

Deepwater Port License Application for the  
**Texas Gulf Terminals Project**

**Volume II** – Environmental Evaluation (Public)

Section 9:  
Socioeconomics

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## ACRONYMS AND ABBREVIATIONS

°	degrees
>	greater than
<	less than
ac	acre
Applicant	Texas Gulf Terminals Inc.
BMP	Best Management Practice
BOEM	Bureau of Ocean Energy Management
bpd	barrels per day
bph	barrels per hour
CALM	Catenary Anchor Leg Mooring
CEQ	Council on Environmental Quality
DWP	deepwater port
DWPA	Deepwater Port Act of 1974, as amended
DWPL	Deepwater Port License
e.g.	exempli gratia [Latin for ‘for example’]
EJ	Environmental Justice
EMS	Emergency Medical Services
EO	Executive Order
ESD	Emergency Services District
ft.	feet
GOM	Gulf of Mexico
ha	hectare
HDD	Horizontal Directional Drilling
i.e.	id est [Latin for ‘in other words’]
ISD	Independent School District
m	meter
MARAD	Maritime Administration
MHT	mean high tide
mi	miles
NAICS	North American Industry Classification System
NEPA	National Environmental Policy Act
nm	nautical miles
OCS	Outer Continental Shelf
OSTF	onshore storage terminal facility
PLEM	pipeline end manifold
PINS	Padre Island National Seashore
PD	Police Department
POCC	Port of Corpus Christi
Project	Texas Gulf Terminals Project
SO	Sherriff’s Office
SPM	single point mooring
U.S.	United States [of America]
USCG	United States Coast Guard

