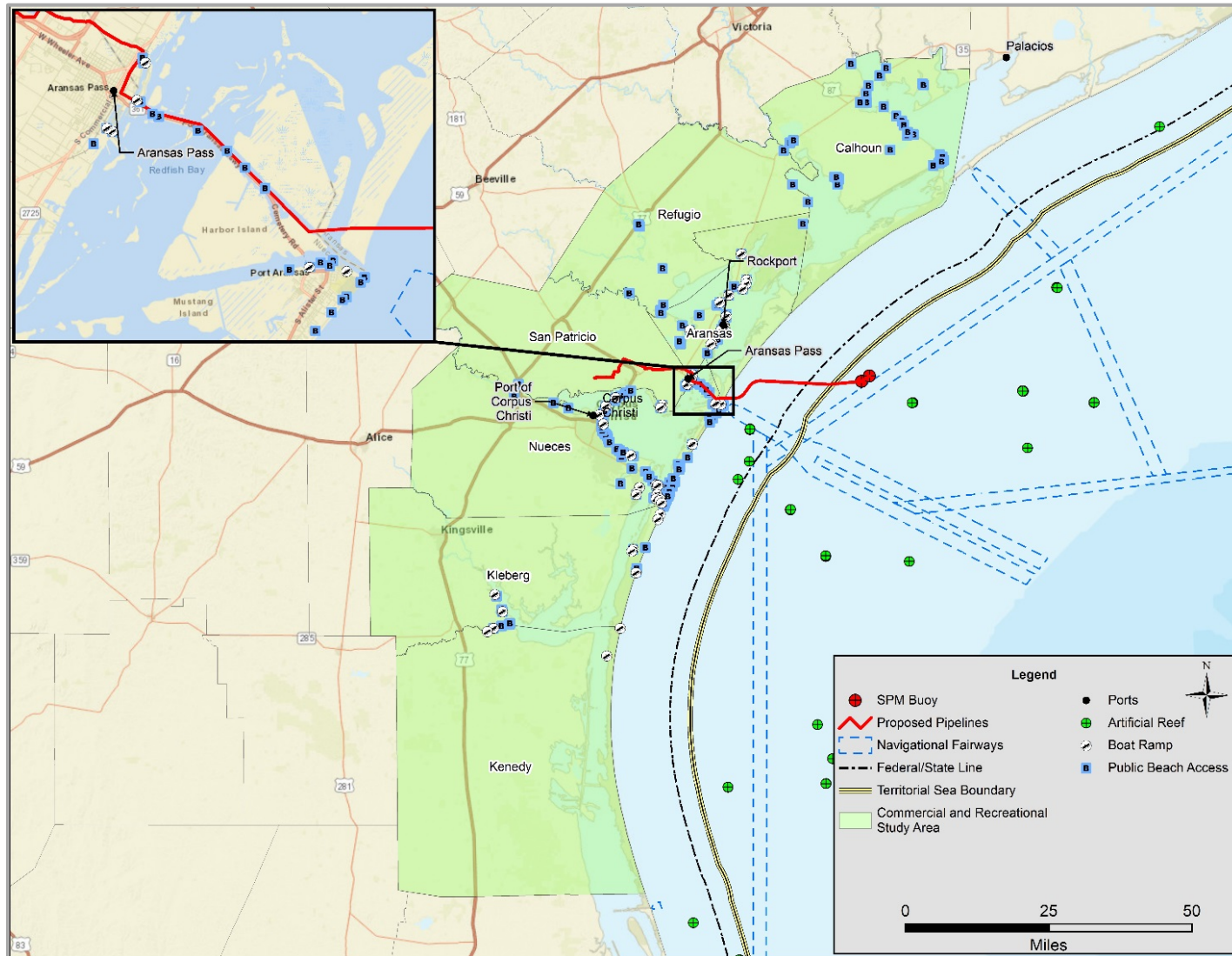
Source: TPWD 2019a.
 Notes: C = Confidential – when fewer than three fishermen or dealers have reported landings for the species. NA = no catch reported for this species
^a The Proposed Project would be located in this federal grid.

12.2.2.3.4 RECREATION

RECREATIONAL BOATING

In 2014, over 580,000 boats were registered in Texas; boating safety is the responsibility of Texas game wardens (TPWD 2019c). Recreational boaters in the vicinity of the Proposed Project have a variety of launch points to choose from depending on the specific boating activity and destination for a given trip. There are 52 public recreational boat launches providing access to the bays and offshore waters off the coast of Texas within the study area; see Figure 12-10 (TPWD 2019d). Numerous additional boat ramps are available within 100.0 mi (160.9 km) of the Proposed Project and include boat ramps in neighboring counties; however, most recreational boaters nearby the Proposed Project would be expected to launch from ramps closer to the desired fishing location.

Figure 12-10: Recreational Features in the Vicinity of the Proposed Project



Sources: TPWD 2019d; TPWD 2019e; BOEM 2019a.

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 2019e). Also, as part of the Texas Artificial Reef Program, decommissioned oil and gas infrastructure can be converted to reef structures (TPWD 2019f). While events in the recent past, such as increased security from 9-11, perceived contamination of the DWH 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 systems location is in 88.5 to 89.5 ft (27.0 to 27.3 km) of water, and the nearest artificial reef (Boatmen’s Reef) is located approximately 5.7 mi (9.1 km) south of the Proposed Project (TPWD 2019e). Active platforms in proximity to the Proposed Project would not be candidates for scuba activities.

National Marine Sanctuaries (NMS) are also well-known destinations for recreational fishing and diving and can be assessed by private boat or charter (NOAA 2019). 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 142.9 mi (230.0 km) east of the Proposed Project. NMS are also discussed in Section 6: 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 0.9 mi (1.4 km) east of the SPM buoy systems. Recreational vessels that travel east–west to access the POCC will navigate in or near the defined shipping safety fairway about 3 mi (4.8 km) north of the SPM buoy systems (see Figure 12-10). 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 Proposed Project.

RECREATIONAL FISHING

This section discusses the marine use aspects of recreational fishing such as how frequently the activity is practiced and its location. EFH for recreational fisheries is discussed in Section 8: Wildlife and Protected Species, and Appendix J: Essential Fish Habitat Assessment. The economic contribution of recreational fishing to the area is discussed in Section 10: Socioeconomics.

Based on the depth of the waters where the SPM buoy systems will be located, between 88.5 to 89.5 ft (27.0 to 27.3 km), recreational activities in proximity would be considered offshore fishing; however, inshore fishing (in the Aransas and San Antonio Bay Systems) and nearshore fishing (on the seaward side of San Jose Island) would also occur nearby the Proposed 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 2011, 2019c). 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 12-9. The data presented in Table 12-10 are based on marine recreational fishing surveys conducted by TPWD (TPWD 2019a).

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 2019a

Bay System	Angler Type			
	For-hire	Private Vessel	Shore	Total
Corpus Christi				
Hours	200,858	370,755	619,097	1,190,710
Percent	17%	31%	52%	
Laguna Madre				
Hours	391,845	1,270,575	906,694	2,569,114
Percent	15%	49%	35%	
Aransas				
Hours	357,577	1,254,856	378,258	582,107
Percent	18%	63%	19%	
San Antonio				
Hours	115,459	438,120	28,528	1,990,691
Percent	20%	75%	5%	

Source: TPWDD 2019a,g

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 2019a).

Table 12-10 shows fishing effort for 2017 in bay systems within the Proposed Project area (TPWD 2019a, g). These estimates included fishing effort by private and rental boats and charter boats. In 2017, anglers spent over to 6.3

million hours fishing in the bay systems near the Proposed Project, of which about a third (31 percent) occurred from shore.

12.2.3 Proposed Project Construction Impacts

The methodology for evaluating impacts to coastal zone resources has identified consequence-producing factors within three distinct phases of the Proposed 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 Proposed Project that were used to evaluate environmental consequences in the following sections.

As discussed in Section 3: Project Description and Framework for Environmental Evaluation, the environmental consequences of the Proposed Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resource returning to pre-construction conditions almost immediately afterward. Short-term impacts are considered to be those that may continue for up to 3 years following construction. Impacts are considered long-term if the resource would require more than 3 years to recover. A permanent impact could occur as a result of any activity that modified a resource to the extent that it would not return to pre-construction conditions during the life of the Proposed Project, such as within the footprint of Project. When determining the significance of an impact, we consider the duration of the impact, the geographic and biological context in which the impact would occur, and the magnitude and intensity of the impact. The duration, context, and magnitude of impacts vary by resource and therefore significance varies accordingly.

12.2.3.1 Onshore and Inshore

12.2.3.1.1 COASTAL ZONE

The entirety of the Proposed Project is within the Texas Coastal Management Zone. To minimize potential impacts to coastal resources, BWTT will install the coastal crossings of the Inshore Pipelines (including those crossings of the San Jose Island and mainland coasts) using HDD, as described in Appendix A. Use of HDD construction methods will avoid any sensitive shallow water and shoreline habitat, as well as surface impacts as the pipelines are expected to be relatively deep.

The Inshore Pipelines will be installed using open-cut trenching across Stedman Island, Harbor Island, and an inland portion of San Jose Island. Trenching on Stedman and Harbor Islands will be adjacent to existing disturbance (e.g., roads and power lines). Further, BWTT will install appropriate erosion controls along its construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels, as described in Appendix V.

Overall the Proposed Project is anticipated to have negligible impact on coastal zones during construction. Additional information concerning the potential for water quality and resource impacts is provided in Section 4: Water Quality and Section 6: Aquatic Environment, respectively.

12.2.3.1.2 LAND USE

During the construction of the Onshore Pipelines and Onshore Components of the Inshore Pipelines (i.e., impacts on the coastal islands), land use will be disturbed within the 125-ft (38.1-m) ROW. The Onshore and Inshore Pipelines will cross four main types of land use in addition to open water areas:

- Agricultural Land;
- Windfarms;
- Residential Areas; and,
- Coastal Islands.

In addition, multiple roads will be crossed during construction; however, BWTT will cross all public, paved roads using bore crossing methods, or as otherwise allowed by the applicable permits, as described in Appendix A: Construction, Operation and Decommissioning Procedures.

AGRICULTURE

West of the City of Aransas Pass, the majority of the land crossed by the Onshore Pipelines is actively cultivated agricultural land. During construction, BWTT will disturb a 125-ft-wide construction corridor, with additional temporary workspaces as needed, for installation of the pipelines. The primary impact on agricultural areas would be the temporary loss of production during and shortly after construction is completed. Additional impacts could include soil rutting or compaction due to construction equipment. BWTT will bury the pipelines with a minimum cover of 3 ft. BWTT will undertake consultation with impacted landowners and all agricultural areas disturbed during construction will be restored in accordance with landowner agreements and will be available for agricultural use immediately upon completion of construction or restoration. With the above mitigation measures in place, any impacts to agricultural areas as a result of the construction of the Proposed Project are anticipated to be minimal and not significant.

WIND FARMS

The Onshore Pipelines will cross the Papalote Creek Wind Farm near its western origination point. While the Onshore Pipelines do cross the access paths of a number of wind turbines, and will be within about 100 ft (30 m) of individual turbines, construction will not directly affect any wind turbines. Land use adjacent to and between the turbines is predominantly agricultural. To help minimize any adverse impact and/or inconvenience to landowners and wind turbine owners, BWTT will coordinate with existing land and wind farm owners prior to construction. Overall potential impacts to windfarms are anticipated to be temporary and negligible.

RESIDENTIAL AREAS

Approximately 4.0 mi (6.4 km) of the Onshore Pipelines ROW closest to the GOM is located in an urban area associated with the City of Aransas Pass, with a limited residential presence. In addition, the Inshore Pipelines are located near residences along Texas State Highway 361. Increased levels of dust due to soil movement, and artificial light from construction machinery within the vicinity of residential homes could potentially create an annoyance for local residents. In addition, typical pipeline construction and HDD installation of the pipelines will result in noise impacts in the vicinity of construction. Typical pipeline construction is expected to move along the pipeline route, such that any single area experiences only a short duration of construction noise. However, HDD construction requires stationary drilling equipment to operate for a longer timeframe. As described in Section 13: Meteorology, Air Quality, and Noise, estimated noise from construction of one HDD along the Onshore and Inshore Pipelines could exceed noise guideline levels and impact nearby residences; however, with the implementation of additional mitigation, impacts will be minor. Because HDD construction will be limited to up to 9 weeks at each location and given BWTT's intent to implement noise mitigation measures identified in Section 13: Meteorology, Air Quality, and Noise, noise impacts from HDD construction will be temporary and minor.

To minimize any potential impacts from soil movement and lighting, BWTT will utilize best practice soil removal and storage methods during pipeline construction, limit nighttime working in the vicinity of residential areas, and consult with local residents prior to construction. In addition, upon completion of pipeline construction, the pipeline ROW will be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and will be returned to a vegetated state. With the above mitigation measures in place, any impact to residential areas within the study area is anticipated to be minimal and not significant.

COASTAL ISLANDS

As stated above, the Inshore Pipelines will be installed using open-cut trenching. Trenching on Stedman and Harbor Islands will be adjacent to existing disturbance (e.g., roads and power lines). Further, BWTT will install appropriate erosion controls along its construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels,

as described in Appendix V. The Harbor Island Booster Station will also be placed on Harbor Island, resulting in the permanent conversion of vegetated habitat to an industrial site. Given the already disturbed nature of these islands, and the mitigation proposed to minimize impacts from sedimentation, construction impacts on these islands are anticipated to be minor and temporary.

San Jose Island will be the staging area for two HDDs, one of which crosses the confluence of the Aransas and Lydia Ann Channels and one of which will cross the seaward shore of San Jose Island to a point about 3,900 ft (1,189 m) offshore where pipeline installation by jetting will begin. Between the two staging areas, about 38.8 ac (15.7 ha) of terrestrial habitat will be cleared for installation of about 1,100 ft (335.3 m) of trenching and placement of the HDD drilling equipment. Aside from the public beaches, which will be crossed by HDD, San Jose Island is privately managed for wildlife purposes. As discussed in Section 13: Meteorology, Air Quality, and Noise, HDD, noise is not anticipated to be perceptible at the public beach. Upon completion of pipeline construction, the pipeline ROW will be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and will be returned to a vegetated state. Given the negligible change in noise levels and the public beach, and BWTT's commitment to reseeding vegetation within the disturbed areas, impacts on San Jose Island are anticipated to be minor and short-term.

12.2.3.1.3 RECREATION

The proposed Onshore Pipelines do not come within 1,000 ft (304.8 m) of a public park or beach, with the closest park being Newbury Park City Park in Aransas Pass, located approximately 0.5 mi (0.8 km) north of the Onshore/Inshore Pipelines connections. As such, the construction of the Onshore and Inshore Pipelines are not anticipated to have an impact on parks and recreation during construction.

The Inshore Pipelines will be constructed using a combination of HDD and open-cut methods. All open water areas where recreational boating and fishing could occur will be crossed using HDD construction methods, which would allow boaters and fishermen unrestricted access to inshore waters. Impacts on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities and associated noise. Given the amount of boating and fishing opportunities in the near waters of the Proposed Project area, boaters and fishermen could opt to recreate in nearby areas unaffected by construction. Overall, construction of the Inshore Pipelines will have a negligible impact on recreational activities. Further, construction activities are not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.2.3.1.4 AESTHETICS

During construction of the pipelines, 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. There are a limited number of residential areas within 1,000 ft (302.8 m) of the proposed Onshore and Inshore Pipelines routes which are considered aesthetic sensitive receptors. At these locations, residents will experience diminished views in the direction of the pipelines during the construction phase. Due to the presence of construction activities, construction activities could also result in temporary changes in the viewshed for nearshore recreational boaters and fishermen.

Best Management Practices (BMPs), such as dust suppression and construction lighting limitations, will be used to minimize the alteration of the viewshed. The use of the HDD construction method will also help limit potential impacts to the aesthetics of the onshore and inshore areas. On completion of pipeline construction, the pipeline ROW will be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and will be returned to a vegetated state.

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

12.2.3.1.5 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

Eight active leases were identified within the immediate vicinity of the Inshore Pipelines; however, no active leases are crossed by the inshore elements of the Proposed Project. Installation of the Proposed Project is not likely to affect inshore oil and gas activities in the vicinity of the Proposed Project. Any oil/gas exploration that would be proposed during installation of the Proposed Project would be aware of all activity, obstacles, and obstructions within their area of interest. As such, no impact is anticipated to inshore oil and gas activities as a result of the Proposed Project construction.

INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The proposed Inshore Pipelines will cross a total of 69 existing inshore pipelines (Texas RRC 2019). Construction of the proposed Inshore Pipelines could adversely impact the submerged pipelines within the direct path of the proposed Inshore Pipelines' ROW resulting in damage to existing pipelines. To minimize any potential impact to existing pipelines, BWTT will undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Inshore Pipelines to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the proposed Inshore Pipelines is anticipated to be temporary and minor.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

While the proposed Inshore Pipelines will be located within the vicinity of active dredge placement areas, the proposed Inshore Pipelines will not traverse any active dredge placement areas. During the construction phase of the proposed Inshore Pipelines, open water will be crossed using HDD construction methods, which would allow unrestricted access to inshore waters and active dredge placement areas in the vicinity of the proposed Inshore Pipelines. Overall, no adverse impacts to active dredge placement areas are anticipated as a result of the proposed Inshore Pipelines.

12.2.3.2 Offshore

12.2.3.2.1 MARINE ZONE USE

OFFSHORE OIL AND GAS ACTIVITY

Installation of the Proposed Project is not likely to affect offshore oil and gas activities in the vicinity of the Proposed Project. No active drilling is occurring within the lease blocks that would be crossed by the proposed Offshore Pipelines. Any oil/gas exploration that would be proposed during installation of the Proposed 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 Proposed Project construction.

OFFSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The proposed Offshore Pipelines cross a total of three existing offshore pipelines (Texas RRC 2019). Construction of the proposed Offshore Pipelines could adversely impact the submerged pipelines within the direct proposed Offshore Pipelines ROW resulting in damage to existing pipelines. To minimize any potential impact to existing pipelines, BWTT will undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Offshore Pipelines to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Offshore Pipelines are anticipated to be temporary and minor.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

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 Proposed 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 Proposed Project is not likely to significantly affect commercial shipping or activities. Any vessels that would otherwise transit through the Proposed 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 experience temporary impacts, based on 18-month construction period. Construction is expected to have negligible effect on marine shipping.

MILITARY USE

Construction of the Proposed Project is not expected to affect military activities. The Proposed Project offshore construction sites are located near various designated Military Warning Areas and/or specialized training zones (see Section 12.2.3.1). Any military activities that occur during construction or after installation and commissioning of the Proposed 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 Proposed Project would have beneficial 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 55.0 mi (88.5 km) from the proposed SPM buoys. Due to the lightering zone being so far removed from the Proposed Project area, it is not anticipated that the Proposed Project will pose any undue restrictions to the lightering zone or lightering operations. As such, the Proposed Project is anticipated to have no impact on lightering zones. Lightering zones are further discussed in Section 14: Navigation, Safety, and Security.

12.2.3.2.2 PROTECTED OFFSHORE HABITATS

MARINE MANAGED AREAS

MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

Impacts on EFH are discussed in Appendix J.

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 Proposed Project.

OFFSHORE DREDGED MATERIAL DISCHARGE ZONES

The nearest ODMDS is located approximately 2.1 mi (3.4 km) southwest of the proposed Offshore Pipelines and as such, no impact to ODMDS is anticipated a result of the Proposed Project.

COMMERCIAL FISHING

During the 16-week construction period of the SPM buoy systems, 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 systems 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 Proposed Project vicinity are anticipated.

Similarly, construction of the Offshore Pipelines will be sequential over the 15-month-long construction and testing period, during which waters in proximity to construction vessels will be inaccessible to fishermen. Similar to that discussed for the SPM buoy systems, 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 Aransas Bay, the Intracoastal Waterway would be crossed by HDD, which would allow fishermen unrestricted access to other portions of Aransas Bay. Given the sufficient fishing habitat available in the vicinity of the Proposed 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 fishermen so they can plan alternate routes and/or destinations to other accessible areas nearby the Proposed Project. As such, impacts on commercial fishermen's ability to maintain current harvest levels and access 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 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.2.3.2.3 RECREATION

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 systems will be inaccessible for 16 weeks, while other areas of Project construction associated with pipeline installation will be inaccessible for a shorter period. 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 Proposed 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 5.7 mi (9.2 km) south of the Proposed Project. Further as neither the Aransas Pass-Rockport nor the POCC regularly receive cruise ships engaged in multi-day trips, shipping fairways near the Proposed 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 16-week construction period of the SPM buoy systems, recreational fishing will be 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 systems site, and the lack of unique fishing opportunities afforded by the Offshore Project site. Further, given that only about 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 systems will have a negligible impact on recreational offshore fishing.

Similarly, construction of the Offshore Pipelines will be sequential over the 15-month-long period, during which, waters in proximity to construction vessels will be inaccessible to fishermen. 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 fishermen 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 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.2.3.2.4 AESTHETICS

The SPM buoy systems will be constructed 17.0 mi (27.4 km) 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 SPM buoy systems would require approximately 16 weeks to complete and is anticipated to present a temporary, minor visual impact for users in the offshore area.

12.2.4 Proposed Project Operation Impacts

12.2.4.1 Onshore and Inshore

12.2.4.1.1 COASTAL ZONE USE

Due to the buried nature of the pipelines (minimum of 3 ft [1 m] cover), once operational, the Onshore and Inshore Pipelines are anticipated to have no impact to coastal zones. The Harbor Island Booster Station will take up physical space above ground, however due to its limited size and footprint (19 ac [7.7 ha]), impacts to coastal zone use during operation are anticipated to be minor but permanent.

12.2.4.1.2 LAND USE

Once construction has been completed, the ROWs of the Onshore and land-based Inshore Pipelines will be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the permitting authority or the landowner, and will be returned to a vegetated state. While a 50-ft-wide permanent ROW will be retained for the life of the Proposed Project, impacts within the permanent ROW will be predominantly limited to occasional inspections and vegetation maintenance to remove woody growth. Given the limited woody growth currently present and the minimal width of the permanent ROW, the impacts to local land use as a result of the Onshore and Inshore Pipelines are anticipated to be of minor significance during operation.

As described in Section 13: Meteorology, Air Quality, and Noise, operation of the Harbor Island Booster Station will not result in an audible increase above ambient sound levels at the nearest residence; therefore, impacts due to operations will be permanent but negligible.

12.2.4.1.3 RECREATION

Once operational, the Onshore and Inshore Pipelines are anticipated to have no impact to recreational parks and beaches. Once installation is complete the pipelines will be buried and as such will not impact recreational boating or fishing activities. Further, operation of pipelines is not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.2.4.1.4 AESTHETICS

Since the Proposed Project pipelines will be buried and land revegetated, no impact to aesthetics and visual amenity resulting from the Onshore and Inshore Pipelines during operation is anticipated. The Harbor Island Booster Station will result in permanent, but minor impacts, as it will be visible from area water and roadways; however, it will be similar in visual scope as other industrial facilities located on Harbor Island.

12.2.4.1.5 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

Once operational, the Proposed Project is anticipated to have no impacts on existing offshore oil and gas activities in the vicinity of the Proposed Project. Any oil/gas exploration that would be proposed during operation of the Proposed Project would be aware of the presence of the Inshore Pipelines within their area of interest. As such, no impact is anticipated to inshore oil and gas activities as a result of the Proposed Project operation.

INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

Once operational, the Proposed Project is anticipated to have no impacts on existing Inshore Pipelines and other submerged infrastructure. As such, no impact is anticipated to existing Inshore Pipelines and other submerged infrastructure as a result of the Proposed Project operation.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

Once operational, the Proposed Project is anticipated to have no impacts on active dredge placement areas in the vicinity of the Inshore Pipeline. As such, no impact is anticipated to active dredge placement areas as a result of the Proposed Project operation.

12.2.4.2 Offshore

12.2.4.2.1 MARINE ZONE USE

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 Proposed 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 crossed by the Proposed Project. The effects of operation of the Proposed 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 Proposed Project's protraction area (Area Block G20605); however, it is not intersected by the Proposed Project. Once operational, the Proposed 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 Proposed Project. Operation of the Proposed Project would not affect this resource; as such, no impact is anticipated.

MARINE SHIPPING AND COMMERCIAL PORTS

During operation, a 3,609 ft (1,100-m) radius safety zone will be established around the SPM buoy systems. Any vessels that would otherwise transit through the Proposed 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 Proposed Project is anticipated to result in a negligible impact on marine shipping and commercial port activity.

MILITARY USE

The Proposed Project site is located amidst various designated Military Warning Areas and/or specialized training zones (see Section 12.2.2.3.1). Any military activities that occur in the vicinity of the Proposed 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 Proposed Project becomes a known element in the area, military operations will continue as normal. Operations of the Proposed 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 55.0 mi (88.5 km) from the SPM. Due to the removed nature of the Proposed Project from the lightering zone it is not anticipated that the Proposed Project will pose any undue restrictions to the lightering zone or lightering operations. As such, operation of the Proposed Project is anticipated to have no impact on lightering zones.

12.2.4.2.2 PROTECTED OFFSHORE HABITAT

MARINE MANAGED AREAS

MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

Impacts on EFH are discussed in Appendix J.

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 Proposed Project.

DREDGED MATERIAL DISCHARGE ZONES

The Proposed Project does not cross any ODMDS. The nearest ODMDS is located approximately 2.1 mi (3.4 km) southwest of the Offshore Pipelines and as such, no impact to ODMDS is anticipated a result of the Proposed Project.

COMMERCIAL FISHING

During operation, an approximately 3,609-ft (1,100-m) radius safety zone will be established around the SPM buoy systems. 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, permanent 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 systems is considered a low vessel traffic area and the amount of unrestricted fishing area available in the vicinity of the Proposed Project, offshore of Texas, and the Gulf overall, the no-fishing zone associated with the SPM buoy systems will 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 Pipelines will be buried to a minimum of 3 ft (1 m) and as such will not impede commercial fishing activities. Further, operation of pipelines is not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species). Overall, negative effects on commercial fishing from operation of the Proposed Project will be negligible.

12.2.4.2.3 RECREATION

RECREATIONAL BOATING

Operation of the SPM buoy systems could result in negative effects on recreational boaters due to the restricted area that will be created by the establishment of an approximately 3,609-ft (1,100-m) radius safety zone. As discussed in Section 12.2.2.3.4, 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 Boatmen’s Reef, which is the closest artificial reef to the proposed SPM buoy systems site (Figure 12-10).

Neither the Aransas Pass-Rockport nor the POCC have ports that regularly receive cruise ships engaged in multi-day trips that would transit the fairways north and east of the SPM buoy systems 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 Proposed Project vicinity.

Service vessels will frequent the SPM buoy systems during operation for regular maintenance and tugboats will be deployed to meet vessels calling on the Proposed 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 Proposed 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 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 approximately 3,609-ft (1,100-m) radius safety zone around the SPM buoy systems. Because there are so many other accessible offshore fishing areas in proximity to the SPM buoy systems, the loss of access to the restricted area is unlikely to cause significant direct effects on recreational offshore fishing. Given only about 2 percent of angler-effort in the vicinity of the Proposed Project occur in the EEZ off the coast of Texas, effects from operation of the SPM buoy systems on recreation fishing will be negligible.

Once installation is complete, the Offshore 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 (Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species). Overall, negative effects on recreational fishing from operation of the Proposed Project will be negligible.

12.2.4.2.4 AESTHETICS

The SPM buoy systems will be located 17.0 mi (27.4 km) 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. In addition, the SPM buoys will be submerged below the water surface and so the presence of the SPM buoys would not be visible unless a very large crude carrier (VLCC) is present, at which point, the viewshed would consist of vessels which would be consistent with the current viewshed. Overall, the visual impact resulting from the presence of the SPM buoy systems is anticipated to be negligible.

12.2.4.3 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: Navigation, Safety and Security.

12.2.5 Proposed Project Decommissioning Impacts

12.2.5.1 Onshore/Inshore

At the end of its useful life (50 years), the Proposed Project would be decommissioned. Decommissioning of the proposed Onshore and Inshore Pipelines would consist of purging the pipe of crude oil liquids and filling them with water. No decommissioning activities are anticipated to occur in onshore or inshore waterbodies. The Harbor Island Booster Station will be dismantled and removed; removal activities will be similar in scope to those discussed for the station's construction. Once the Harbor Island Booster Station has been decommissioned, the terrestrial habitat will be restored and no further land disturbance will be required. As such, no permanent impact to land/zone use, commercial and recreational activities, or aesthetic conditions are anticipated as a result of the decommissioning phase.

12.2.5.2 Offshore

At the end of its useful life, all Offshore Components associated with the Proposed Project would be disassembled and brought to shore for offsite disposal. The Offshore Pipelines (from a point about 3,900 ft [1,188.7 m] offshore) 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 Proposed Project prior to its construction would be allowed to resume. As such, no permanent impact to marine zone use, offshore commercial and recreational activities, or offshore aesthetic conditions are anticipated as a result of the decommissioning phase.

12.2.6 Summary of Proposed Project Impacts

12.2.6.1 Proposed Project Construction Impacts

12.2.6.1.1 ONSHORE AND INSHORE

The entirety of the Proposed Project is within the Texas Coastal Management Zone. Use of HDD construction methods will avoid any sensitive shallow water and shoreline habitat, as well as surface impacts as the pipelines are expected to be relatively deep. The Inshore Pipelines will be installed using open-cut trenching. BWTT will install appropriate erosion controls along its construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels. Overall the Proposed Project is anticipated to have negligible impact on coastal zones during construction.

During the construction of the Onshore Pipelines and Onshore Components of the Inshore Pipelines (i.e., impacts on the coastal islands), land use will be disturbed within the 125-ft (38.1-m) ROW. The Onshore and Inshore Pipelines will cross four main types of land use, in addition to open water areas: agricultural land, windfarms, residential areas, and coastal islands. The primary impact on agricultural areas will be the temporary loss of production during and shortly after construction is completed. All agricultural areas disturbed during construction will be restored in accordance with landowner agreements and will be available for agricultural use immediately upon completion of construction or restoration. With the above mitigation measures in place, any impacts to agricultural areas as a result of the construction of the Proposed Project are anticipated to be minimal and not significant. The Onshore Pipelines will cross the Papalote Creek Wind Farm near its western origination point. While the Onshore Pipelines do cross the access paths of a number of wind turbines, and will be within about 100 ft (30 m) of individual turbines, construction will not directly affect any wind turbines. Approximately 4.0 mi (6.4 km) of the Onshore Pipelines' ROW closest to the GOM is located in an urban area associated with the City of Aransas Pass, with a limited residential presence. Increased levels of dust due to soil movement, and artificial light from construction machinery within the vicinity of residential homes could potentially create an annoyance for local residents. In addition, typical pipeline construction and HDD installation of the pipelines will result in noise impacts in the vicinity of construction. With BWTT's planned mitigation measures in place, such as BMPs, dust suppression, and construction lighting limitations, any impact to residential areas within the study area is anticipated to be minimal and not significant. Trenching on

Stedman and Harbor Islands will be adjacent to existing disturbance (e.g., roads and power lines). San Jose Island will be the staging area for two HDDs. HDD noise is not anticipated to be perceptible at the public beach. Upon completion of pipeline construction, the pipeline ROW will be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and will be returned to a vegetated state. Given the negligible change in noise levels at the public beach, and BWTT's commitment to reseeding vegetation within the disturbed areas, impacts on San Jose Island are anticipated to be minor and short-term.

The proposed Onshore Pipelines do not come within 1,000 ft (304.8 m) of a public park or beach. As such, the construction of the Onshore and Inshore Pipelines is not anticipated to have an impact on parks and recreation during construction. The Inshore Pipelines will be constructed using a combination of HDD and open-cut methods. All open water areas where recreational boating and fishing could occur will be crossed using HDD construction methods, which would allow boaters and fishermen unrestricted access to inshore waters. Overall, construction of the Inshore Pipelines will have a negligible impact on recreational activities.

During construction of the pipelines, 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. BMPs, such as dust suppression and construction lighting limitations, will be used to minimize the alteration of the viewshed. The use of the HDD construction method will also help limit potential impacts to the aesthetics of the onshore and inshore areas. On completion of pipeline construction, the pipeline ROW will be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and will be returned to a vegetated state. Overall, with mitigation in place, any adverse impact to aesthetics and visual amenity within the vicinity of the onshore and inshore activities during construction is anticipated to be short-term and minor.

Eight active leases were identified within the immediate vicinity of the Inshore Pipelines; however, no active leases are crossed by the inshore elements of the Proposed Project. As such, no impact is anticipated to inshore oil and gas activities as a result of the Proposed Project construction. The proposed Inshore Pipelines will cross a total of 69 existing inshore pipelines. To minimize any potential impact to existing pipelines, BWTT will undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Inshore Pipelines to determine the existing pipelines' exact locations, depths, and conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the proposed Inshore Pipelines is anticipated to be temporary and minor.

The proposed Inshore Pipelines will not traverse any active dredge placement areas. Overall, no adverse impacts to active dredge placement areas are anticipated as a result of the proposed Inshore Pipelines.

12.2.6.1.2 OFFSHORE

Installation of the Proposed Project is not likely to affect offshore oil and gas activities in the vicinity of the Proposed Project. The proposed Offshore Pipelines cross a total of three existing offshore pipelines. To minimize any potential impact to existing pipelines, BWTT will undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Offshore Pipelines to determine the existing pipelines' exact locations, depths, and conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Offshore Pipelines are anticipated to be temporary and minor. There are no OCS non-energy minerals lease areas in the vicinity of the Proposed Project; as such, no impact to OCS non-energy minerals resources is anticipated as a result of Project installation and commissioning.

The Proposed Project does not cross any established fairways. Establishment of a temporary safety zone during installation of the Proposed Project is not likely to significantly affect commercial shipping or activities.

The installation of the Project would provide a new feature/activity within the landscape for military operations and training in the area, resulting in a beneficial but negligible impact to military activities. No adverse impacts to military activities are expected as a result of the Proposed Project construction.

The closest USCG lightering zone to the Proposed Project is the Southtex-lightering Zone, located approximately 55.0 mi (88.5 km) from the proposed SPM buoys. Due to the lightering zone being so far removed from the Proposed Project area, it is not anticipated that the Proposed Project will require any undue restrictions on the lightering zone or lightering operations. As such, the Proposed Project is anticipated to have no impact on lightering zones.

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 Proposed Project.

The nearest ODMDS is located approximately 2.1 mi (3.4 km) southwest of the proposed Offshore Pipelines and as such, no impact to ODMDS is anticipated a result of the Proposed Project.

During the 16-week construction period of the SPM buoy systems, 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. 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 Proposed Project vicinity are anticipated. Nearshore and offshore recreational boaters would be prohibited from transiting through the temporary safety zones associated with construction of the Proposed Project. As neither the Aransas Pass-Rockport nor the POCC regularly receive cruise ships engaged in multi-day trips, shipping fairways near the Proposed Project are not likely to support this activity. Overall, construction of the Proposed Project will have a negligible impact on recreational boating. During the 16-week construction period of the SPM buoy systems, recreational fishing will be 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 systems site, and the lack of unique fishing opportunities afforded by the Offshore Project site.

The SPM buoy systems will be constructed 17.0 mi (27.4 km) 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.

12.2.6.2 Proposed Project Operation Impacts

12.2.6.2.1 ONSHORE AND INSHORE

Due to the buried nature of the pipelines (minimum of 3 ft [1 m] cover), once operational, the Onshore and Inshore Pipelines are anticipated to have no impact to coastal zones. Once construction has been completed, the ROWs of the Onshore and land-based Inshore Pipelines will be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the permitting authority or the landowner, and will be returned to a vegetated state. Overall impacts to land use due to operations will be permanent but negligible.

Once operational, the Onshore and Inshore Pipelines are anticipated to have no impact to recreational parks and beaches. Once installation is complete, the pipelines will be buried and as such will not impact recreational boating or fishing activities. Since the Proposed Project pipelines will be buried and land revegetated, no impact to aesthetics and visual amenity resulting from the Onshore and Inshore Pipelines during operation is anticipated. The Harbor Island Booster Station will result in permanent, but minor impacts. Once operational, the Proposed Project is anticipated to have no impacts on existing offshore oil and gas activities, existing inshore pipelines, other submerged infrastructure, or dredge placement areas.

12.2.6.2.2 OFFSHORE

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 Proposed 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. Once operational, the Proposed Project is anticipated to have no impacts on Offshore Pipelines and other submerged infrastructure. There are no OCS non-energy minerals lease areas in the vicinity of the Proposed Project. Operation of the Proposed Project would not affect this resource; as such, no impact is anticipated.

During operation, any vessels that would otherwise transit through the Proposed 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 Proposed Project is anticipated to result in a negligible impact on marine shipping and commercial port activity.

Any military activities that occur in the vicinity of the Proposed 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 Proposed Project becomes a known element in the area, military operations will continue as normal. Operations of the Proposed Project would have no impact on military uses in the area.

The closest USCG lightering zone to the Proposed Project is the Southtex-lightering Zone, located approximately 55.0 mi (88.5 km) from the SPM buoy systems; as such, operation of the Proposed Project is anticipated to have no impact on lightering zones.

No coral reefs have been identified near the Proposed Project; as such, no impacts to coral reefs are anticipated as a result of the Proposed Project. The Proposed Project does not cross any ODMDs. The nearest ODMDs is located approximately 2.1 mi (3.4 km) southwest of the Offshore Pipelines and as such, no impact to the ODMDs is anticipated a result of the Proposed Project.

During operation, 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. However, given the location of the SPM buoy systems is considered a low vessel traffic area and the amount of unrestricted fishing area available in the vicinity of the Proposed Project, offshore of Texas, and the Gulf overall, the no-fishing zone associated with the SPM buoy systems will result in negligible impacts in commercial fishing activities. Once installation is complete, the Offshore Pipelines will be buried to a minimum of 3 ft (1 m) and as such will not impede commercial fishing activities.