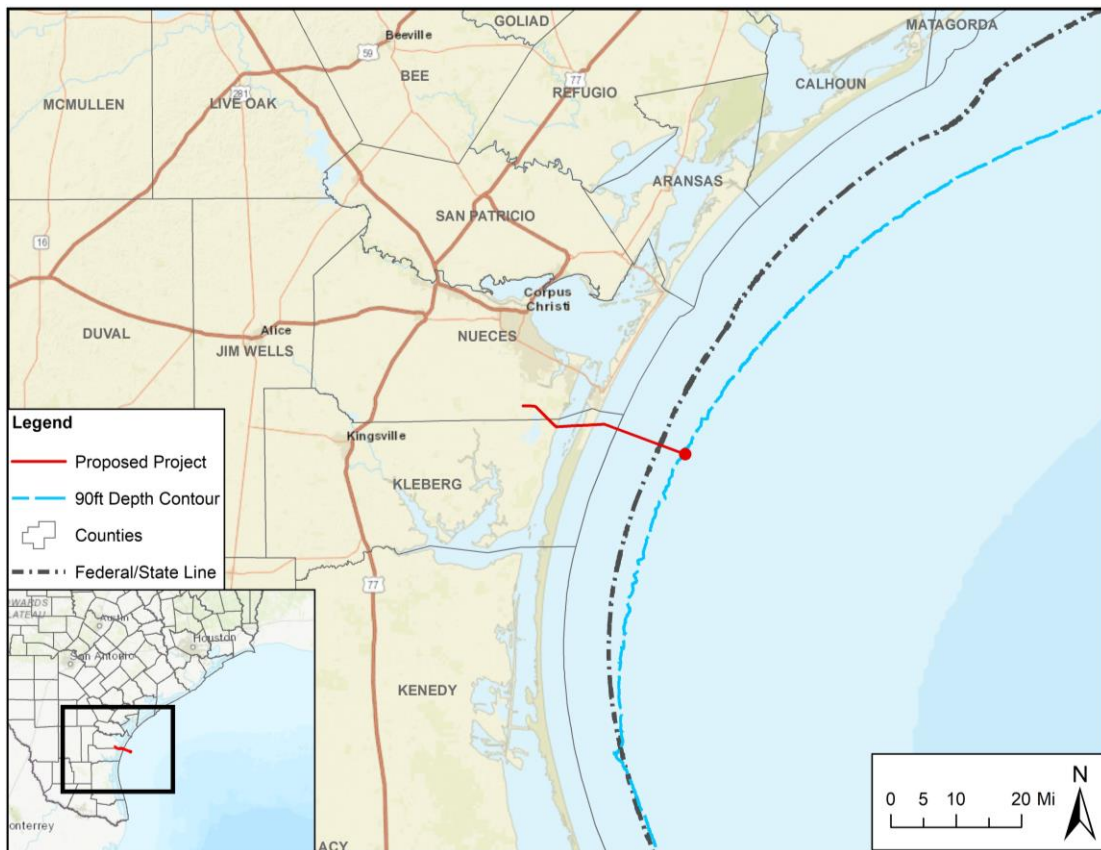
USEPA  
VLCC

United States Environmental Protection Agency  
very large crude carrier

## PROJECT OVERVIEW

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

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



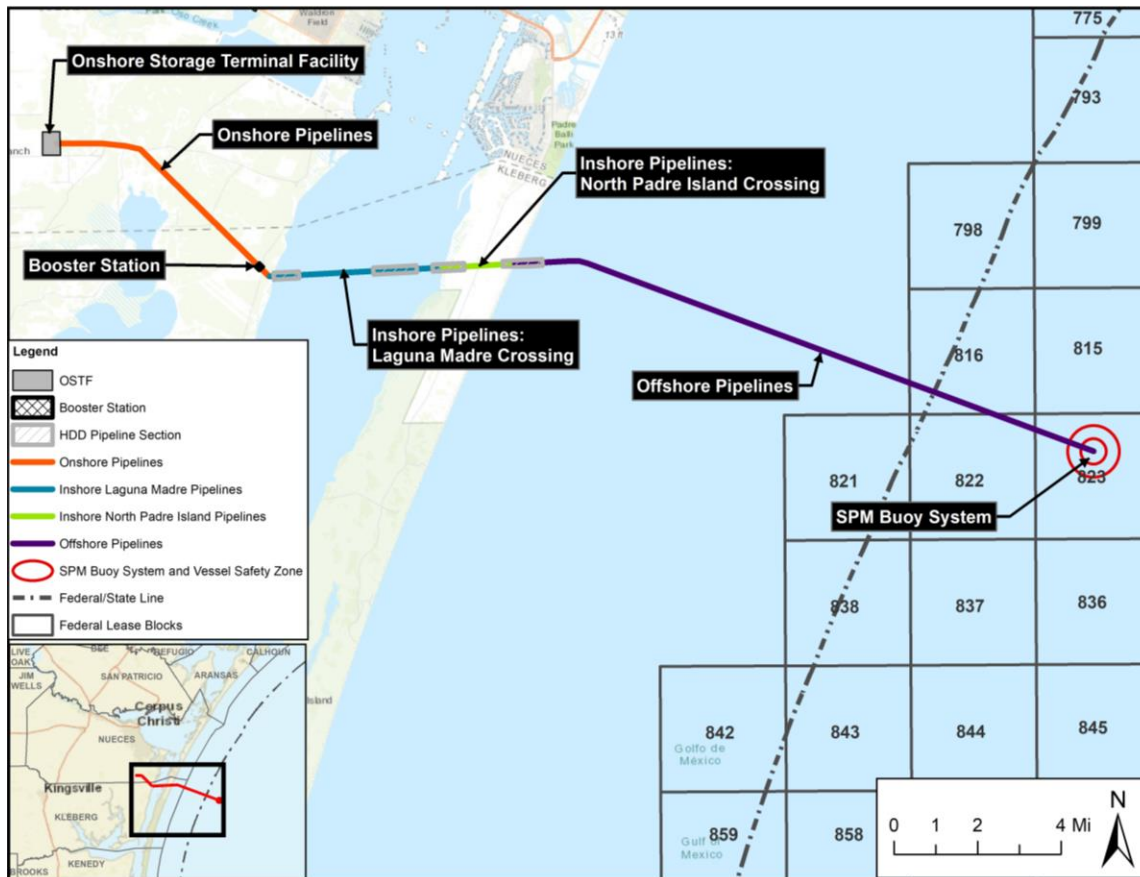
Vicinity Map

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

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

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

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



Project Component Map

## 9.0 SOCIOECONOMICS

This socioeconomic evaluation considers the existing conditions within the vicinity of the Project, including population of the affected region, its demographic makeup, labor force, housing availability, employment, and its social service infrastructure (i.e. schools, fire stations, and hospitals). It must also consider the impact of the Project to the environmental justice (EJ) communities to determine whether a disproportionate impact has been made to minority and low-income populations. These topics are compiled by reviewing Census data, regional indicators such as commercial fishing labor and employment, as well determining if any public services would be impacted for the community in which the Project is located.

Because of the nature of this Project, certain offshore marine industries in the GOM are also considered, including commercial and recreational fishing, offshore oil and gas, and marine shipping and commercial ports. These resources are also discussed in Section 11 “Coastal Zone Uses, Recreation, and Aesthetics”.

### 9.1 Applicable Laws and Regulations

The Applicant has reviewed the following laws and statutes that relate to Socio Economics required to comply with the Deepwater Port (DWP) Act during construction and operation of the proposed Project; Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Protection of Children from Environmental Health and Safety Risks, E.O. 13045, 62 FR 19885.

#### 9.2.1 EO 12898 Environmental Justice

EO 12898 states that “...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.” (59 *Federal Register* 7629 [1994]). The Council on Environmental Quality (CEQ) provides oversight for Federal agencies’ compliance with EO 12898. Therefore, CEQ, in consultation with other Federal agencies, in order to implement NEPA procedures and the EO 12898 prepared the *Environmental Justice: Guidance Under the National Environmental Policy Act* (CEQ 1997). In 1998 the U.S. Environmental Protection Agency (USEPA) prepared additional insight while still incorporating the CEQ 1997 guidance, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses*. These three policies have governed the EJ analysis performed herein.

### 9.2 Existing Environment - Onshore/Inshore

The following subsections provide information to characterize the general social and economic environment for onshore and inshore portions of the Project, including the vicinity of the proposed onshore storage facility and inshore facilities across Padre Island.

#### 9.2.1 Socioeconomic Study Area

A socioeconomic study area takes into consideration the characteristics of a Project’s vicinity and how data is presented in relevant federal, state, and local databases. It is usually defined by the counties and statistical areas likely to be affected by construction, operation, and decommissioning of the Project in regard to the factors being assessed. For this Project the study area is an area referred to as the “Texas Coastal Bend”. The Texas Coastal Bend, whereas not a designated political or biological region, is generally considered to be the region within the notable curve along the Gulf coast from Kennedy County northward to Aransas County, and includes the Laguna Madre and Padre Island. The Project lies entirely within the Texas Coastal Bend, with components located onshore, within the Laguna Madre, traversing Padre Island, and near shore and offshore waters of the GOM. Throughout this socioeconomic impact assessment, when referenced, the Socioeconomic Study Area (study area) will refer to the five counties which make up the Texas Coastal Bend, specifically Kennedy County, Kleberg County, Nueces County, San Patricio County, and Aransas County as shown in Figure 9-1.



The Coastal Bend is referenced for both economic development and tourism since grouping a region together in a symbolic way adds emphasis. 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 Texas Coastal Bend are small in scale and population, as the Texas Coastal Bend offers more of a rural lifestyle. The nearest developed (residential) area to the Project, specifically the storage facility, is approximately 3.3 mi to the north within Nueces County. Corpus Christi is the largest city in the study area at 325,605 persons (estimated for 2017 [Census 2018a]), its furthest southwest edge is the nearest developed (residential) area to the Project, specifically the storage facility, at approximately 3.3 m northeast of the Project.