Operation of the SPM buoy systems could result in negative effects on recreational boaters due to the restricted area that will be created by the establishment of the safety zone. Neither Aransas Pass-Rockport nor the POCC have ports that regularly receive cruise ships engaged in multi-day trips that would transit the fairways north and east of the SPM buoy systems site. Service vessels will frequent the SPM buoy systems during operation for regular maintenance and tugboats will be deployed to meet vessels calling on the Proposed Project. Given the level of marine traffic associated with nearby ports, commercial fishing, and recreation fishing and boating in the Proposed Project vicinity, the presence of these support vessels will not have a significant effect on the experience of recreational boating offshore of Texas. Overall, the impact of Project operation on recreational boating will be negligible. Similar to recreational boating, offshore recreational fishing will be prohibited within the safety zone around the SPM buoy systems. Because there are so many other accessible offshore fishing areas in proximity to the SPM buoy systems, the loss of access to the restricted area is unlikely to cause significant direct effects on

recreational offshore fishing. Overall, negative effects on recreational fishing from operation of the Proposed Project will be negligible.

The SPM buoy systems will be located 17.0 mi (27.4 km) offshore and therefore will not be visible from the shore. Overall, the visual impact resulting from the presence of the SPM buoy systems is anticipated to be negligible. 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.

12.2.6.3 Proposed Project Decommissioning Impacts

12.2.6.3.1 ONSHORE/INSHORE

At the end of its useful life (50 years), the Proposed Project would be decommissioned. Decommissioning of the proposed Onshore and Inshore Pipelines would consist of purging the pipe of crude oil liquids and filling them with water. No decommissioning activities are anticipated to occur in onshore or inshore waterbodies. The Harbor Island Booster Station will be dismantled and removed; removal activities will be similar in scope to those discussed for the station's construction. Once the Harbor Island Booster Station has been decommissioned, the terrestrial habitat will be restored and no further land disturbance will be required. As such, no permanent impact to land/zone use, commercial and recreational activities, or aesthetic conditions are anticipated as a result of decommissioning.

12.2.6.3.2 OFFSHORE

At the end of its useful life, all Offshore Components associated with the Proposed 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 Proposed Project prior to its construction would be allowed to resume. As such, no permanent impact to marine zone use, offshore commercial and recreational activities, or offshore aesthetic conditions are anticipated as a result of the decommissioning phase.

12.3 Alternative Project

The Alternative Project would include installation of approximately 48.6 mi (78.2 km) of dual, 30-inch-diameter pipeline and the offshore SPM buoy systems located in 87.0 ft (26.5 m) of water, within the EEZ. Impacts on aquatic habitats would be limited to those components of the Alternative Project that cross waterbodies within the onshore environment or are in inshore (Corpus Christi Bay) or offshore (seaward of Mustang Island) locations; those impacts are discussed below. Refer to Appendix A: Construction, Operation and Decommissioning Procedures, for a detailed description of techniques, procedures, and phases of the Alternative Project that were used to evaluate environmental consequences in the following sections.

12.3.1 Alternative Project Area

12.3.1.1 Commercial and Recreational Environment Study Area

The Alternative Project includes two SPMs located 15.4 mi (28.4 km) or more off the coast of Mustang Island, approximately 18.9 mi (30.4 km) southwest of the Proposed Project SPMs. The Alternative Offshore Pipelines would reach landfall at Mustang Island, crossing the beach and an area of residential and vacation homes, approximately 10.5 mi (16.9 km) southwest of the Proposed Project, before crossing the eastern portion of Corpus Christi Bay and arriving back onshore at Ingleside on the Bay within an industrial landscape. The Alternative Onshore Pipelines then travel across open vegetated land within an established ROW, pass within 200 ft (61.0 m) of residential areas to the southwest and 300 ft (91.4 m) to the northeast, before entering further industrial land and continuing on to agricultural land. The Alternative Onshore Pipelines continue north-northwest, traveling across agricultural land, for approximately 5.0 mi (8.0 km) before converging with the proposed Onshore Pipelines, near the intersection of TX-35 and Route 91A, the remaining 13.5 mi (21.7 km) across agricultural land.

As with the Proposed Project, the Alternative Project is located within the seven-county Commercial and Recreational Study Area as described in Section 12.2.1.1, as shown in Figure 12-11.

12.3.1.2 Aesthetic Environment Study Area

As discussed in Section 12.2.1.2, the aesthetic quality of an area can only be appreciated when that area is seen; as such, the study area for this aesthetic environment assessment was limited to an area within which the Project or its impacts could be seen. To account for the varied potential visual receptors (see Section 12.2.1.2), for this aesthetic environment assessment, the study area was comprised of an area 1 mi (1.6 km) from the boundary of the Alternative Project footprint, as depicted in Figure 12-12.

12.3.2 Alternative Project Existing Conditions

12.3.2.1 Onshore

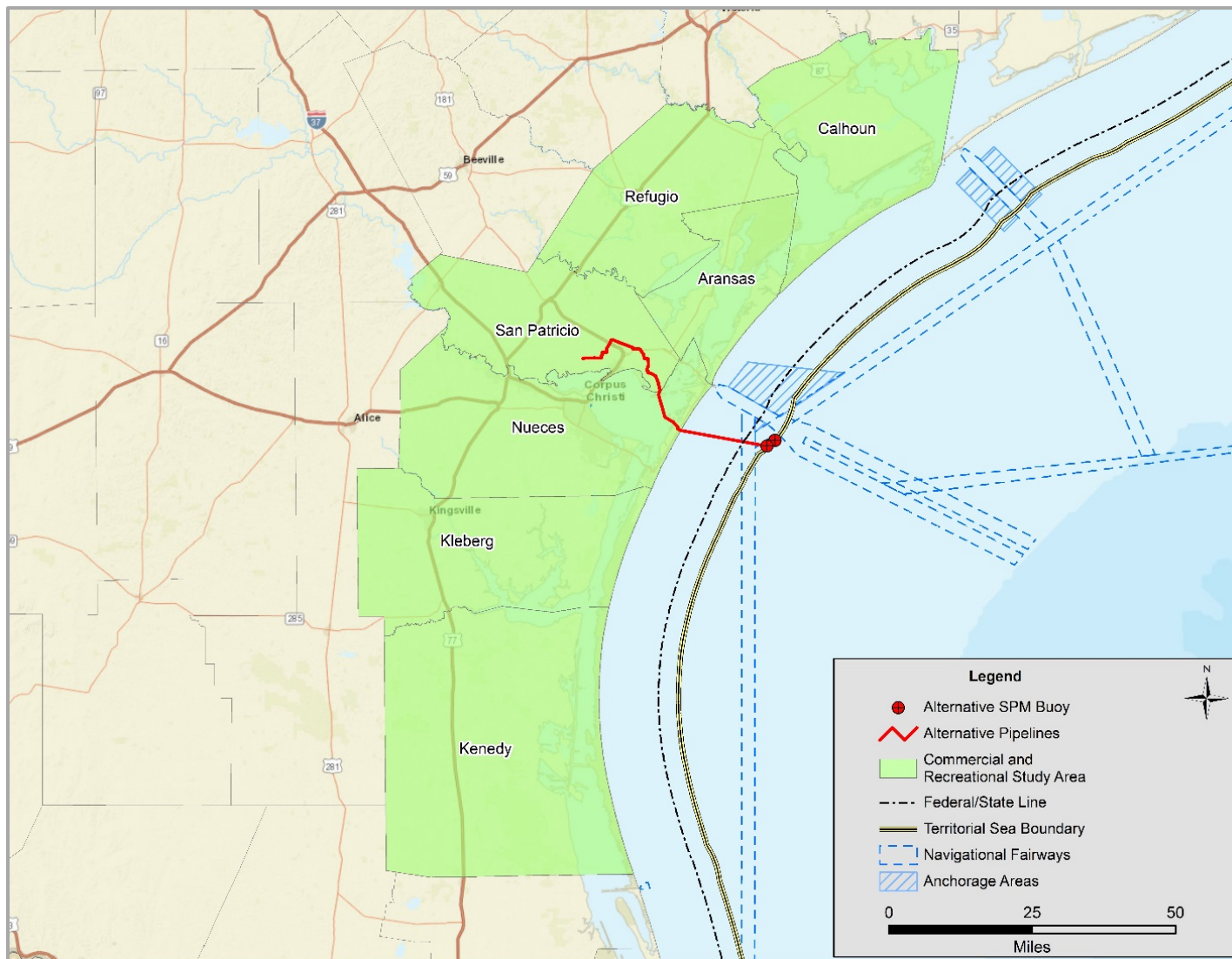
12.3.2.1.1 LAND USE

The land use in the vicinity of the Alternative Onshore Pipelines is generally agricultural, with the exception of the approximately 6.0 mi (9.7 km) closest to the mainland shoreline (Figure 12-13; Sources: BOEM 2019a). The Alternative Onshore Pipelines begin within an industrial landscape at Ingleside on the Bay, alongside Flint Hills Resources Refinery, then travel across open vegetated land within an established ROW, pass within 200 ft (61.0 m) of residential areas to the southwest and 300 ft (91.4 m) to the northeast, before entering further industrial land and continuing on to agricultural land. The Alternative Onshore Pipelines continue north-northwest, traveling across agricultural land, for approximately 5.0 mi (8.0 km) before meeting the path of the Proposed Project and turning west and traveling for a further 13.5 mi (21.7 km) in the same proposed footprint of the Proposed Project, across agricultural land and wind farms (Figure 12-13; BOEM 2019a).

12.3.2.1.2 RECREATION

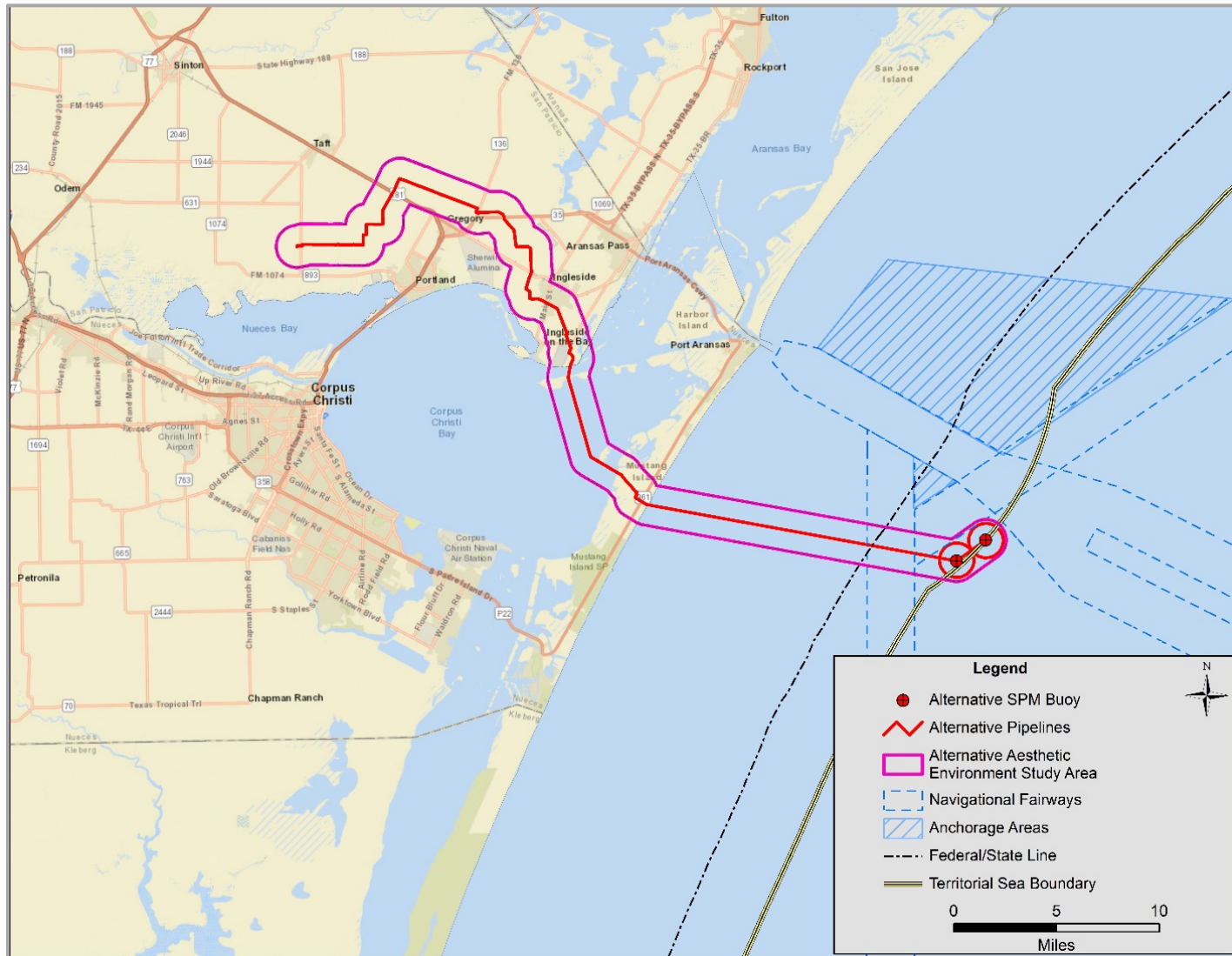
The majority of the recreation facilities within the study area are focused to the south along the shoreline and are geared towards day and weekend tourism, rather than purely local resident recreation, as discussed below (see Section 12.3.2.2.2 Inshore, Recreation, below). Within the vicinity of the Alternative Onshore Pipelines there are multiple public recreation parks, RV parks and campsites, hotels, and hike and bike trails. The closest recreational area, Live Oak Park, is located approximately 0.3 mi (0.5 km) west of the Alternative Onshore Pipelines. Live Oak Park is a city park set on approximately 90 oak-covered ac in South Ingleside. The park offers some covered picnic areas, an 18-hole disc golf course which has been described as one of the most challenging in South Texas and is used for two major tournaments each year, three lighted tennis courts, a lighted basketball court, a softball field, a playground for children, and miles of nature trails. Additionally, the park is designated as the official site #55 on the Great Texas Coastal Birding Trail and contains a freshwater lake that is home to a variety of birds and is located on the migration trail through the area. Live Oak Park is also used as the site for local events including the Ingleside Chamber of Commerce's annual Renaissance Faire and the annual Palomas Fun Run. (City of Ingleside 2019)

Figure 12-11: Commercial and Recreational Study Area in Relation to the Alternative Project



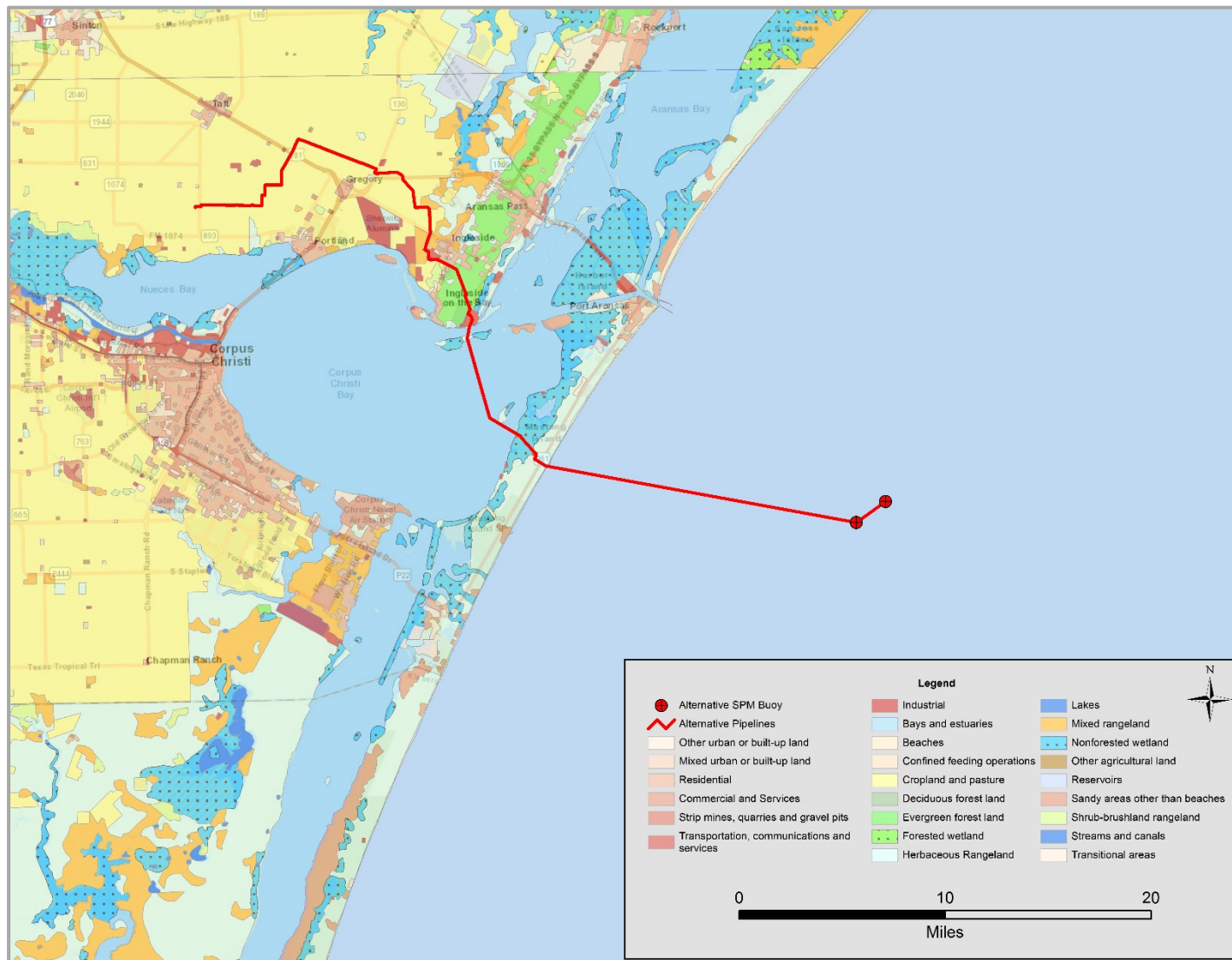
Source: BOEM 2019a

Figure 12-12: Alternative Project Aesthetic Environment Study Area



Sources: BOEM 2019a

Figure 12-13: Land Cover in the Vicinity of the Alternative Project



Source: U.S. Geological Survey (USGS) 2019

12.3.2.1.3 AESTHETICS

Most of the Alternative Onshore Pipelines traverse agricultural pasture land with limited visual receptors consisting mainly of rural workers and passing traffic. As the pipelines move from north to south, towards the GOM, the Alternative Onshore Pipelines pass through Ingleside, within a vegetated, and in places industrial, ROW, traveling within 200 ft of residential areas to the southwest, 300 ft (91.4 m) to the northeast, and directly crossing the main entrance way of Ingleside Primary School on Achievement Boulevard. The current view from these homes and the school, in the direction of the Alternative Onshore Pipelines, is rural, with some vegetation, tree coverage, additional homes, roadways, and powerlines. As the pipelines move towards the shoreline, the pipelines traverse within a vegetated ROW with limited visual receptors, before finally traversing to the east of Flint Hills Resources Refinery, where visual receptors are likely to be limited to workers within the refinery, and then finally reaching Corpus Christi Bay and starting the inshore element of the Alternative Project.