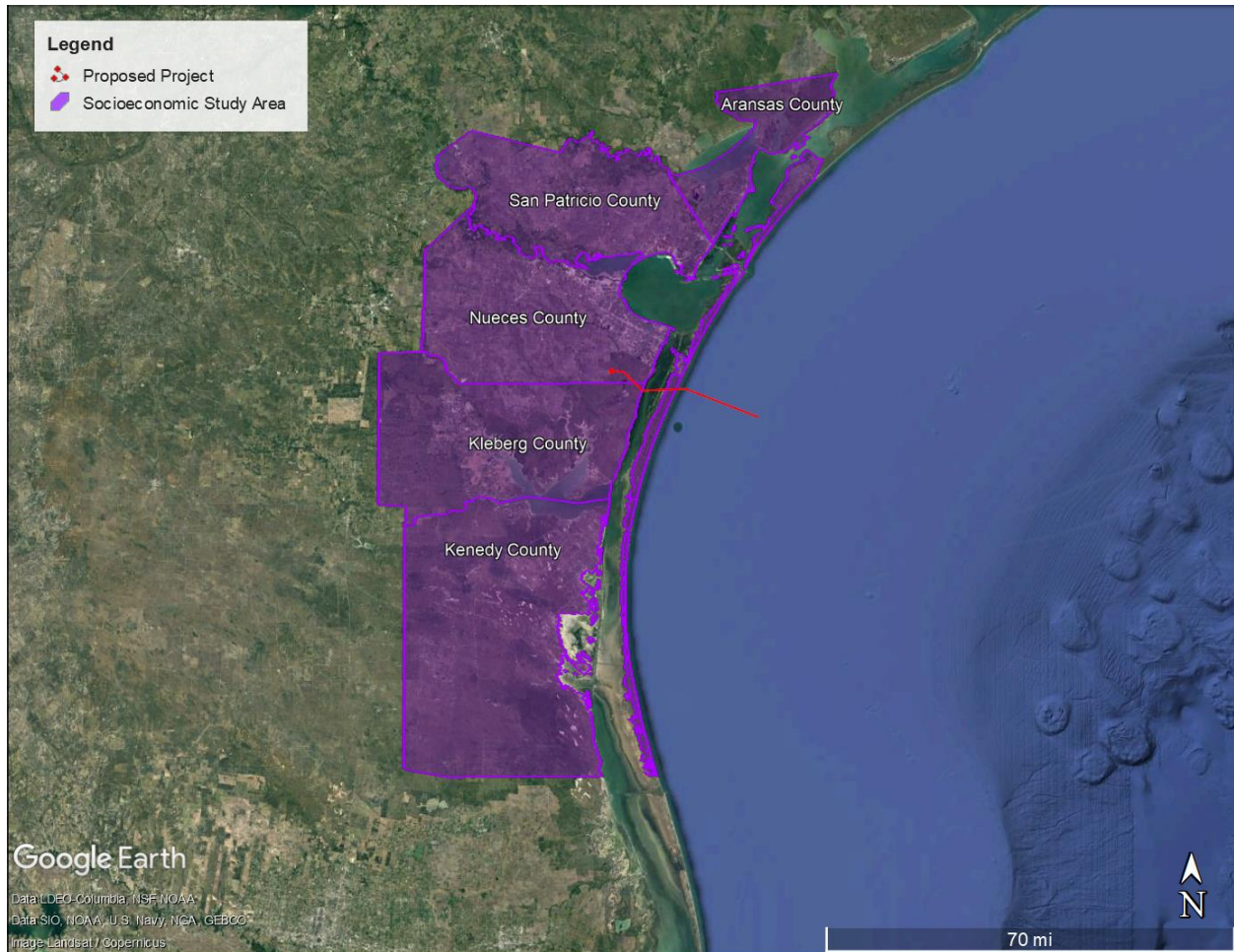


Figure 9-1: Socioeconomic Study area

### 9.2.2 Population

Table 9-1 provides population statistics from 2010 and 2017 for the study area jurisdictions and the state of Texas. The components of population change, 2010 to 2017, show the amount of population change caused by natural increase (net of births and deaths) versus the amount caused by net migration (net of immigration and emigration). Kleberg County was the only county to lose more residents than it gained in the recent period.

Kenedy, Kleberg, and Aransas Counties are primarily rural and agricultural in nature. Kenedy County has the smallest population of the five counties in the study area, and is the third-least populous county in Texas

and fourth-least populous in the U.S. Aransas and Kleberg Counties have a similar size population with a 2017 population of 23,158 and 32,061 respectively (Census 2018a). Aransas largest population center is Rockport City (population 8,766 per U.S. Census), Kleberg County’s largest population center is Kingsville (population 26,071 per U.S. Census 2010) (Census 2018a)]. San Patricio County is also largely rural and agricultural land but has a population approximately double that of Kleberg County with the cities of Mathis, Sinton, Taft, Portland, and Aransas Pass. Although Nueces County is also largely rural and agricultural land, it includes the city of Corpus Christi, the major metropolitan area in the vicinity of the Project, as well as the smaller cities of Robstown, Banquete, and Bishop, and therefore has the largest population of the five counties (Table 9-1).