12.3.2.2 Inshore

12.3.2.2.1 COASTAL ZONE USE

The Alternative Inshore Pipelines come ashore at Mustang Island, crossing the beach and an area of residential and vacation homes, before crossing Texas State Highway 361, and an area of non-forested wetland. The Alternative Inshore Pipelines then cross the eastern portion of Corpus Christi Bay and arrive back onshore at Ingleside on the Bay within an industrial landscape, alongside Flint Hills Resources Refinery, where they transition to the Alternative Onshore Pipelines.

Mustang Island is a barrier island, stretching 18.0 mi (29.0 km) long from Corpus Christi to Port Aransas. The Alternative Inshore Pipelines cross Mustang Island approximately 2.0 mi (3.2 km) southwest of Mustang Island State Park in an area of herbaceous rangeland which is home to dispersed residential and vacation homes and exits the island via non-forested wetland (Figure 12-13).

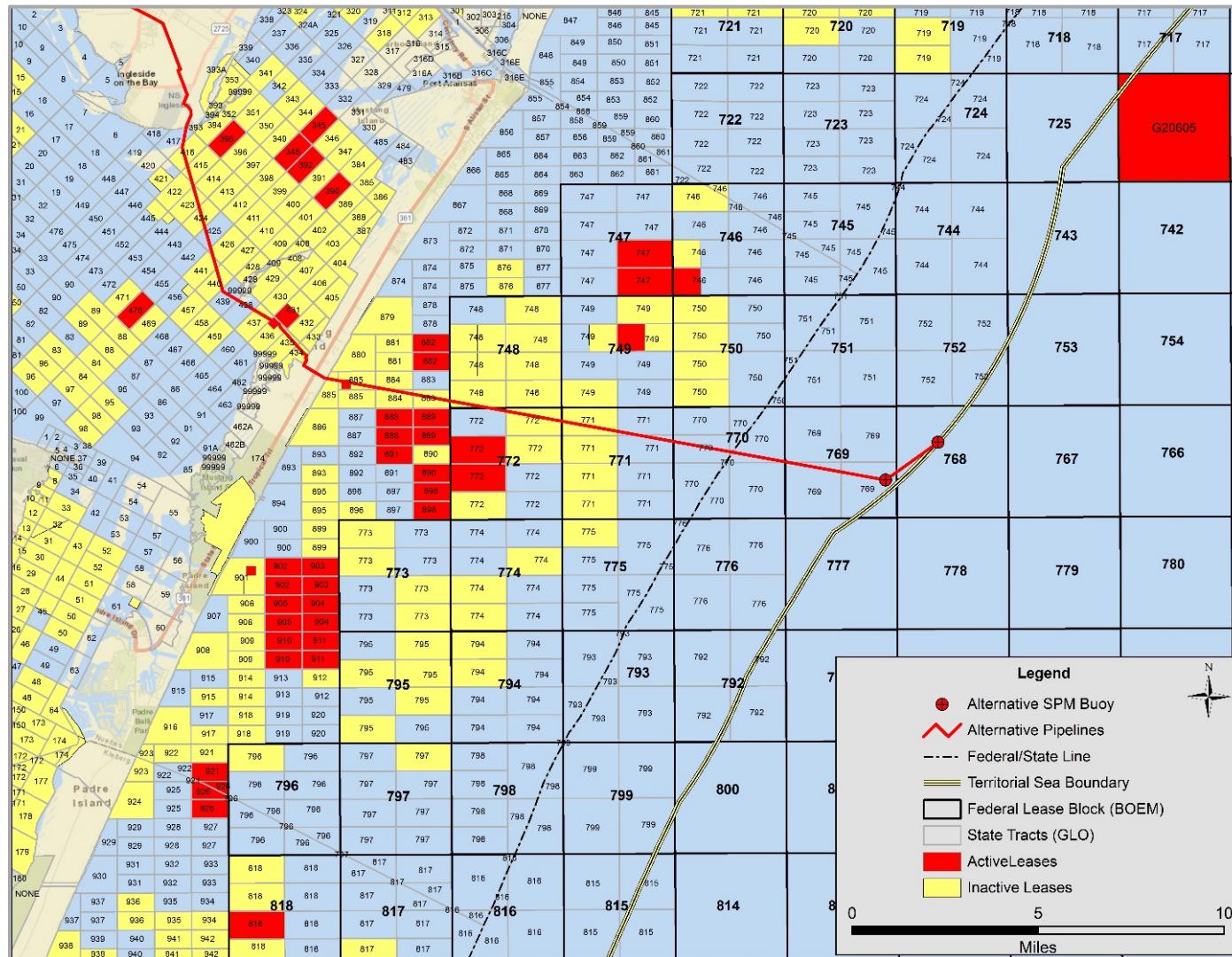
As the Alternative Inshore Pipelines cross Corpus Christi Bay, they cross multiple inactive BOEM oil and gas lease blocks, pass directly to the southwest of active Lease Block 431, and cross active Lease Block 436 (Figure 12-14). Within Block 436, the Alternative Inshore Pipelines cross multiple existing pipelines (Figure 12-15). Oil and gas activity within proximity of the offshore elements of the Alternative Project are discussed below in Section 12.3.2.2.4.

12.3.2.2.2 RECREATION

The Alternative Inshore Pipelines cross Mustang Island approximately 2.0 mi (3.2 km) southwest of Mustang Island State Park. Mustang Island State Park is a public park that covers 3,954 ac and has a 5-mi beachfront. The land was acquired from private owners in 1972 and opened to the public in 1979. Visitors to the park enjoy the beach, swim and surf, fish in the bay, picnic, hike, mountain bike, kayak, bird watch (especially during spring and fall migrations) and geocache. The park also has a campsite which includes 48 water and electric campsites or 50 drive-up primitive sites. (TPWD 2019c)

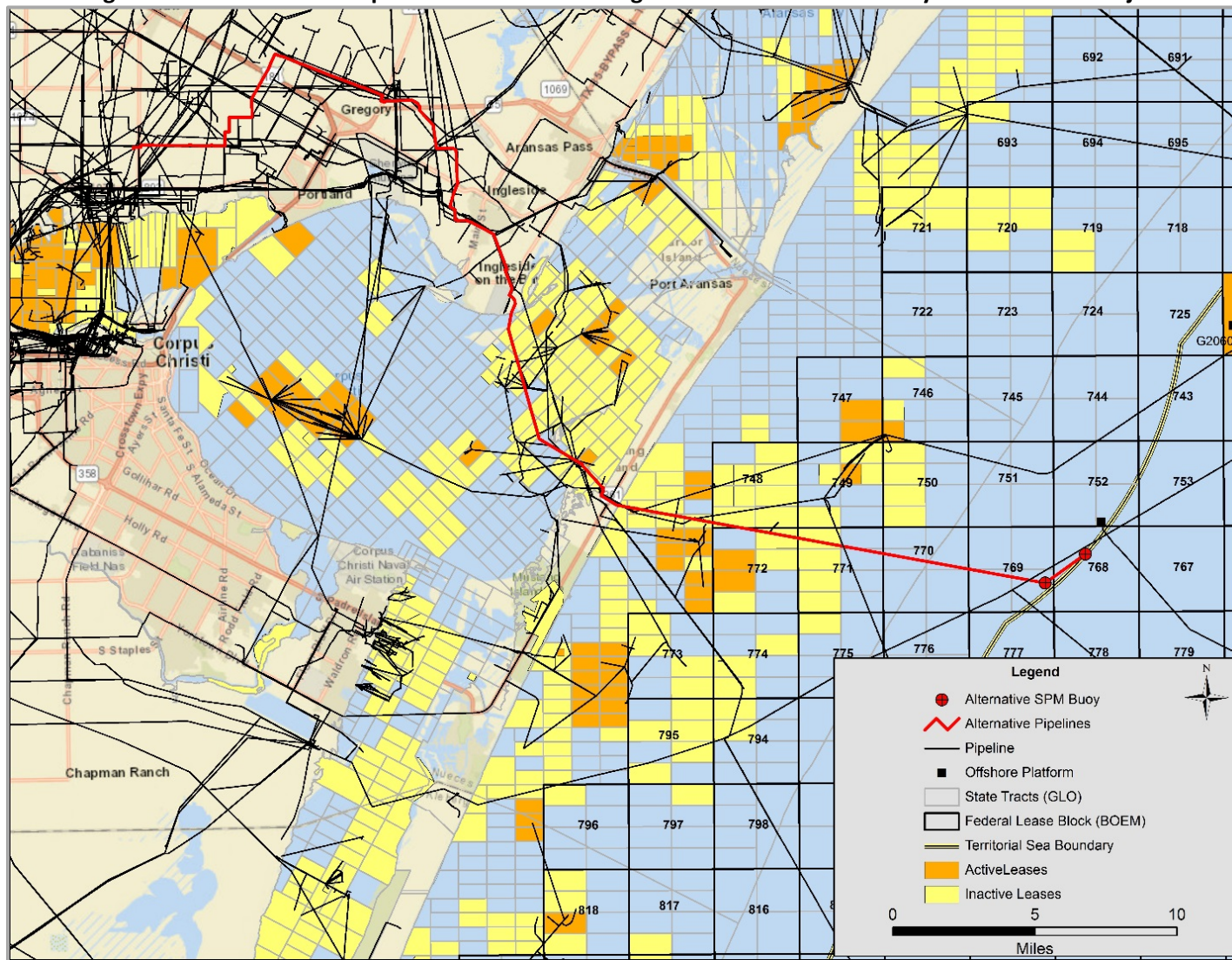
The beaches of Port Aransas on Mustang Island are popular tourist attractions. There are three main beaches in Port Aransas. Starting at the northern most point of Mustang Island is the Port Aransas South Jetty. Moving along the beach to the south (towards North Padre Island) is the Nueces County Beach called IB Magee Beach. Continuing South takes beach visitors past Beach Access Road 1 then past Beach Access Road 2 some 11.0 mi (17.7 km) later.

Figure 12-14: Lease Blocks Intersected by the Alternative Project



Source: GLO TX 2019; BOEM 2019a.

Figure 12-15: Offshore Pipelines or Other Submerged Infrastructure in Vicinity of Alternative Project



Sources: BOEM 2019a

12.3.2.2.3 AESTHETICS

The location of the Alternative Inshore Pipelines is relatively flat with typical coastal views. While the northern aesthetic study area is utilized mainly by road users and workers of the Flint Hills Resources Refinery, the southern extent of the aesthetic study area is utilized by owners of vacation homes, tourists, nature enthusiasts, and for fishing and bird watching. As such, the aesthetics of the location, especially the southern extent, are greatly appreciated by those who visit the area, and highly sensitive visual receptors are commonplace. Residential and/or vacation homes are located within the aesthetics study area on Mustang Island.

Visual receptors of the Alternative Inshore Pipelines would be mainly limited to road users and workers of the Flint Hills Resources Refinery at the pipelines' northern extent, recreational boaters and fishermen as the Alternative Inshore Pipelines traverse the Corpus Christi Bay, and limited residential and recreational receptors where the Alternative Inshore Pipelines cross Mustang Island.

12.3.2.2.4 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

The Alternative Inshore Pipelines traverse one block with an active lease (Block 436) (BOEM 2019a) (Figure 12-14).

INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

There are both in-service and abandoned pipelines that exist within the vicinity of the Alternative Inshore Pipelines (BOEM 2019a). The Alternative Inshore Pipelines would cross a total of 126 pipelines (Texas RRC 2019) (Figure 12-15). Submerged cultural resources identified during surveys are discussed in Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

Dredge spoil placement areas within the vicinity of the Alternative Inshore Pipelines are used by the USACE to dispose of material dredged from the GIWW. There are a number of active dredged placement areas within the Corpus Christi Bay, the GIWW, and the vicinity of the Alternative Inshore Pipelines (USACE 2019) (Figure 12-16). The Alternative Inshore Pipelines would traverse two active dredge placement areas, PA 165 and PA 10 (USACE 2019) (Figure 12-16).

12.3.2.3 Offshore

12.3.2.3.1 MARINE ZONE USE

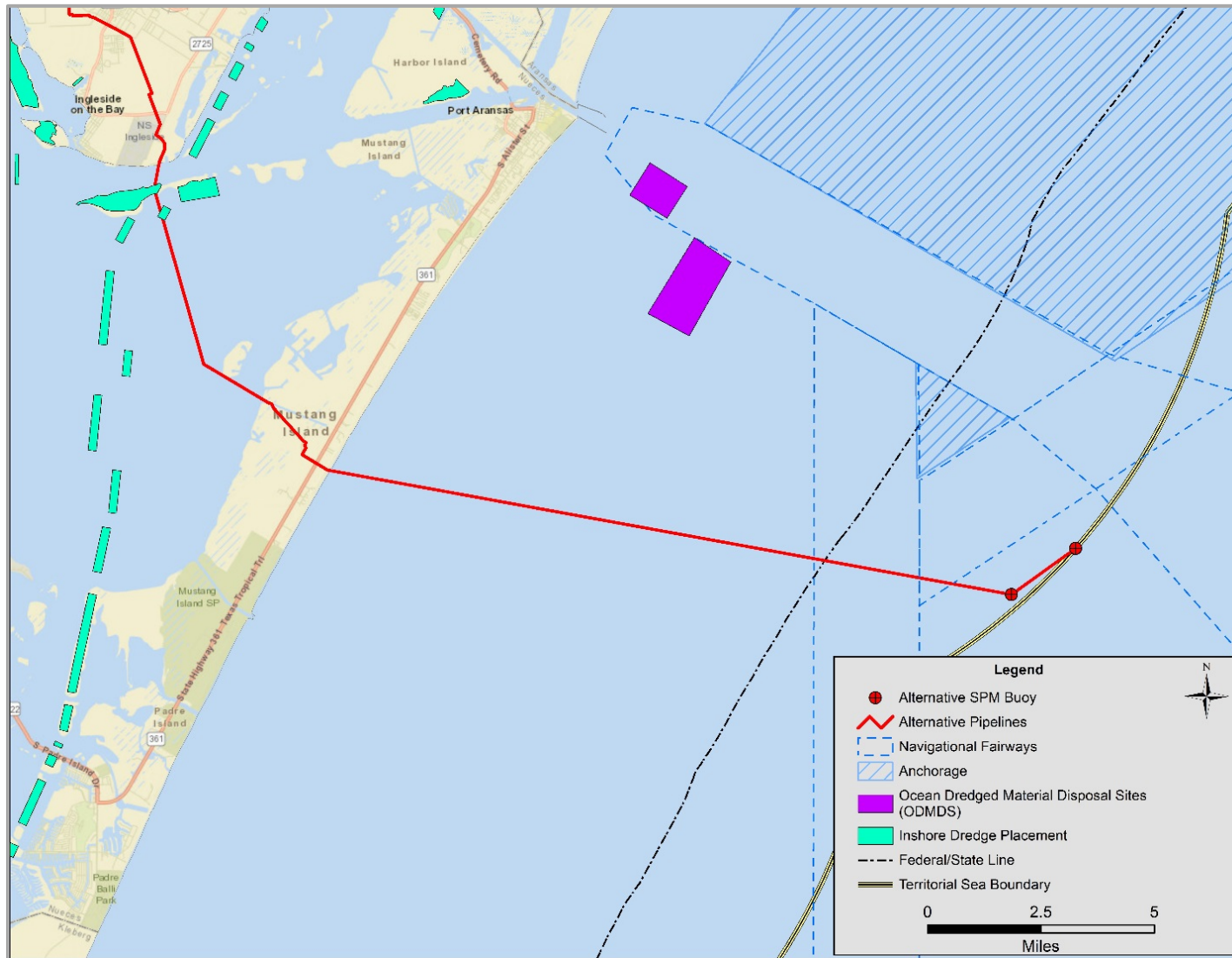
OFFSHORE OIL AND GAS ACTIVITY

There are no federal lease blocks with active leases traversed by the Alternative SPM buoy systems; however, the Alternative Offshore Pipelines traverse one active lease (Block 885) (Figure 12-14) (BOEM 2019a). 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 location of the Alternative SPM buoy systems (BOEM 2017, 2019c).

OFFSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

There are both in-service and abandoned pipelines that exist within the vicinity of the Alternative Offshore Pipelines (BOEM 2019a). The Alternative Offshore Pipelines would cross a total of seven existing Offshore Pipelines. The Alternative Offshore Pipelines would cross four in-service natural gas pipelines operated by Texas Costal Pipeline LLC (within blocks 885, 884, 883, and 748), and three abandoned natural gas pipelines, two operated by Texas Costal Pipeline LLC (within blocks 884 and 771), and one operated by Williams Gulf Coast Gathering Company LLC (within block 769) (Texas RRC 2019) (Figure 12-15). Submerged cultural resources identified during surveys are discussed in Section 9: Cultural Resources.

Figure 12-16: Active Dredge Placement Areas in Relation to the Alternative Project



Sources: USACE 2019; USEPA 2019

OTHER OCS NON-ENERGY MINERAL RESOURCES

Non-energy mineral resources generally refer 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. No federal OCS sand and gravel borrow areas under BOEM's purview occur within the vicinity of the Alternative Project. The closest federal OCS sand and gravel borrow is located past Houston, over 250.0 mi (403.3 km) northeast of the Alternative Project.

MARINE SHIPPING AND COMMERCIAL PORTS

In 2015, over 12,500 vessel calls were made to ports in Texas via navigational fairways (MARAD 2019). 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, 2019c). The POCC is the closest port to the Alternative 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 2019b). Marine traffic and ports within the commercial and recreational environment study area are further discussed in Section 12.3.2.3.4 below. The Alternative Offshore Pipelines traverse a major shipping fairway as depicted in Figure 12-17.

MILITARY USE

As discussed in Section 12.2.2.3.1, NAS Corpus Christi is located on the Encinal Peninsula surrounded by Corpus Christi Bay, Oso Bay, and the Laguna Madre (U.S. Navy 2019). The NAS Corpus Christi is located approximately 25.0 mi (40.2 km) west the Alternative SPM buoy systems and approximately 11.0, 8.0, and 10.0 mi (17.7, 12.9, and 16.1 km) from the Alternative Onshore, Inshore, and Offshore Pipelines, respectively. The Waldron Field NOLF is located approximately 26.0 mi (41.8 km) west of the Alternative SPM buoys, and 15.0, 12.0, and 13.0 mi (24.1, 19.3, and 20.9 km) from the Alternative Onshore, Inshore, and Offshore Pipelines, respectively. One military OPAREA, the Corpus Christi OPAREA, occurs within the vicinity of the Proposed Project, as identified on the Marine Cadastre database and as discussed in Section 12.2.2.3.1 (NOAA 2019). No other military bases or specialized military zones would directly transect the area to be utilized by any component of the Alternative.