With the exception of Kleberg County, the region is experiencing steady growth as shown in Table 9-1.

**Table 9-1: Components of Population Change from 2010 to 2017**

Jurisdiction	2010 <sup>(a)</sup>	2017 <sup>(b)</sup>	Components of Population Change 2010-2017			
			Percent Change <sup>(c)</sup>	Total Population Change <sup>(c)</sup>	Natural Increase	Net Migration
Texas	25,145,561	28,304,596	12.6%	3,158,496	1,529,843	1,616,768
Kenedy County	416	417	1.0%	4	14	-12
Kleberg County	32,061	31,088	-3.0%	-973	1,551	-2,563
Nueces County	340,223	361,221	6.2%	20,998	15,144	5,937
San Patricio County	64,804	67,215	3.7%	2,408	2,606	-210
Aransas County	23,158	25,572	10.4%	2,414	-615	2,982
Notes: (a) 2010 Census data (b) Population estimates based on the 2010 Census and reflect changes to the April 1, 2010 population due to the Count Question Resolution program and geographic program revisions. (c) Total population change includes a residual. This residual represents the change in population that cannot be attributed to any specific demographic component.  Sources: Census 2018a, b						

### 9.2.3 Labor Force and Employment

Characterization of the employment and economic sectors in the study area will allow a means by which to gauge whether the existing workforce can support construction, operation, and decommissioning of the Project. Further, the manner in which a Project may result in benefits or adverse impact to a community can be determined by consideration of level of education typical to the area, typical commute times/distances within the area, the local employment rate and size of civilian labor force, and median income within the area.

A significant majority of the study area’s labor availability has a high school diploma. The statewide average is 82.3% and the combined five-county area’s average is at 75.5% (Table 9-2). The rate of matriculation for a college degree is 18.4% within the study area while the statewide average is a little higher at 28.1% (Table 9-2). (Census 2018f)

The availability of the regional work force to travel to work is often measured by the mean travel time to work. For the state of Texas it is nearly 26 minutes (25.9) but for the region it is 20.2 minutes. This indicates that the majority of housing is located near employment centers in the study area.

A typical measure of the available workforce in an area is the civilian labor force, which is defined as employed civilians at least 16 years of age as well as unemployed civilians of the same age that are actively seeking work during the previous four weeks (Bureau Of Labor Statistics 2018). The civilian labor force in the study area is 56.7% of the total population, which is slightly lower than the state of Texas (Table 9-2).

Median household income in Kleberg and Aransas Counties is slightly lower than in Nueces and San Patricio counties, as well as that of the state, and the highly rural Kenedy County is half of that of the State. As seen in Table 9-2, Nueces County houses a significant portion (approximately 78.7%) of the employers within the study area. As expected, the majority of employment in the area also occurs in Nueces County, with the least amount in Kenedy County (Table 9-2). This indicates that the majority of the work done within the study area occurs within Nueces County, likely in Corpus Christi and the immediate vicinity.

The recent reduction in employment seen in Kenedy, Kleberg, and San Patricio Counties can be attributed to the general downturn in the energy market. Texas experienced a peak in 2014 of \$15.7 billion in annual oil and gas revenues. By 2015, that revenue peak was reduced to \$13.8 billion and in 2016, \$9.4 billion. Layoffs were frequent during this time throughout the state of Texas and for temporary employees who travel from one work location to another, some likely left the area (Houston Chronicle 2017). Industry and occupation categories for the study area are presented in Section 9.3.

**Table 9-2: Education, Labor and Employment Indicators**

Jurisdiction	High school graduate or higher (percent of persons age 25 years+, 2012-2016)	Bachelor's degree or higher (percent of persons age 25 years+, 2012-2016)	Civilian Labor Force Aged 16+ (percent of population)	Unemployment Rate (percent) (2016)	Median Household Income (2012-2016)	Total employer establishments (2016)	Total employment (2016)	Total employment percent change (2015-2016)
Texas	82.3%	28.1%	64.2%	6.4%	\$54,727	579,168	10,429,924	1.9%
Kenedy County	57.6%	11.5%	44.6%	0.0%	\$24,000	20	173	-4.9%
Kleberg County	77.4%	25.3%	62.4%	10.5%	\$41,469	571	6,976	-1.7%
Nueces County	81.3%	20.5%	63.6%	6.1%	\$51,882	7,974	146,343	2.0%
San Patricio County	78.1%	14.5%	61.2%	5.3%	\$52,659	1,052	15,696	-2.6%
Aransas County	83.2%	20.2%	51.5%	7.5%	\$44,851	517	4,237	1.7%

Source: Census 2018a,b,f

#### 9.2.4 Housing

The change in the population from 2010 to 2016 is reflected in the increase in the number of housing units and building permits for the region and for the state of Texas (Table 9-3). Nueces County is experiencing the most significant change, with 820 building permits granted in 2017. The average region-wide owner-occupied housing rate is 58.5% with San Patricio having the largest individual rate at 68.3%. With an owner-occupied housing rate of 58.5%, there is over 40% of rental housing stock available in the study area, as seen in Table 9-3.

**Table 9-3: Housing and Building Permit Information for Socioeconomic Study Area and State of Texas**

Jurisdiction	2010 Housing Units	2016 Housing Units	Owner-occupied Housing Rate 2012-2016	Vacant Housing 2016	Building Permits 2017
Texas	9,718,470	10,441,643	61.9%	12.2%	175,112
Kenedy County	282	278	37.1%	38.8%	n/a
Kleberg County	12,799	13,106	54.7%	17.8%	5

Jurisdiction	2010 Housing Units	2016 Housing Units	Owner-occupied Housing Rate 2012-2016	Vacant Housing 2016	Building Permits 2017
Nueces County	138,289	145,791	57.4%	12.1%	820
San Patricio County	26,496	27,131	68.3%	14.4%	209
Aransas County	14,980	15,726	74.8%	39.3%	157
n/a: Information not available Source: Census 2018g					

### 9.2.5 Public Services

Public services within the study area include: medical facilities; police, fire, and emergency responders; and schools. A summary of the facilities within the study area is provided below.

#### 9.2.5.1 Medical

Medical facilities located within the study area include hospitals, surgical centers, rehabilitation facilities, behavioral hospitals, and urgent care facilities. The most likely type of medical facility needed in immediate response to an emergency is a hospital. The majority of hospitals within the study area are located within Nueces County, primarily in and around Corpus Christi (Table 9-4). The CHRISTUS Spohn Hospital Corpus Christi South is the closest hospital with an emergency room to the proposed onshore storage facility, and CHRISTUS Spohn Hospital Corpus Christi Shoreline is the closest hospital emergency room to the Port of Corpus Christi (POCC) (see Table 9-4).

**Table 9-4: Hospitals in the Socioeconomic Study Area**

County	Hospital Name	Address	Approximate Distance to Project (miles)	Approximate Distance to the POCC (miles)	Emergency and Trauma Services
Kenedy County	No hospitals identified		-	-	No
Kleberg County	CHRISTUS Spohn Hospital Kleberg	1311 General Cavazos Boulevard Kingsville, Texas 78363	27.7	36.9	Yes
Nueces County	Northwest Regional Emergency Department	13725 Northwest Boulevard, Corpus Christi, TX 78410	22.7	15.2	Yes
	Post Acute Medical Specialty Hospital of Corpus Christi South	6226 Saratoga Boulevard, Corpus Christi, TX 78414	6.8	10.1	No
	CHRISTUS Spohn Hospital Corpus Christi South	5950 Saratoga Boulevard, Corpus Christi, Texas 78414	6.9	10.0	Yes
	Corpus Christi Rehabilitation Hospital	5726 Esplanade Drive, Corpus Christi, TX 78414	7.2	10.0	No
	South Texas Surgical Hospital	6130 Parkway Drive, Corpus Christi, TX 78414	7.1	10.0	No
	The Corpus Christi Medical Center - Bay Area Hospital	7101 S. Padre Island Drive, Corpus Christi, TX 78412	8.3	10.0	Yes
	Driscoll Children's Hospital	3533 S. Alameda Street, Corpus Christi, TX 78411	11.0	5.9	Yes [Infant Only]
	Doctors Regional Emergency Department	3315 S. Alameda Street, Corpus Christi, TX 78411	11.3	5.8	Yes