LIGHTERING ZONES

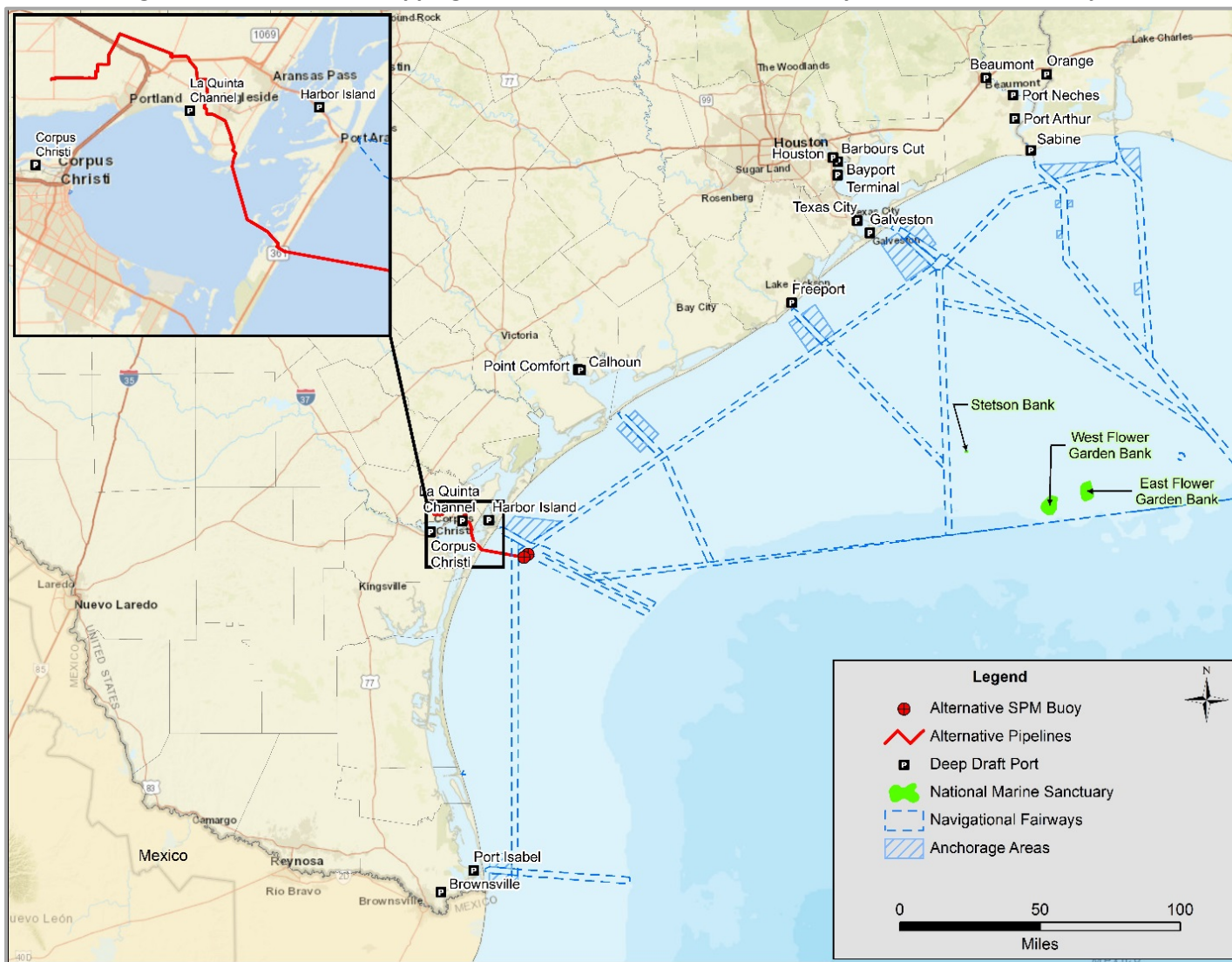
The closest USCG lightering zone, the Southtex-lightering Zone, is centered about 60.0 mi (96.6 km) from the Alternative SPM buoys. The localized lightering rendezvous location closest to the Alternative is the Offshore Corpus Christi No.1, located at 27.28 N, 96.49 W, approximately 32 nm (32 mi [51.5 km]) from the Alternative SPM buoy systems. Lightering zones are further discussed in Section 14: Navigation, Safety, and Security.

COASTAL ZONES

The entirety of the Alternative Project is within the Texas Coastal Management Zone. The Texas Coastal Management Zone extends along the entire length of the Texas coast, from Orange and Jefferson Counties bounding Louisiana to the east, to Cameron County at the Mexico border to the south.

The Federal CZMA 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.

Figure 12-17: Marine Shipping and Commercial Ports in the Vicinity of the Alternative Project



Sources: TXDOT 2019; BOEM 2019a.

12.3.2.3.2 PROTECTED OFFSHORE HABITATS

MARINE MANAGED AREAS

MMA's 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). MMA's can include MPAs, as a subset. MMA's and MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

The closest HAPC (Stetson Bank) is about 159.9 mi (257.3 km) east of the proposed location for the Alternative Project's SPM buoys. Additional discussion of EFH and assessments of biology and productivity of fish stocks is provided in Section 8: Wildlife and Protected Species and Appendix J.

CORAL REEFS

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 30.0 mi (48.3 km) of the Alternative Project (see Section 6: Aquatic Environment).

The Alternative Offshore Pipelines would however come in close proximity to an artificial reef, Lonestar Reef. The Lonestar Reef is approximately 40 ac in size, located at a depth of 60 ft (18.3 m), composed of three sunken barges, and is located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines (TPWD 2019e). Locations of artificial reefs in the vicinity of the Alternative Project can be seen on Figure 12-18: Recreational Features in the Vicinity of the Alternative Project, and further discussion on artificial reefs can be found in Section 6: Aquatic Environment.

OFFSHORE DREDGED MATERIAL DISCHARGE ZONES

Dredge material discharge zones are discussed in Section 12.2.2.2.4. The closest ODMDS to the Alternative Offshore Pipelines are located approximately 4.3 mi (6.9 km) northeast (Table 12-11) (Figure 12-16).

ODMDS Name	USEPA Region	Average depth	Area	Date Designated	Designated Use	Proximity to Alternative Project
Corpus Christi New Work ODMDS (formerly Homeport Project ODMDS)	6	50.0 ft (15.2 m)	1.40 sq. nm (1.9 sq. mi [4.8 sq. km])	September 30, 1998	Dredge material placement	4.3 mi (6.9 km) northeast
Corpus Christi Ship Channel (CCSC), TX	6	43.0 ft (13.1 m)	0.63 sq. nm (0.8 sq. mi [2.2 sq. km])	August 10, 1989	Dredge material placement	6.8 mi (10.9 km) northeast

Source: USEPA 2019

12.3.2.3.3 COMMERCIAL FISHING

Commercial fishing is an important marine use in offshore waters in the vicinity of the Alternative Project. Commercial fishing within the coastal zone and recreation study area is discussed in Section 12.2.2.3.3. EFH and assessments of biology and productivity of fish stocks are discussed in Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species. Finally, the economic contribution of commercial fishing in the region is discussed in Section 10: Socioeconomics.

12.3.2.3.4 RECREATION

RECREATIONAL BOATING

In 2014, over 580,000 boats were registered in Texas; boating safety is the responsibility of Texas game wardens (TPWD 2019c). Recreational boaters in the vicinity of the Alternative Project have a variety of launch points to choose from depending on the specific boating activity and destination for a given trip. There are 52 public recreational boat launches providing access to the bays and offshore waters off the coast of Texas in the vicinity of the Alternative Project, see Figure 12-18 (TPWD 2019d). Numerous additional boat ramps are available within 100.0 mi (160.9 km) of the Alternative Project and include boat ramps in neighboring counties; however, most recreational boaters nearby the Alternative Project would be expected to launch from ramps closer to the desired fishing location.

The Alternative Project SPM buoy systems location is in about 90 ft (27 m) of water, and the nearest artificial reef, Lonestar Reef (MU-770L), is located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines (TPWD 2019e). Active platforms in proximity to the Alternative Project would not be candidates for scuba activities.

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 approximately 159.9 mi (257.3 km) east of the Alternative Project. NMS are also discussed in Section 6: Aquatic Environment.

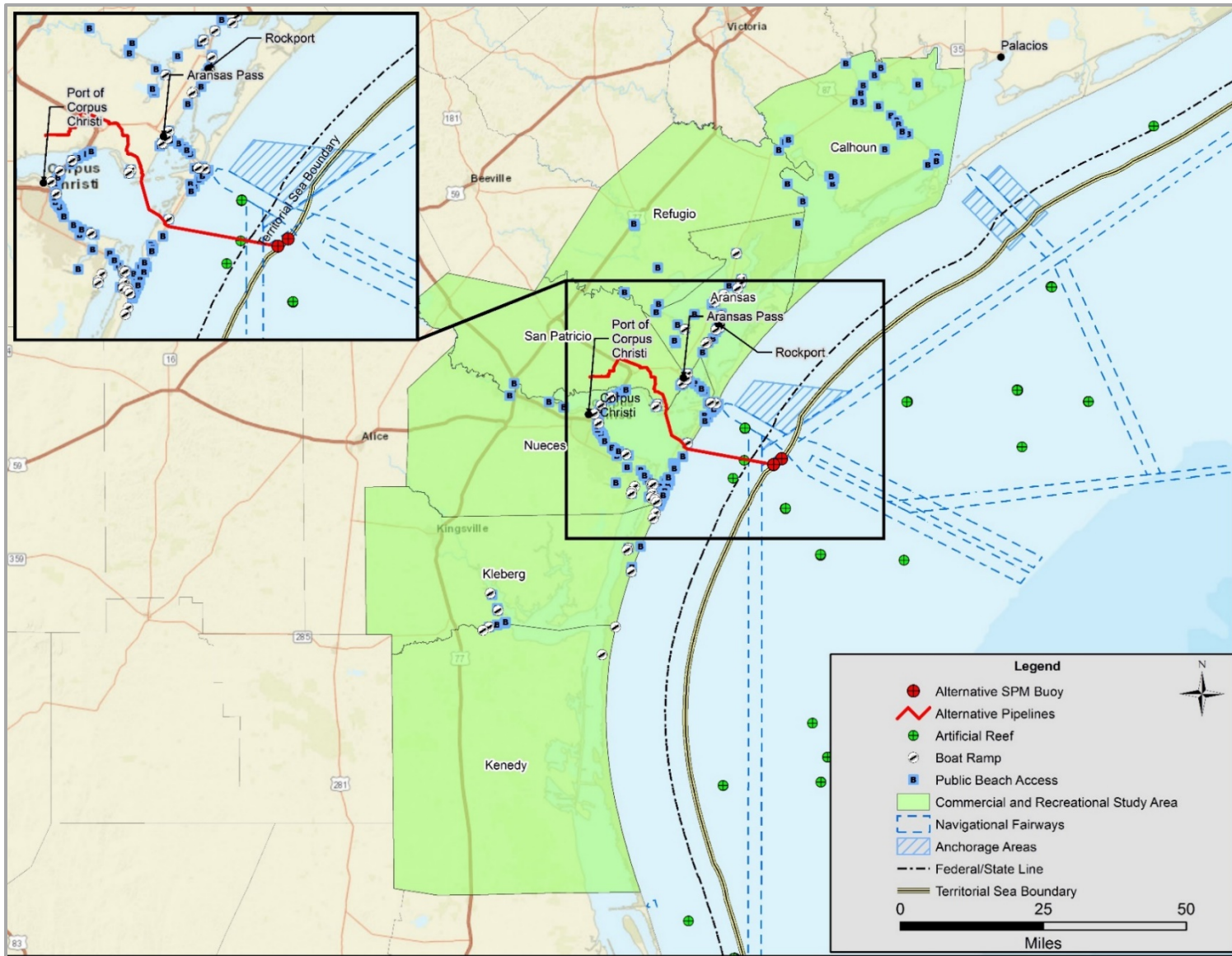
The Ports of Galveston and Houston on Galveston Bay are the closest cruise ship departure ports to the Alternative Project. Neither the POCC nor the Aransas Pass-Rockport are ports that regularly receive cruise ships engaged in multi-day trips. Cruise ships, or other recreational vessels, traveling north-south that do call at these ports are however likely to transit in or near the shipping safety fairways, one of which is traversed by the Alternative Offshore Pipelines (Figure 12-18).

RECREATIONAL FISHING

Based on the depth of the waters where the Alternative Project SPM buoy systems would be located (90 ft [27 m]), recreational activities in proximity to the Alternative Project would be considered offshore fishing; however, inshore fishing (in the San Antonio Bay System) and nearshore fishing (on the seaward side of Mustang Island) would also occur nearby the Alternative Project.

Recreational fishing within the coastal zone and recreation study area is discussed in Section 12.2.2.3.4. EFH for recreational fisheries is discussed in Section 8: Wildlife and Protected Species, and Appendix J: Essential Fish Habitat Assessment. The economic contribution of recreational fishing to the area is discussed in Section 10: Socioeconomics.

Figure 12-18: Recreational Features in the Vicinity of the Alternative Project



DEEPWATER PORT LICENSE APPLICATION FOR THE BLUEWATER SPM PROJECT
Volume II: Environmental Evaluation (Public)
Section 12 – Coastal Zone Use, Recreation and Aesthetics

Sources: TPWD 2019d; TPWD 2019e; BOEM 2019a.

12.3.3 Alternative Project Construction Impacts

12.3.3.1 Onshore and Inshore

12.3.3.1.1 COASTAL ZONE

The entirety of the Alternative Project is within the Texas Coastal Management Zone. The Alternative Inshore Pipelines would be installed using HDD and open-cut trenching across Corpus Christi Bay and Mustang Island. Trenching on Mustang Island would be adjacent to existing disturbance (e.g., roads and power lines). Further, BWTT would install appropriate erosion controls along its construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels, as described in BWTT's BMP Plan (Appendix V).

Overall the Alternative Project is anticipated to have minor impacts on coastal zone use during construction. Additional information concerning the potential for water quality and resource impacts is provided in Section: 4 Water Quality and Section 6: Aquatic Environment, respectively.

12.3.3.1.2 LAND USE

During the construction of the Alternative Onshore Pipelines and Onshore Components of the Inshore Pipelines (i.e., impacts on the coastal islands), land use would be disturbed within the 125-ft (38.1-m) construction ROW. The Alternative Onshore and Inshore Pipelines would cross four main types of land use, in addition to open water areas:

- Agricultural Land;
- Windfarms;
- Residential Areas; and,
- Coastal Islands.

In addition, multiple roads would be crossed during construction; however, the Alternative Project would cross all public, paved roads using bore crossing methods channels as described in BWTT's BMP Plan (Appendix V), or as otherwise allowed by the applicable permits.

AGRICULTURE

North of the City of Ingleside, most of the land crossed by the Alternative Onshore Pipelines is actively cultivated agricultural land. Construction of the Alternative Onshore Pipelines would disturb a 125-ft-wide construction corridor, with additional temporary workspaces as needed for installation of the pipelines. The primary impact on agricultural areas would be the temporary loss of production during and shortly after construction is completed. Additional impacts could include soil rutting or compaction due to construction equipment. BWTT would bury the Alternative Onshore Pipelines with a minimum cover of 3 ft (1 m). All agricultural areas disturbed during construction would be restored in accordance with landowner agreements and would be available for agricultural use immediately upon completion of construction or restoration. With the above mitigation measures in place, any impacts to agricultural areas as a result of the construction of the Alternative Project are anticipated to be minimal and not significant.

WIND FARMS

The Alternative Onshore Pipelines would cross the Papalote Creek Wind Farm near its western origination point. While the Alternative Onshore Pipelines do cross the access paths to a number of wind turbines, and would be within about 100 ft (30 m) of individual turbines, construction would not directly affect any wind turbines. Land use adjacent to and between the turbines is predominantly agricultural. To help minimize any adverse impacts and/or inconvenience to landowners and wind turbine owners, BWTT would coordinate with existing land and wind farm owners prior to construction and as described in BWTT's BMP Plan (Appendix V). With mitigation in place potential impacts to windfarms are anticipated to be temporary and negligible.

RESIDENTIAL AREAS

Approximately 6.0 mi (9.7 km) of the ROW for the Alternative Onshore Pipelines closest to the GOM is located in an urban area associated with the City of Ingleside. As the Alternative Onshore Pipelines travel through Ingleside, they pass within 200 ft (61.0 m) of residential areas to the southwest and 300 ft (91.4 m) to the northeast. In addition, the Alternative Onshore Pipelines pass Ingleside Primary School, approximately 350 ft (106.7 m) from the school building and crossing the primary school's main entrance on Achievement Boulevard. On Mustang Island the Alternative Project passes within 300 ft (91.4 m) of residential and vacation homes, before crossing Texas State Highway 361. Increased levels of dust due to soil movement, and artificial light from construction machinery within the vicinity of residential homes could potentially create an annoyance for local residents. In addition, typical pipeline construction and HDD installation of the pipelines would result in noise impacts in the vicinity of construction. Typical pipeline construction is expected to move along the pipeline route, such that any single area experiences only a short duration of construction noise. However, HDD construction requires stationary drilling equipment to operate for a longer timeframe. As described in Section 13: Meteorology, Air Quality, and Noise, estimated noise from construction of one HDD along the Onshore and Inshore Pipelines could exceed noise guideline levels and impact nearby residences; however, with the implementation of additional recommended mitigation, impacts would be minor. Because HDD construction would be limited to up to 9 weeks at each location, and given BWTT's intent to implement noise mitigation measures identified in Section 13: Meteorology, Air Quality, and Noise, noise impacts from HDD construction would be temporary and minor.

To minimize any potential impacts from soil movement and lighting, BWTT would utilize best practice soil removal and storage methods, described in Appendix V., during Alternative Onshore Pipelines construction, limit nighttime working in the vicinity of residential areas, and consult with local residents prior to construction. In addition, upon completion of pipeline construction for the Alternative Project, the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and would be returned to a vegetated state. With the above mitigation measures in place, any impact to residential areas within the study area is anticipated to be minimal and not significant.

COASTAL ISLANDS

The Alternative Inshore Pipelines would be installed using open-cut trenching across Mustang Island. Trenching on Mustang Island would be adjacent to existing disturbance (e.g., roads and power lines). Further, BWTT would install appropriate erosion controls along its construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels (see Appendix V). The Alternative Booster Station would also be placed on Mustang Island, resulting in the permanent conversion of vegetated habitat to an industrial site. Given the already disturbed nature of these islands, and the mitigation proposed to minimize impacts from sedimentation, construction impacts on these islands are anticipated to be minor and temporary.

HDD methods would be utilized at locations where the Alternative Inshore Pipelines cross wetlands on Mustang Island. Further discussion regarding potential impacts to wetlands is provided in Section 4: Water Quality.

As discussed in Section 13: Meteorology, Air Quality, and Noise, HDD noise is anticipated to be perceptible at the public beach and could result in more than a perceived doubling of sound (10 dB); however, impacts would be temporary. Upon completion of pipeline construction for the Alternative Project, the pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and would be returned to a vegetated state. Given the negligible change in noise levels at the public beach, and BWTT's commitment to reseeded vegetation within the disturbed areas, impacts on Mustang Island are anticipated to be minor and short-term.

12.3.3.1.3 RECREATION

The Alternative Onshore Pipelines' ROW is located approximately 0.3 mi (0.5 km) east of Live Oak Park, a city park, approximately 90 ac in size, and the Alternative Inshore Pipelines on Mustang Island is located 2.0 mi (3.2 km)

southwest of Mustang Island State Park. The Alternative Project ROW would not require any direct land take from public parks, however the close proximity of the Alternative Onshore Pipeline ROW to Live Oak Park would result in impacts such as dust due to soil movement, artificial light from construction machinery, and increased levels of noise in the vicinity of active construction, which could create an annoyance for local recreational users and wildlife within the park. Construction is expected to move along the pipeline route, such that any single area experiences only a short duration of construction noise, light, and dust impacts. As the Alternative Project is located approximately 2.0 mi (3.2 km) from the Mustang Island State Park, the Alternative Project is not expected to impact recreational activities within, or use of, the State Park.

Where the Alternative Project would traverse beaches or open water areas where recreational boating and fishing could occur, the Alternative Project would use a combination of HDD and open-cut methods. Recreational users of beaches within the immediate vicinity of the Alternative Project may experience disturbance due to artificial light from construction machinery and increased levels of noise in the vicinity of active construction; however, impacts would be short-term and temporary. Further, the availability of alternate recreational beach space within the immediate vicinity, such as those within Mustang Island State Park, would be unimpacted by construction and available to recreational beach goers.

Impacts on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities and associated noise. Recreational boaters and fishermen who utilize the Corpus Christi Bay may be displaced by the construction of the Alternative Inshore Pipelines where open-cut methods are used. Given the amount of boating and fishing opportunities in the near waters in the vicinity of the Alternative Project, boaters and fishermen could opt to recreate in nearby areas unaffected by construction. Further, construction activities are not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species). Overall, construction of the Alternative Inshore and Onshore Pipelines is anticipated to have a minor temporary impact on recreational activities.

12.3.3.1.4 AESTHETICS

During construction of pipelines, 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. Sensitive receptors of the Alternative Project include residents of Ingleside within the aesthetics study area, Ingleside Primary School, and residents and recreational users of Mustang Island within the aesthetics study area.

The aesthetics study area covers an area of 1.0 mi. (1.6 km), either side of the Alternative Project ROW. Within the aesthetics study area, the Alternative Onshore Pipelines pass through Ingleside, with the ROW located within 200 ft (61.0 m) of residential areas to the southwest, 300 ft (91.4 m) to the northeast, and directly crosses the main entrance way of Ingleside Primary School on Achievement Boulevard. Residential and/or vacation homes are located within the aesthetics study area on Mustang Island. At these locations, receptors would experience diminished views in the direction of the Pipelines during the construction phase. BMPs described in Appendix V, such as dust suppression and construction lighting limitations, would be used to minimize the alteration of the viewshed.

On completion of pipeline construction, the Alternative Pipeline ROW would be seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and would be returned to a vegetated state.

Due to the presence of construction activities in the Corpus Christi Bay, construction activities could also result in temporary changes in the viewshed for nearshore recreational boaters and fishermen.

Overall, with mitigation in place, any adverse impact to aesthetics and visual amenities within the vicinity of the onshore and inshore activities during construction is anticipated to be short-term and minor.

12.3.3.1.5 COMMERCIAL FISHING

Portions of the Corpus Christi Bay would be crossed by trenching, which would restrict access to areas of the bay. Construction of the Alternative Inshore Pipelines would be sequential over the 24-month construction and testing period, during which time waters in proximity to construction vessels would be inaccessible to fishermen. Fishermen who typically fish in the waters where the pipelines would be installed could choose to fish in a new or more distant area, allowing them to maintain a similar harvest level. Given the sufficient fishing habitat available in the vicinity of the Alternative Project, no impact to actual harvest levels area are anticipated. Overall, construction of the Alternative Project would 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. Further, construction activities are not expected to impact fishery resources at the population level (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.3.3.1.6 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

The Alternative Inshore Pipelines would traverse one block with an active lease (Block 436) (BOEM 2019a). The Corpus Christi Bay and the active lease block would be crossed by trenching, which would restrict access to portions of the block during installation of the Alternative Project. As a result, it is anticipated that the construction of the Alternative Inshore Pipelines would result in a temporary minor adverse impact to inshore oil and gas activity within the study area during Alternative Project construction.

INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The Alternative Inshore Pipelines would traverse a total of 126 existing inshore pipelines (Texas RRC 2019). Construction of the Alternative Inshore Pipelines could potentially adversely impact the submerged pipelines within the ROW resulting in damage to existing pipelines. To minimize any potential impact to existing pipelines, BWTT would undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Alternative Inshore Pipelines to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Alternative Inshore Pipelines is anticipated to be temporary and minor.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

The Alternative Inshore Pipelines would traverse two active dredge placement areas. During the construction phase of the Alternative Inshore Pipelines, the Corpus Christi Bay, and two active dredge placement areas, would be crossed by trenching. The active dredge placement areas within the Corpus Christi Bay, PA 165 and PA 10, offer many benefits to the local communities and environment, including offering a habitat for local birds and wildlife and helping to minimize coastline erosion, as well as being an active dredge placement area identified within the 50-year GIWW dredged material management plan. Trenching and burying the Alternative Inshore Pipelines within the active dredge placement areas would significantly and adversely impact the quality of the two dredge placement areas, however, due to the temporary nature of the construction activities, and as only two of many placement areas would be impacted, the overall impact to dredge placement areas within the study area as a result of the Alternative Project is anticipated to be minor and temporary.

12.3.3.2 Offshore

12.3.3.2.1 MARINE ZONE USE

OFFSHORE OIL AND GAS ACTIVITY

Assessment indicates that there are no federal lease blocks with active leases traversed by the Alternative SPM buoys locations; however, the Alternative Offshore Pipelines traverse one active lease (Block 885). During the installation of the Alternative Project, a temporary safety zone would be in effect for approximately 24 months. The temporary safety zone would force vessels that would otherwise transit through the Alternative Project vicinity to navigate around the safety zones. As a result of the required safety zone during Alternative Project construction, marine access to currently active lease blocks within the vicinity of the Alternative Project could be restricted, and as such oil and gas activity within the vicinity of Alternative Inshore and Offshore Pipelines could be adversely impacted. Potential impact would be minimized through consultation with the leases holders of the active blocks crossed and adjacent to the Alternative Project. Overall, with mitigation in place, any adverse impact to existing oil and gas activity is anticipated to be temporary and minor.

OFFSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

The Alternative Offshore Pipelines would cross four in-service natural gas pipelines and three abandoned natural gas pipelines (Texas RRC 2019). Construction of the Alternative Offshore Pipelines could potentially adversely impact the submerged pipelines within the direct Alternative Project ROW resulting in damage to existing pipelines. Should the Alternative Project be chosen for construction, BWTT would undertake consultation with the owners and operators of the pipelines proposed to be crossed by the Alternative Project to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Alternative Project is anticipated to be temporary and minor.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

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 Alternative 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

During the installation of the Alternative Project, a temporary safety zone would be established. The temporary safety zone would force vessels that would otherwise transit through the Alternative Project vicinity 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 24 months. Any vessels that would have utilized the areas that would be off-limits due to safety zones, could use established fairways or move around that area. The Alternative Offshore Pipelines traverse a major shipping fairway, and due to this, the presence of the temporary safety zone is likely to cause some delay for shipping within the vicinity of the Alternative Project and the temporary safety zone. However, based on 24-month construction period, these delays would be temporary. With mitigation, such as stakeholder engagement and aids to navigation system, in place, construction is expected to have negligible effect on marine shipping.

MILITARY USE

Construction of the Alternative Project is not expected to affect military activities. The Alternative Project offshore construction sites are located near various designated Military Warning Areas and/or specialized training zones (see Section 12.2.2.3.1). Any military activities that occur during construction or after installation and commissioning of the Alternative 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 Alternative Project construction activities would be coordinated and communicated with area ports, USCG, and other military branches, as directed. Construction of the Alternative Project would have negligible beneficial impacts on military uses in the area.

LIGHTERING ZONES

The closest USCG lightering zone to the Alternative Project is the Southtex-lightering Zone, located approximately 60 mi (96.6 km) from the Alternative SPM buoys. Due to the removed nature of the Alternative Project from the lightering zone, it is not anticipated that the Alternative Project would pose any undue restrictions to the lightering zone or lightering operations. As such, the Alternative Project is anticipated to have no impact on lightering zones. Lightering zones are further discussed in Section 14: Navigation, Safety, and Security.

12.3.3.2.2 PROTECTED OFFSHORE HABITATS

MARINE MANAGED AREAS

MMA and MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

Impacts on EFH are discussed in Appendix J.

CORAL REEF

The Alternative Offshore Pipelines would come in close proximity to Lonestar Reef, an artificial reef, approximately 40 ac in size, located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines (TPWD 2019e). Artificial reefs develop communities of encrusting organisms and bait fish over time, they are built to enhance habitat for invertebrate and fish species, and in turn, to improve commercial fishing, and to support recreational fishing and diving activities (National Wildlife Federation [NWF] 2013).

During the construction of the Alternative Offshore Pipelines, bottom sediment disturbance activities and associated increases in turbidity would result in adverse impacts on the water quality in the vicinity of the construction. Water turbidity, salinity (in estuarine and coastal areas), dissolved oxygen, biological oxygen demand, water temperature, nutrient loads, pollution levels, and other water quality factors affect both the biological productivity and use value of artificial reefs (NWF 2013).

Due to the close proximity of the Alternative Offshore Pipelines to the Lonestar Reef, the turbidity and minor reduction in water quality that would be created through construction of the Alternative Offshore Pipelines, and the sensitivity of artificial reefs to turbidity and water quality, the Alternative Offshore Pipelines are anticipated to result in minor adverse impacts to the Lonestar Reef.

DREDGED MATERIAL DISCHARGE ZONES

The offshore elements of the Alternative Project do not cross any ODMS. The nearest ODMS to the Alternative Offshore Pipelines is located approximately 4.3 mi (6.9 km) northeast of the Alternative Offshore Pipelines and as such, no impact to ODMS is anticipated a result of the Alternative Project.

COMMERCIAL FISHING

During the 16-week-long construction period of the Alternative SPM buoy systems, commercial fishing would be prohibited in the temporary safety zone. This would primarily affect commercial harvesters of shrimp but could also affect commercial fishermen targeting open water pelagic finfish like mackerels and dolphin. Fishermen who typically 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. 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. However, there is no unique habitat located at the site of the Alternative SPM buoy systems 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 Alternative Project vicinity are anticipated.

Similarly, construction of the Alternative Offshore Pipelines would be sequential over the 15-month-long construction and testing period, during which waters in proximity to construction vessels would be inaccessible to fishermen. Similar to that discussed for the Alternative SPM buoy systems, fishermen who typically fish in the waters where the pipelines would be installed could choose to fish in a new or more distant area, allowing them to maintain a similar harvest level. While this would result in some inconvenience to fishermen, given the sufficient fishing habitat available in the vicinity of the Alternative Project, potential impacts to actual harvest levels area are anticipated to be negligible.

Overall, construction of the Alternative Project would 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 fishermen so they can plan alternate routes and/or destinations to other accessible areas nearby the Alternative Project. As such, impacts on commercial fishermen's ability to maintain current harvest levels and access to fishing areas in the broader region would be negligible. Further, construction activities are not expected to impact fishery resources at the population level (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.3.3.2.3 RECREATION

RECREATIONAL BOATING

During the installation of the Alternative Project, a temporary safety zone would be established. The temporary safety zone would force vessels that would otherwise transit through the Alternative Project vicinity 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 24 months. Any vessels that would have utilized the areas that would be off-limits due to safety zones, could use established fairways or move around that area. The Alternative Offshore Pipelines traverse a major shipping fairway, and due to this, the presence of the temporary safety zone is likely to cause some delay for shipping, including that undertaken by recreational boaters, and potentially cruise ships, within the vicinity of the Alternative Project and the temporary safety zone. However, based on 24-month construction period, these delays would be temporary. With mitigation, such as stakeholder engagement and aids to navigation system, in place, construction is expected to have negligible effect on recreational.

Artificial reefs are often utilized by scuba divers; the Alternative Offshore Pipelines would come in close proximity to the Lonestar Reef (MU-770L), an artificial reef is located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines (TPWD 2019e). Due to the close proximity of the reef to the Alternative Offshore Pipelines, access to the reef would fall within the be Alternative Offshore Pipelines construction temporary safety zone and as such scuba diving at the reef would be restricted during Alternative Offshore Pipelines construction. With mitigation, such as stakeholder engagement, in place, construction is expected to have negligible effect on scuba diving.

RECREATIONAL FISHING

During the 16-week construction period of the Alternative SPM buoy systems, recreational fishing would be prohibited in the temporary safety zone. Direct effects on offshore recreational fishing experiences would be negligible given the availability of accessible offshore fishing areas in proximity to the Alternative SPM buoy systems site, and the lack of unique fishing opportunities afforded by the Alternative Offshore Pipelines site. Further, given that only about 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 Alternative Project vicinity are sufficient to accommodate the fishing

trips that could be displaced during construction. Therefore, the construction of the Alternative SPM buoy systems would have a negligible impact on recreational offshore fishing.

Similarly, construction of the Alternative Offshore Pipelines would be sequential over the 15-month period, during which, waters in proximity to construction vessels would be inaccessible to fishermen. Overall, construction of the Alternative Project would 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 fishermen so they can plan alternate routes and/or destinations to other accessible areas. As such, impacts on recreational fishing experiences in the broader region would be negligible.

The Alternative Offshore Pipelines would also be located approximately 0.2 mi (0.3 km) south of the Lonestar Reef, an artificial reef, 40 ac in size (TPWD 2019e). As discussed above, the close proximity and sensitivity of the artificial reef, and the turbidity and minor reduction in water quality that would be created through construction of the Alternative Offshore Pipelines, would be anticipated to result in minor adverse impacts to the Lonestar Reef. While artificial reefs are utilized for recreational fishing, recreational fishermen would not be able to access the Lonestar Reef during Alternative Offshore Pipelines construction as it would fall within the 3,609-ft (1,100-m) radius safety zone. In addition, as above, with the availability of alternative recreational fishing areas and the publication of USCG Local Notice to Mariners, potential impacts to recreational fishing are anticipated to be negligible.

Further, construction activities are not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries).

12.3.3.2.4 AESTHETICS

The Alternative SPM buoys would be constructed 14.1 and 14.6 mi (22.7 and 23.5 km) offshore and, therefore, would not be visible from the shore; as such, impacts to aesthetics and visual amenity resulting from offshore construction activities would 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 Alternative SPM buoy systems would take approximately 16 weeks to complete and is anticipated to present a temporary minor visual impact for users in the offshore area.

12.3.4 Alternative Project Operation Impacts

12.3.4.1 Onshore and Inshore

12.3.4.1.1 COASTAL ZONE USE

Once complete the land-based Alternative Inshore Pipelines would be buried and the land seeded with a native grass mixture or with some other suitable reclamation mixture approved by the landowner and would be returned to a vegetated state; however, a 50-ft-wide permanent ROW would be retained for the life of the Proposed Project, resulting a permanent residual impact of minor significance to coastal zone use. The Alternative Booster Station located on Mustang Island would take up physical space above ground, however due to its limited size and footprint (19 ac [7.7 ha]), impacts to coastal zone use during operation are anticipated to be minor but permanent.

12.3.4.1.2 LAND USE

Once construction has been completed, the ROWs for the Alternative Onshore Pipelines would be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the permitting authority or the landowner, and would be returned to a vegetated state. While a 50-ft-wide permanent ROW would be retained for the life of the Alternative Project, impacts within the permanent ROW would be predominantly limited to occasional inspections and vegetation maintenance to remove woody growth. Given the limited woody growth currently present in the pipeline corridor, and the minimal width of the permanent ROW, the impacts to local land use as a result of the Onshore and Inshore Pipelines are anticipated to be of minor significance during operation.

Alternatively, the Alternative Booster Station which would be on Mustang Island, would result in the permanent conversion of about 19 ac (7.7 ha) of vegetated habitat to an industrial site. As described in Section 13: Meteorology, Air Quality, and Noise, operation of the Alternative Booster Station would not result in an audible increase above ambient sound levels at the nearest residence; therefore, impacts due to operations would be permanent but negligible.

12.3.4.1.3 RECREATION

Once operational, the Alternative Project is anticipated to have no impact to recreational parks and beaches. Once installation is complete the Onshore and Inshore Pipelines would be buried and as such would not impact recreational boating or fishing activities. Further, operation of these pipelines is not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

12.3.4.1.4 AESTHETICS

Since the Alternative Project pipelines would be buried and land revegetated, no impact to aesthetics and visual amenity resulting from the Onshore and Inshore Pipelines during operation is anticipated. The Alternative Booster Station would result in permanent, but minor impacts, as it would be visible from area water and roadways; however, it would be similar in visual scope as other industrial facilities located on Mustang Island.

12.3.4.1.5 INSHORE ZONE USE

INSHORE OIL AND GAS ACTIVITY

Once operational, the Alternative Project is anticipated to have no impacts on existing inshore oil and gas activities in the vicinity of the Alternative Project. Any oil/gas exploration that would be proposed during operation of the Alternative Project would be aware of the presence of the Alternative Inshore Pipelines within their area of interest. As such, no impact is anticipated to inshore oil and gas activities as a result of the Alternative Project operation.

INSHORE PIPELINES OR OTHER SUBMERGED INFRASTRUCTURE

Once operational, the Alternative Project is anticipated to have no impacts on existing Inshore Pipelines and other submerged infrastructure. As such, no impact is anticipated to existing Inshore Pipelines and other submerged infrastructure as a result of the Alternative Project operation.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

INSHORE DREDGED MATERIAL DISCHARGE ZONES

Once operational, the Alternative Project is anticipated to have no impacts on active dredge placement areas in the vicinity of the Alternative Inshore Pipelines. As such, no impact is anticipated to active dredge placement areas as a result of the Alternative Project operation.

12.3.4.2 Offshore

12.3.4.2.1 MARINE ZONE USE

OFFSHORE OIL AND GAS ACTIVITIES

The Alternative 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. There are federal lease blocks with active leases traversed by the Alternative Project, however, 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. Overall the effects of operation of the Alternative Project on offshore pipelines and other submerged infrastructure would be minor.

OFFSHORE PIPELINES AND OTHER SUBMERGED INFRASTRUCTURE

The Alternative Offshore Pipelines would cross four in-service natural gas pipelines and three abandoned natural gas pipelines (Texas RRC 2019). Once operational, the Alternative Project is anticipated to have no impacts on Offshore Pipelines and other submerged infrastructure.

For discussion on submerged cultural resources, please refer to Section 9: Cultural Resources.

OTHER OCS NON-ENERGY MINERALS RESOURCES

There are no OCS non-energy minerals lease areas in the vicinity of the Alternative Project; as such operation of the Alternative Project would not affect this resource.

MARINE SHIPPING AND COMMERCIAL PORTS

During operation, a 3,609-ft (1,100-m) radius safety zone would be established around the Alternative SPM buoy systems. Any vessels that would otherwise transit through the Alternative 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 would be off-limits due to safety zones, could use nearby established fairways or move around that area. The safety zone which would be established around the Alternative SPM buoy systems would not extend to the established fairway, and it is unlikely that large commercial vessels would be transiting outside of established fairways. Overall, operation of the Alternative Project is anticipated to result in a negligible impact on marine shipping and commercial port activity.