County	Hospital Name	Address	Approximate Distance to Project (miles)	Approximate Distance to the POCC (miles)	Emergency and Trauma Services
	CHRISTUS Spohn Hospital Corpus Christi Shoreline	600 Elizabeth Street, Corpus Christi, Texas 78404	13.0	3.8	Yes
	Post Acute Medical Specialty Hospital at Corpus Christi North	600 Elizabeth Street, Suite 3C, Corpus Christi, TX, 78404	13.0	3.8	No
	CHRISTUS Spohn Hospital Memorial	2606 Hospital Boulevard, Corpus Christi, Texas 78405	13.0	4.0	Yes
San Patricio County	Northshore Emergency Center	1702 Highway 181 North, Suite A-11, Portland, TX 78374	21.6	6.2	Yes
	Care Regional Medical Center	1711 West Wheeler Ave, Aransas Pass, TX 78336	27.3	14.9	Yes
Aransas County	Code 3 Emergency Room and Urgent Care	400 Enterprise Blvd Suite A Rockport, TX 78382	37.9	26.2	Yes
Sources: Post Acute Medical 2018; Christus Spohn 2018; South Texas Surgical Hospital 2018; Driscoll Children's Hospital 2018; Corpus Christi Medical Center 2018; Code 3 Emergency Room and Urgent Care 2018.					

#### 9.2.5.2 Safety and Emergency Response

Fire, police, and emergency response facilities are primarily located in or nearby population centers and are commensurate with the population and industrial activity in the area.

In the South Texas Coastal Bend, the USCG Sector Corpus Christi is responsible for enhancing the safety and security of the Maritime Transportation System, enforcing maritime boundaries, conducting search and rescue operations, ensure the safety of the boating public and commercial interests, and protection of the environment.

#### Fire Fighting

Within the study area there are 13 fire departments and 44 firefighting stations, primarily located in or nearby population centers and are commensurate with the population and industrial activity in the area (see Table 9-5). These firefighting stations provide fire, water, auto rescue, and Emergency Medical Services (EMS) services to the five counties of the study area, including Flour Bluff, Padre Island, and PINS. The closest fire station to the onshore storage facility and inshore pipelines would be Corpus Christi Fire Department Station 17 located in Corpus Christi, approximately 5.1 mi away (see Table 9-5). Facilities within the study area are familiar with oil and gas activities and would be able to provide appropriate support for a fire at onshore storage and inshore pipeline facilities.

All counties within the study area have firefighting stations with the exception of Kenedy County. As discussed above, Kenedy County is mainly rural, and one of the lowest populated counties in the U.S., and this is likely why this country is served by fire stations from the surrounding counties rather than having its own fire stations.

Details of firefighting stations within the socioeconomic study area are provided in Table 9-5.