MILITARY USE

The Alternative Project site is located amidst various designated Military Warning Areas and/or specialized training zones (see Section 12.2.2.3.1). Any military activities that occur in the vicinity of the Alternative 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 Alternative Project becomes a known element in the area, military operations would continue as normal. Operations of the Alternative 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 (96.6 km) from the Alternative Project SPM buoys. Due to the removed nature of the Alternative Project from the lightering zone it is not anticipated that the Alternative Project would pose any undue restrictions to the lightering zone or lightering operations. As such, the Alternative Project is anticipated to have no impact on lightering zones.

12.3.4.2.2 PROTECTED OFFSHORE HABITAT

MARINE MANAGED AREAS

MMA and MPAs are discussed in Section 6: Aquatic Environment.

ESSENTIAL FISH HABITAT

Impacts on EFH are discussed in Appendix J.

CORAL REEF

No coral reefs have been identified near the Alternative Project; as such, no impact to coral reef is anticipated.

During operation, the Alternative Project would not result in additional water turbidity in the vicinity of the artificial reef, Lonestar Reef, and as such no adverse impacts to the artificial reef would be anticipated.

DREDGED MATERIAL DISCHARGE ZONES

The Alternative Project would not cross any ODMDS. The nearest ODMDS is located approximately 4.3 mi (6.9 km) southwest of the Alternative Offshore Pipelines and as such, no impact to ODMDS is anticipated.

COMMERCIAL FISHING

During operation, an approximately 3,609-ft (1,100-m) radius safety zone would be established around the Alternative SPM buoy systems. Activities such as commercial fishing would not be permitted within the safety zone and vessels would not be able to transit through the safety zone. This restricted area could have a negative, permanent impact on fishing opportunities by causing certain commercial fishermen to expend extra effort to maintain current harvest levels. However, the safety zone established around the Alternative SPM buoy systems would not extend to the established fairway, the location of the Alternative SPM buoy systems is considered a low vessel traffic area, and the amount of unrestricted fishing area available in the vicinity of the Alternative Project, offshore of Texas, and the Gulf overall, the no-fishing zone associated with the Alternative SPM buoy systems 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 Alternative Offshore Pipelines would be buried to a minimum of 3 ft (1 m) and as such would not impede commercial fishing activities. Further, operation of pipelines is not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species). Overall, negative effects on commercial fishing from operation of the Alternative Project would be negligible.

12.3.4.2.3 RECREATION**RECREATIONAL BOATING**

Operation of the Alternative SPM buoy systems could result in negative effects on recreational boaters due to the restricted area that would be created by the establishment of an approximately 3,609-ft (1,100-m) radius safety zone. However, as discussed in Section 12.2.2.3.4, 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 Lonestar's Reef, which is the closest artificial reef to the Alternative SPM buoy systems site. In addition, the safety zone established around the Alternative SPM buoy systems would not extend to the established fairway.

Neither the Aransas Pass-Rockport nor the POCC have ports that regularly receive cruise ships engaged in multi-day trips that would transit the fairways north and east of the SPM buoy systems 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 Alternative Project vicinity.

Service vessels would frequent the Alternative SPM buoy systems during operation for regular maintenance and tugboats would be deployed to meet vessels calling on the Alternative Project. These vessels are likely to depart from the Aransas Pass-Rockport or other nearby ports and would result in additional transits. These support vessels would 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 Alternative Project vicinity, the presence of these support vessels would not have a significant effect on the experience of recreational boating offshore of Texas. Once installation is complete, the Alternative Offshore Pipelines would be buried and as such would not impact recreational boating activities.

Overall, the impact of Alternative Project operation on recreational boating, including cruise ships and scuba diving, would be negligible.

RECREATIONAL FISHING

Similar to recreational boating, offshore recreational fishing would be prohibited within the approximately 3,609-ft (1,100-m) radius safety zone around the Alternative SPM buoy systems. Because there are so many other accessible offshore fishing areas in proximity to the Alternative SPM buoy systems, the loss of access to the restricted area is

unlikely to cause significant direct effects on recreational offshore fishing. Given that less than 2 percent of angler-effort in the vicinity of the Alternative Project occur in the EEZ off the coast of Texas, effects from operation of the Alternative SPM buoy systems on recreation fishing would be negligible.

Once installation is complete, the Alternative Offshore Pipelines would be buried and as such would not impede recreational fishing activities. Further, operation of pipelines is not expected to impact fishery resource population levels (see Section 7: Commercial and Recreational Fisheries and Section 8: Wildlife and Protected Species).

Overall, negative effects on recreational fishing from operation of the Alternative Project would be negligible.

12.3.4.2.4 AESTHETICS

The Alternative Project SPM buoys would be located 12.3 nm (14.1 mi) and 12.6 nm (14.6 mi) offshore and therefore would not be visible from the shore; as such, impacts to aesthetics and visual amenity resulting from the presence of the Alternative Project SPM buoys would be limited to offshore receptors, such as passing boat traffic. Overall, the visual impact resulting from the Alternative Project SPMs presence is anticipated to be negligible.

12.3.4.3 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: Navigation, Safety, and Security.

12.3.5 Alternative Project Decommissioning Impacts

12.3.5.1 Onshore/Inshore

At the end of its useful life (50 years), the Alternative Project would be decommissioned. Decommissioning of the Alternative Onshore and Inshore Pipelines would consist of purging the pipe of crude oil liquids and filling them with water. No decommissioning activities are anticipated to occur in onshore or inshore waterbodies. The Alternative Booster Station would be dismantled and removed; removal activities would be similar in scope to those discussed for the station's construction. Once the Alternative Booster Station has been decommissioned, the terrestrial habitat would be restored and no further land disturbance would be required. As such, no permanent impact to land/zone use, commercial and recreational activities, or aesthetic conditions are anticipated as a result of the decommissioning phase of the Alternative Project.

12.3.5.2 Offshore

At the end of its useful life, all Offshore Components associated with the Alternative Project would be disassembled and brought to shore for offsite disposal. 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 Alternative Project prior to its construction would be allowed to resume. As such, no permanent impact to marine zone use, offshore commercial and recreational activities, or offshore aesthetic conditions are anticipated as a result of the decommissioning phase of the Alternative Project.

12.3.6 Summary of Alternative Project Impacts

The Alternative Project is anticipated to result in similar impacts to those the of the Proposed Project, with the exceptions of the additional minor potential impacts relating to coastal zone use, recreation, aesthetics, offshore oil and gas, and dredge placement areas during construction.

12.3.6.1 Alternative Project Construction Impacts

12.3.6.1.1 ONSHORE AND INSHORE

The entirety of the Alternative Project is within the Texas Coastal Management Zone. The Alternative Inshore Pipelines would be installed using HDD and open-cut trenching across Corpus Christi Bay and Mustang Island. Trenching on Mustang Island would be adjacent to existing disturbance (e.g., roads and power lines). Overall the Alternative Project is anticipated to have minor impacts on coastal zone use during construction.

During the construction of the Alternative Project Onshore Pipelines and Onshore Components of the Inshore Pipelines (i.e., impacts on the coastal islands), land use would be disturbed within the 125-ft (38.1 m) construction ROW. The Alternative Project Onshore and Inshore Pipelines would cross four main types of land use, in addition to open water areas: agricultural land; windfarms; residential areas; and, coastal islands.

North of the City of Ingleside, most of the land crossed by the Alternative Onshore Pipelines is actively cultivated agricultural land. The primary impact on agricultural areas would be the temporary loss of production during and shortly after construction is completed. All agricultural areas disturbed during construction would be restored in accordance with landowner agreements and would be available for agricultural use immediately upon completion of construction or restoration. With the above mitigation measures in place, any impacts to agricultural areas as a result of the construction of the Alternative Project are anticipated to be minimal and not significant. While the Onshore Pipelines do cross the access paths to a number of wind turbines, and would be within about 100 ft (30 m) of individual turbines, construction would not directly affect any wind turbines. BWTT would coordinate with existing land and wind farm owners prior to construction. With mitigation in place, potential impacts to windfarms are anticipated to be temporary and minor.

The Alternative Onshore Pipelines is in close proximity to residential areas and a primary school. During construction, 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. As a result, sensitive receptors would experience diminished views in the direction of the Alternative Pipelines during the construction phase and a minor adverse impact to aesthetics is anticipated.

The Alternative Inshore Pipelines would be installed using open-cut trenching across Mustang Island. Trenching on Mustang Island would be adjacent to existing disturbance (e.g., roads and power lines). Given the already disturbed nature of these islands, and the mitigation proposed to minimize impacts from sedimentation, construction impacts on these islands are anticipated to be minor and short-term.

HDD methods would be utilized at locations where the Alternative Inshore Pipelines cross wetlands on Mustang Island. Further discussion regarding potential impacts to wetlands is provided in Section 4: Water Quality.

The Alternative Onshore Pipelines ROW is located approximately 0.3 mi (0.5 km) east of Live Oak Park. During construction, the close proximity of the Alternative Onshore Pipelines ROW to Live Oak Park would result in impacts such as dust due to soil movement, artificial light from construction machinery, and increased levels of noise in the vicinity of active construction, which could create an annoyance for local recreational users and wildlife within the park. Where the Alternative Project would traverse beaches or open water areas where recreational boating and fishing could occur, the Alternative Project would use a combination of HDD and open-cut methods. Recreational users of beaches within the immediate vicinity of the Alternative Project may experience disturbance due to artificial light from construction machinery and increased levels of noise in the vicinity of active construction. However, impacts would be short-term and temporary and the availability of alternate recreational beach space within the immediate vicinity, but removed from the Alternative Project construction ROW, such as those within Mustang Island State Park, could allow impacts to recreational beach goers to be minimized. Overall, construction of the Alternative Inshore and Onshore Pipelines is anticipated to have a minor temporary impact on recreational activities.

Recreation and tourism in the immediate vicinity of the Alternative Project are likely to experience adverse impacts during construction, such as changes in viewshed for nearshore recreational boaters and fishermen, and construction noise, dust, and light impacts experienced by local park and beach users, which could result in a decrease in the number of recreational users and tourists utilizing the area in the immediate vicinity of the Project. With all planned mitigation measures in place, such as use of BMPs for dust, noise, and light emissions, and the avoidance of construction during key public events and peak recreational times (such as public holidays) the recreation and tourism economy of the study area is anticipated to experience a temporary minor adverse impact during the Alternative Project construction phase. As the Alternative Project would be constructed by an open-cut method across the Corpus Christi Bay, some impacts to recreational fishermen and boaters within this area would remain. While still considered minor, impacts to recreation from the Alternative Project would be of slightly higher significance than those anticipated by the Proposed Project. In addition, impacts would be experienced over a longer (6 months longer) period of time.

The Alternative Inshore Pipelines would traverse one block with an active lease (Block 436). The Corpus Christi Bay and the active lease block would be crossed by trenching, which would restrict access to portions of the block during installation of the Alternative Project. As a result, it is anticipated that the construction of the Alternative Inshore Pipelines would result in a temporary minor adverse impact to inshore oil and gas activity within the study area during Alternative Project construction. The Alternative Inshore Pipelines would traverse a total of 126 existing inshore pipelines. Construction of the Alternative Inshore Pipelines could potentially adversely impact the submerged pipelines within the ROW resulting in damage to existing pipelines. To minimize any potential impact to existing pipelines, BWTT would consult with the owners and operators of the pipelines proposed to be crossed by the Alternative Inshore Pipelines to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Alternative Inshore Pipelines is anticipated to be temporary and minor.

The Alternative Inshore Pipelines would traverse two active dredge placement areas. Trenching and burying the Alternative Inshore Pipelines within the active dredge placement areas would significantly and adversely impact the quality of the two dredge placement areas; however, due to the temporary nature of the construction activities, and as only two of many placement areas would be impacted, the overall impact to dredge placement areas within the study area as a result of the Alternative Project is anticipated to be minor and temporary.

12.3.6.1.2 OFFSHORE

Assessment indicates that there are no federal lease blocks with active leases traversed by the Alternative SPM buoy systems locations; however, the Alternative Offshore Pipelines traverse one active lease (Block 885) and the Alternative Inshore Pipelines traverse another active lease (Block 436), described above. During the installation of the Alternative Project, a temporary safety zone would be in effect for approximately 24 months. The temporary safety zone would force vessels that would otherwise transit through the Alternative Project vicinity to navigate around the safety zone. Overall, with mitigation in place, any adverse impact to existing oil and gas activity is anticipated to be temporary and minor. The Alternative Offshore Pipelines would cross four in-service natural gas pipelines and three abandoned natural gas pipelines. Construction of the Alternative Offshore Pipelines could potentially adversely impact the submerged pipelines within the direct Alternative Project ROW resulting in damage to existing pipelines. Should the Alternative Project be chosen for construction, BWTT would consult with the owners and operators of the pipelines proposed to be crossed by the Alternative Project to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Alternative Project is anticipated to be temporary and minor.

The Alternative Offshore Pipelines traverse a major shipping fairway. During the installation of these pipelines, temporary safety zones would be established. The temporary safety zones would force vessels that would otherwise transit through the offshore vicinity to navigate around the safety zones, increasing the time that it would take them to move through the area and reach their destination. With mitigation, such as stakeholder engagement and use of aids to navigation system, in place, the construction of the Alternative Offshore Pipelines is anticipated to result in minor impacts in the form of delays to marine shipping.

The installation of the Alternative Project would provide a new feature/activity within the landscape for military operations and training in the area, resulting in a beneficial but negligible impact to military activities. No adverse impacts to military activities are expected as a result of the Alternative Project construction.

The closest USCG lightering zone to the Proposed Project is the Southtex-lightering Zone, located approximately 60.0 mi (96.6 km) from the Alternative SPM buoys. As such, the Alternative Project is anticipated to have no impact on lightering zones.

Lonestar Reef, an artificial reef, would be located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines. During the construction of the Alternative Offshore Pipelines, bottom sediment disturbance activities and associated increases in turbidity would result in adverse impacts on the water quality in the vicinity of the construction which would be anticipated to result in minor adverse impact to the Lonestar Reef.

The offshore elements of the Alternative Project do not cross any ODMDs; as such, no impact to ODMDs is anticipated a result of the Alternative Project.

During the 16-week construction period of the Alternative SPM buoy systems, recreational and commercial fishing would be prohibited in the temporary safety zone. This would primarily affect commercial harvesters of shrimp but could also affect commercial fishermen targeting open water pelagic finfish like mackerels and dolphin. Fishermen who typically 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. The location of the temporary safety zone would be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fishermen so they can plan alternate routes and/or destinations to other accessible areas nearby the Alternative Project. As such, impacts on commercial fishermen's ability to maintain current harvest levels and access to fishing areas in the broader region would be negligible. Offshore recreational boaters would be prohibited from transiting through the temporary safety zones associated with construction of the Alternative Project. Overall, construction of the Proposed Project would have a negligible impact on recreational boating.

The Alternative SPM buoys would be constructed 14.1 and 14.6 mi (22.7 and 23.5 km) offshore and, therefore, would not be visible from the shore; as such, impacts to aesthetics and visual amenity resulting from offshore construction activities would be limited to offshore receptors, such as passing boat traffic. Construction of the Alternative SPM buoy systems would take approximately 16 weeks to complete and is anticipated to present a temporary minor visual impact for users in the offshore area.

12.3.6.2 Alternative Project Operation Impacts

12.3.6.2.1 ONSHORE AND INSHORE

Due to the buried nature of the Alternative Onshore and Inshore Pipelines (minimum of 3 ft [1 m] cover), once operational, these pipelines are anticipated to have no impact to coastal zones. Once construction of the Alternative Onshore Pipelines is completed, the ROWs would be seeded with a native grass mixture or with some other suitable reclamation mixture approved of by the permitting authority or the landowner, and would be returned to a vegetated state. The Alternative Booster Station which would be on Mustang Island, would result in the permanent conversion of about 19 ac (7.7 ha) of vegetated habitat to an industrial site.

Once operational, the Alternative Project is anticipated to have no impact to recreational parks and beaches. Once installation is complete, the Onshore and Inshore Pipelines would be buried and as such would not impact recreational boating or fishing activities. Since the Alternative Project pipelines would be buried and land revegetated, no impact to aesthetics and visual amenity resulting from the Onshore and Inshore Pipelines during operation is anticipated. The Alternative Booster Station would result in permanent, but minor impacts, as it would be visible from area water and roadways; however, it would be similar in visual scope as other industrial facilities located on Mustang Island.

Once operational, the Alternative Project is anticipated to have no impacts on existing inshore oil and gas activities, existing inshore pipelines, other submerged infrastructure, or active dredge placement areas in the vicinity of the Alternative Inshore Pipeline.

12.3.6.2.2 OFFSHORE

The Alternative 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. There are federal lease blocks with active leases traversed by the Alternative Project, however, impacts 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 effects of operation of the Alternative Project on Offshore Pipelines and other submerged infrastructure would be minor.

The Alternative Offshore Pipelines would cross four in-service natural gas pipelines and three abandoned natural gas pipelines. Once operational, the Alternative Project is anticipated to have no impacts on Alternative Offshore Pipelines and other submerged infrastructure. There are no OCS non-energy minerals lease areas in the vicinity of the Alternative Project; as such operation of the Alternative Project would not affect this resource.

During operation, a 3,609-ft (1,100-m) radius safety zone would be established around the Alternative SPM buoy systems. Any vessels that would otherwise transit through the Alternative 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 would be off-limits due to safety zones, could use nearby 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 Alternative Project is anticipated to result in a negligible impact on marine shipping and commercial port activity.

Once the Alternative Project is operational and becomes a known element in the area, military operations would continue as normal. Operations of the Alternative Project would have no impact on military uses in the area. Due to the distance of the Alternative Project from the lightering zone it is not anticipated that the Alternative Project would pose any undue restrictions to the lightering zone or lightering operations.

During operation, the Alternative Project would not result in additional water turbidity in the vicinity of the artificial reef, Lonestar Reef, and as such, no adverse impacts to the artificial reef would be anticipated. The offshore elements of the Alternative Project would not cross any ODMS; therefore, no impact to ODMS is anticipated.

Activities such as commercial fishing would not be permitted within the safety zone and vessels would not be able to transit through the safety zone. This restricted area could have a negative, permanent impact on fishing opportunities by causing certain commercial fishermen to expend extra effort to maintain current harvest levels. However, given the location of the Alternative SPM buoy systems is considered a low vessel traffic area and the amount of unrestricted fishing area available in the vicinity of the Alternative Project, offshore of Texas, and the Gulf overall, the no-fishing zone associated with the Alternative SPM buoy systems 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.

Operation of the Alternative SPM buoy systems could result in negative effects on recreational boaters due to the restricted area that would be created by the establishment of the safety zone. The Ports of Galveston and Houston on Galveston Bay are the closest cruise ship departure ports to the Alternative Project. Neither the POCC nor the Aransas Pass-Rockport are ports that regularly receive cruise ships engaged in multi-day trips. Cruise ships, or other recreational vessels, traveling north-south that do call at these ports however are likely to transit in or near the shipping safety fairways, one of which is traversed by the Alternative Offshore Pipelines. Overall, the impact of Alternative Project operation on recreational boating would be negligible. Similar to recreational boating, offshore recreational fishing would be prohibited within the approximately 3,609-ft (1,100-m) radius safety zone around the Alternative SPM buoy systems. Because there are so many other accessible offshore fishing areas in proximity to the Alternative SPM buoy systems, the loss of access to the restricted area is unlikely to cause significant direct effects on recreational offshore fishing.

The Alternative Project SPM buoys would be located 15.4 mi (28.4 km) or more off the coast of Mustang Island and therefore would not be visible from the shore; as such, impacts to aesthetics and visual amenity resulting from the presence of the Alternative Project SPM buoys would be limited to offshore receptors, such as passing boat traffic. Overall, the visual impact resulting from the Alternative Project SPMs presence is anticipated to be negligible.

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.

12.3.6.3 Alternative Project Decommissioning Impacts

12.3.6.3.1 ONSHORE/INSHORE

At the end of its useful life (50 years), the Alternative Project would be decommissioned. Decommissioning of the Alternative Onshore and Inshore Pipelines would consist of purging the pipe of crude oil liquids and filling them with water. No decommissioning activities are anticipated to occur in onshore or inshore waterbodies. The Alternative Booster Station would be dismantled and removed; removal activities would be similar in scope to those discussed for the station's construction. Once the Alternative Booster Station has been decommissioned, the terrestrial habitat would be restored and no further land disturbance would be required. As such, no impact to commercial and recreational activities and aesthetic conditions are anticipated as a result of the decommissioning phase.

12.3.6.3.2 OFFSHORE

At the end of its useful life, all Offshore Components associated with the Alternative 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 Alternative Project prior to its construction would be allowed to resume.

12.4 Summary of Impacts

With mitigation in place, impacts to coastal zone use, recreation, and aesthetics during the all phases of the Proposed Project are anticipated to range from negligible to no impact for most resources. Minor impacts are anticipated on agricultural land, wind farms, residential areas, coastal islands, aesthetics, and Inshore and Offshore Pipelines and other submerged infrastructure during construction, and aesthetics and coastal zone uses during operation.

The Alternative Project is anticipated to result in similar impacts to those the of the Proposed Project, with the exceptions of the additional minor potential impacts relating to coastal zone use, artificial reefs, recreation, aesthetics, offshore oil and gas, and dredge placement areas during construction.

The Alternative Inshore Pipelines would be installed using open-cut trenching across Corpus Christi Bay and Mustang Island. As a result of this method of construction, the Alternative Project is anticipated to have minor impacts on coastal zone use during construction. All major inshore waterbodies will be crossed by HDD for the Proposed Project.

The Alternative Onshore Pipelines ROW is located approximately 0.3 mi (0.5 km) (approximately 200 ft [61.0 m]) east of Live Oak Park. During construction, the close proximity of the Alternative Onshore Pipelines ROW to Live Oak Park would result in impacts such as dust due to soil movement, artificial light from construction machinery, and increased levels of noise in the vicinity of active construction, which could create an annoyance for local recreational users and wildlife within the park. The nearest park to the Proposed Project is Newbury Park located about 0.5 mi (0.8 km) away north of the Onshore/Inshore Pipeline Pipelines connection. Overall, construction of the Alternative Inshore and Onshore Pipelines is anticipated to have a minor temporary impact on recreational activities.

Lonestar Reef, an artificial reef, would be located approximately 0.2 mi (0.3 km) south of the Alternative Offshore Pipelines. The nearest artificial reef (Boatmen's Reef) is located approximately 5.7 mi (9.1 km) south of the Proposed Project. During the construction of the Alternative Offshore Pipelines, bottom sediment disturbance activities and associated increases in turbidity would result in adverse impacts on the water quality in the vicinity of the construction which would be anticipated to result in minor adverse impacts to the Lonestar Reef.

Recreation and tourism in the immediate vicinity of the Proposed and Alternative Projects are likely to experience adverse impacts during construction, such as changes in viewshed for nearshore recreational boaters and fishermen, and construction noise, dust, and light impacts experienced by local park and beach users, which could result in a decrease in the number of recreational users and tourists utilizing the area in the immediate vicinity of the Alternative Project. As the Alternative Project would be constructed by an open-cut method across the Corpus Christi Bay, some impacts to recreational fishermen and boaters within this area would occur. While still considered minor, impacts to recreation from the Alternative Project would be of slightly higher significance than those anticipated by the Proposed Project. In addition, impacts would be experienced over a longer (6 months longer) period of time.

The Alternative Inshore Pipelines would traverse one block with an active lease (Block 436) (BOEM 2019a). The Proposed Project will not cross active lease blocks. The Corpus Christi Bay and the active lease block would be crossed by trenching, which would restrict access to portions of the block during installation of the Alternative Project. As a result, it is anticipated that the construction of the Alternative Inshore Pipelines would result in a temporary minor adverse impact to inshore oil and gas activity within the study area during Alternative Project construction. The Alternative Inshore Pipelines would traverse a total of 126 existing inshore pipelines, which is greater than the 69 crossed by the Proposed Project. Construction of the Alternative Inshore Pipelines has a greater potential to adversely impact the submerged pipelines within the ROW resulting in damage to existing pipelines. To minimize any potential impact to existing pipelines, BWTT would consult with the owners and operators of the pipelines proposed to be crossed by the Alternative Inshore Pipelines to gain an understanding of existing pipelines' exact locations, depths, conditions, and to help identify mitigation measures to minimize any potential impacts to existing submerged infrastructure. With mitigation in place, impacts to submerged infrastructure in the vicinity of the Proposed and Alternative Inshore Pipelines is anticipated to be temporary and minor. The Alternative Inshore Pipelines would traverse two active dredge placement areas; the Proposed Inshore Pipelines will not cross dredge placement areas. Installing the Alternative Inshore Pipelines within the active dredge placement areas would significantly and adversely impact the quality of the two dredge placement areas; however, due to the temporary nature of the construction activities, and as only two of many placement areas would be impacted, the overall impact to dredge placement areas within the study area as a result of the Alternative Project is anticipated to be minor and temporary.

A summary of impacts for the both the Proposed Project and Alternative Project is presented in Table 12-12 below. Given the greater impacts associated with the Alternative Project, the Proposed Project is the Least Environmentally Damaging Proposed Alternative.

Table 12-12: Summary of Impacts				
		Construction	Operation	Decommissioning
Proposed Project				
Proposed Project (Zone Use)	Onshore	Temporary and minor to negligible impacts to agricultural, wind farm, and residential land use areas.	ROWS of the Onshore Pipelines will be seeded with a native grass mixture; a 50-ft-wide permanent ROW will be retained for the life of the Proposed Project; residual impacts are anticipated to be of minor significance.	No permanent impact to land/zone use, commercial and recreational activities, or aesthetic conditions are anticipated as a result of the decommissioning phase. Temporary and minor impacts offshore 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 Proposed Project prior to its construction would be allowed to resume. As such, no permanent impact to marine zone use, offshore commercial and recreational activities, or offshore aesthetic conditions are anticipated.
	Inshore	Trenching on Stedman and Harbor Islands will be adjacent to existing disturbance (e.g., roads and power lines); appropriate erosion controls will be installed along construction ROW to avoid inadvertent sedimentation into the adjacent bays and channels; negligible impact on coastal zones anticipated. The proposed Inshore Pipelines will cross 69 existing inshore pipelines; potential residual temporary and minor adverse impact to existing pipelines anticipated.	ROWS of the land-based Inshore Pipelines will be seeded with a native grass mixture; a 50-ft-wide permanent ROW will be retained for the life of the Proposed Project; residual impacts are anticipated to be of minor significance. Once operational, the non-land-based Inshore Pipelines are anticipated to have no impact to coastal zones. The Harbor Island Booster Station will take up physical space above ground, however due to its limited size and footprint, impacts to are anticipated to be permanent but minor.	
	Offshore	The proposed Offshore Pipelines will cross 3 existing offshore pipelines; consultation with the owners and operators of the pipelines proposed to be crossed will be undertaken; potential residual temporary and minor adverse impact to existing pipelines anticipated. Marine Shipping and Commercial Ports: The Proposed Offshore Project does not cross established fairways; negligible impact on marine shipping and commercial ports anticipated.	Operational safety zones could encumbrance oil and gas users ability to explore or drill from the surface of the water above the OCS; however, the Proposed 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 and as there are no federal lease blocks with active leases crossed by the Proposed Project.	
Proposed Project (Recreation)	Onshore	No impact anticipated.	No impact anticipated.	
	Inshore	Potential temporary negligible impact on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities.	No impact anticipated.	

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	Offshore	<p>Recreational boaters would be prohibited from transiting through the temporary safety zones associated with construction of the Proposed Project; the location of the temporary safety zone would be published in the USCG Local Notice to Mariners. Given the amount of boating opportunities in the near and offshore waters in the area, impacts on boaters will be temporary and negligible. No impacts are anticipated to scuba diving or cruise ships.</p> <p>Recreational fishing will be prohibited in the temporary safety zones associated with construction of the Proposed Project; the location of the temporary safety zone would be published in the USCG Local Notice to Mariners. Direct effects on offshore recreational fishing experiences will be negligible given the availability of accessible offshore fishing areas; impacts on recreational fishing experiences in the broader region will be negligible.</p>	<p>During operation recreational vessels will not be permitted within Project safety zones; given the amount of unrestricted recreational boating area available in the vicinity of the Proposed Project, impacts are anticipated to be negligible. No impacts are anticipated to scuba diving or cruise ships.</p> <p>During operation vessels and recreational fishing will not be permitted within Project safety zones; given the amount of unrestricted fishing area available in the vicinity of the Proposed Project, impacts are anticipated to be negligible.</p>	
Proposed Project (Aesthetics)	Onshore	Potential short-term and minor adverse impact to viewshed due to disturbed vegetation during construction and associated timeframe for restoration of these lands.	No impact to aesthetics and visual amenity is anticipated from Onshore Pipelines during operation.	
	Inshore	Potential temporary negligible impact on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities.	No impact to aesthetics and visual amenity is anticipated from Inshore Pipelines during operation. The Harbor Island Booster Station would be visible from local waters and roadways resulting in a permanent, but minor impact to aesthetics and visual amenity.	
	Offshore	SPM buoy systems would not be visible from the shore; as such, impacts will be limited to offshore receptors, such as passing boat traffic. Overall potential impacts are anticipated to be limited to minor visual impact for users in the offshore area.	The DWP terminal will not be visible from the shore; impacts to aesthetics and visual amenity will be limited to offshore receptors, such as passing boat traffic. Overall, the visual impact resulting from the presence of the SPM buoy systems is anticipated to be negligible.	

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Proposed Project (Protected Offshore Habitats)	Onshore	N/A	N/A	
	Inshore	N/A	N/A	
	Offshore	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.	During operation vessels and commercial fishing will not be permitted within Project safety zones; given the low vessel traffic area and the amount of unrestricted fishing area available in the vicinity of the Proposed Project, impacts are anticipated to be negligible. Offshore Pipelines will not impede commercial fishing activities during Project operation.	
Alternative Project				
Alternative Project (Zone Use)	Onshore	Temporary and minor to negligible impacts to agricultural, wind farm, and residential land use areas. The Alternative Booster Station would also be placed on Mustang Island, resulting in the permanent conversion of vegetated habitat to an industrial site. Overall the Alternative Project is anticipated to have minor impacts on coastal zone use during construction.	ROWs of the Alternative Onshore Pipelines would be seeded with a native grass mixture; a 50-ft-wide permanent ROW would be retained for the life of the Alternative Project; residual impacts are anticipated to be of minor significance.	No decommissioning activities are anticipated to occur in onshore or inshore waterbodies. Once the Alternative Booster Station has been decommissioned, the terrestrial habitat would be restored and no further land disturbance would be required. As such, no permanent impact to land/zone use, commercial and recreational activities, or aesthetic conditions are anticipated as a result of the decommissioning phase of the Alternative Project. The subsea pipelines would be removed, resulting in temporary and minor impacts similar to those discussed during construction. Once decommissioning is
	Inshore	Trenching on Mustang Island would be adjacent to existing disturbance. Overall the Alternative Project is anticipated to have minor impacts on coastal zone use during construction. *Portions of the Corpus Christi Bay would be crossed by trenching, which would restrict access to areas of the bay. Given the sufficient fishing habitat available in the vicinity of the Alternative Project, no impact to actual harvest levels area are anticipated. Overall, construction of the Alternative Project would result in minor, temporary, direct effects on commercial fishermen *The Alternative Inshore Pipelines would traverse one block with an active lease; the active lease block would be crossed by trenching, which would restrict access to portions of the block. As a result, it is anticipated that the construction of the Alternative Inshore Pipelines would result in a temporary minor adverse impact to inshore oil and gas activity within the study area during Alternative Project construction. The proposed Inshore Pipelines would cross 126 existing inshore pipelines; consultation with the owners and	ROWs of the land-based Alternative Inshore Pipelines would be seeded with a native grass mixture; a 50-ft-wide permanent ROW would be retained for the life of the Alternative Project; residual impacts are anticipated to be of minor significance. Once operational, the non-land-based Alternative Inshore Pipelines are anticipated to have no impact to coastal zones. The Alternative Booster Station located on Mustang Island would take up physical space above ground, however due to its limited size and footprint, impacts to coastal zone use during operation are anticipated to be minor but permanent	

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		<p>operators of the pipelines proposed to be crossed would be undertaken; potential residual temporary and minor adverse impact to existing pipelines anticipated.</p> <p>The Alternative Inshore Pipelines would traverse two active dredge placement areas. Trenching and burying the Alternative Inshore Pipelines within the active dredge placement areas would significantly and adversely impact the quality of the two dredge placement areas, however, due to the temporary nature of the construction activities, the overall impact to dredge placement areas is anticipated to be minor and temporary</p>		<p>complete, the safety zone would no longer apply and activities that had been associated with the vicinity of the Alternative Project prior to its construction would be allowed to resume. As such, no permanent impact to marine zone use, offshore commercial and recreational activities, or offshore aesthetic conditions are anticipated as a result of the decommissioning phase of the Alternative Project.</p>
	Offshore	<p>*The Alternative Offshore Pipelines traverse one active lease; as a result of the required safety zone during Alternative Project construction, marine access to currently active lease blocks within the vicinity of the Alternative Project could be restricted. Potential impact would be minimized through consultation with the lease holders. Overall, with mitigation in place, any adverse impact to existing oil and gas activity is anticipated to be temporary and minor</p> <p>Offshore Pipelines would cross four in-service natural gas pipelines and three abandoned natural gas pipelines; potential residual temporary and minor adverse impact to existing pipelines anticipated.</p> <p>The Alternative Offshore Pipelines traverse a major shipping fairway, and due to this, the presence of the temporary safety zone is likely to cause some delay for shipping within the vicinity of the Alternative Project and the temporary safety zone.</p>	<p>*The Alternative Project crosses active lease blocks. The Alternative Project would present an encumbrance to industry vessels that could otherwise access the safety zones. Overall the effects of operation of the Alternative Project on offshore pipelines and other submerged infrastructure would be minor.</p> <p>Overall, operation of the Alternative Project is anticipated to result in a negligible impact on marine shipping and commercial port activity.</p>	
Alternative Project (Recreation)	Onshore	<p>*The Alternative Project ROW is in close proximity to Live Oak Park; the introduction of dust, artificial light, and increased levels of noise from Alternative Project construction, could create an annoyance for local recreational users and wildlife within the park. With mitigation measures in place, impacts would be anticipated to be of minor significance.</p>	No impact anticipated.	
	Inshore	<p>Recreational users of beaches within the immediate vicinity of the Alternative Project may experience disturbance due to the introduction of dust, artificial light,</p>	No impact anticipated.	

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		<p>and increased levels of noise from Alternative Project construction.</p> <p>*Recreational boaters and fishermen who utilize the Corpus Christi Bay may be displaced by the construction of the Alternative Inshore Pipelines where open-cut methods are used.</p> <p>Potential temporary negligible impact on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities.</p>		
	Offshore	<p>*Recreational Boating: The Alternative Offshore Pipelines traverse a major shipping fairway, and due to this, the presence of the temporary safety zone is likely to cause some delay for recreational boating, including cruise ships, within the vicinity of the Alternative Project and the temporary safety zone. With mitigation, such as stakeholder engagement and aids to navigation system, in place, construction is expected to have negligible effect on recreational shipping.</p> <p>*Due to the close proximity of the Lonestar Reef to the Alternative Offshore Pipelines, and the presence of the temporary safety zone, scuba diving at the reef would be restricted during Alternative Offshore Pipelines construction.</p>	<p>Impacts to recreational boating, including cruise ships and scuba diving, are anticipated to be negligible.</p> <p>During operation vessels and recreational fishing would not be permitted within Alternative Project safety zones; given the amount of unrestricted fishing area available in the vicinity of the Alternative Proposed Project, impacts are anticipated to be negligible.</p>	
Alternative Project (Aesthetics)	Onshore	<p>Potential short-term and minor adverse impact to viewshed due to disturbed vegetation during construction and associated timeframe for restoration of these lands</p>	<p>No impact to aesthetics and visual amenity is anticipated from Alternative Onshore Pipelines during operation.</p>	
	Inshore	<p>Potential temporary negligible impact on nearshore recreational boaters and fishermen could include changes in the viewshed due to the presence of construction activities.</p>	<p>No impact to aesthetics and visual amenity is anticipated from Alternative Inshore Pipelines during operation. The Alternative Booster Station would be visible from local waters and roadways resulting in a permanent, but minor impact to aesthetics and visual amenity.</p>	
	Offshore	<p>Alternative SPM buoy systems would not be visible from the shore; as such, impacts would be limited to offshore receptors, such as passing boat traffic.</p>	<p>Overall, the visual impact resulting from the presence of the Alternative SPM buoy systems is anticipated to be negligible.</p>	

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Alternative Project (Protected Offshore Habitats)	Onshore	N/A	N/A	
	Inshore	N/A	N/A	
	Offshore	<p>* Alternative Offshore Pipelines, and the close proximity and sensitivity of the artificial, the Alternative Offshore Pipelines are anticipated to result in minor adverse impacts to the Lonestar Reef.</p> <p>Construction of the Alternative Project would 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.</p>	<p>During operation vessels and commercial fishing would not be permitted within Alternative Project safety zones; given the low vessel traffic area, and the amount of unrestricted fishing area available in the vicinity of the Alternative Project, impacts are anticipated to be negligible.</p>	

12.5 Mitigation of Proposed Project Impacts

The Proposed Project is the LEDPA choice in regard to coastal zone uses, recreation and aesthetics impacts. Therefore, mitigation measures for the anticipated coastal zone use, recreation and aesthetics impacts from only the Proposed Project are discussed in this section.

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 begin are summarized below:

- **Stakeholder Consultation:** During Project installation/commissioning, BWTT will communicate with the USCG and USACE Navigation Branch, and federal pilots regarding offshore Project installation activities. Prior to commencing installation, BWTT 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:**
 - **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 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.

12.7 References

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