**Table 9-5: Locations of Firefighting Stations within the Socioeconomic Study Area**

County	Department	Station	Location	Approximate Distance to Project* (miles)
Kenedy County	No fire stations identified			-
Kleberg County	Kingsville, TX Fire Departments	Ricardo Volunteer Fire Department	202 West County Road 2160, Kingsville, TX 78363	39.4
		Kingsville Fire Department	119 North 10th Street, Kingsville, TX 78363	27.9
		Kingsville Volunteer Fire Department	323 North 6th Street, Kingsville, TX 78363	28.3
	Riviera, TX Fire Departments	Riviera Volunteer Fire Department	100 East South Boulevard, Riviera, TX 78379	31.7
Nueces County	Agua Dulce, TX Fire Departments	Agua Dulce Volunteer Fire Department	1510 Second Street, Agua Dulce, TX 78330	33.2
	Bishop, TX Fire Departments	Bishop Fire Emergency Services District (ESD) 3	205 South Pacific, Bishop, TX 78343	23.7
	Corpus Christi, TX Fire Departments	Nueces County ESD 4	5781 Farm to Market 666, Corpus Christi, TX 78380	31.0
		Nueces County ESD 2	337 Yorktown Boulevard, Corpus Christi, TX 78418	7.2
		Refinery Terminal Fire Company	4802 Up River Road, Corpus Christi, TX 78407	15.2
		Naval Air Station - Corpus Christi Fire Department	10800 D Street Building 7, Corpus Christi, TX 78419	11.6
		Corpus Christi Fire Department	2406 Leopard Street, Corpus Christi, TX 78408	14.2
		Corpus Christi Fire Department - Station 1	514 Belden, Corpus Christi, TX 78401	14.6
		Corpus Christi Fire Department - Station 2	13421 Leopard, Corpus Christi, TX 78410	22.5
		Corpus Christi Fire Department - Station 3	1401 Morgan, Corpus Christi, TX 78404	12.9
		Corpus Christi Fire Department - Station 4	2338 Rodd Field Road, Corpus Christi, TX 78414	7.3
		Corpus Christi Fire Department - Station 5	3312 Leopard Street, Corpus Christi, TX 78408	14.2
		Corpus Christi Fire Department - Station 6	6713 Weber Road, Corpus Christi, TX 78413	7.3
		Corpus Christi Fire Department - Station 7	3750 Staples Street, Corpus Christi, TX 78411	10.4
		Corpus Christi Fire Department - Station 8	4645 Kostoryz Road, Corpus Christi, TX 78415	10.0
		Corpus Christi Fire Department - Station 9	501 Navigation, Corpus Christi, TX 78408	14.2
		Corpus Christi Fire Department - Station 10	1550 Horne, Corpus Christi, TX 78416	11.6
		Corpus Christi Fire Department - Station 11	910 Airline, Corpus Christi, TX 78412	9.2
		Corpus Christi Fire Department - Station 12	2120 Rand Morgan Road, Corpus Christi, TX 78410	17.8
		Corpus Christi Fire Department - Station 13	1801 Waldron Road, Corpus Christi, TX 78418	8.9
		Corpus Christi Fire Department - Station 14	5901 South Staples, Corpus Christi, TX 78413	7.5
		Corpus Christi Fire Department - Station 15	14202 Commodore, Corpus Christi, TX 78418	11.7
	Corpus Christi Fire Department - Station 16	8185 State Highway 361, Corpus Christi, TX 78373	17.4	
Corpus Christi Fire Department - Station 17	6869 Yorktown, Corpus Christi, TX 78414	5.1		
Annville Volunteer Fire Department	11551 Leopard Street, Corpus Christi, TX 78410	20.9		
Robstown, TX Fire Departments	Robstown Fire Department	516 East Avenue B, Robstown, TX 78380	20.5	

County	Department	Station	Location	Approximate Distance to Project* (miles)
		Annville Volunteer Fire Department - Station 2	5242 County Road 73, Robstown, TX 78380	24.5
		Annville Volunteer Fire Department - Station 3	3879 County Road 61, Robstown, TX 78380	17.1
San Patricio County	Aransas Pass, TX Fire Departments	Aransas Pass Fire Department	600 West Cleveland Boulevard, Aransas Pass, TX 78336	27.3
	Gregory, TX Fire Departments	Gregory Volunteer Fire Department	308 Ayers Street, Gregory, TX 78359	23.8
	Ingleside, TX Fire Departments	Ingleside Volunteer Fire Department	2425 8th Street, Ingleside, TX 78362	22.7
		Ingleside on the Bay Volunteer Fire Department	477 Starlight, Ingleside, TX 78362	20.3
		Naval Station Ingleside Texas Fire Department	290 South Coral Sea Road, Ingleside, TX 78362	20.8
	Mathis, TX Fire Departments	Mathis Volunteer Fire Department	411 East San Patricio Avenue, Mathis, TX 78368	42.8
	Sinton, TX Fire Departments	Papalote Volunteer Fire Department	134 County Road 629, Sinton, TX 78387	41.7
		Sinton Fire Department	317 East Market, Sinton, TX 78387	31.3
	Taft, TX Fire Departments	Taft Volunteer Fire Department	502 Victoria, Taft, TX 78390	27.0
Aransas County	Rockport, TX Fire Departments	Holiday Beach Volunteer Fire Department	6779 Highway 35 North, Rockport, TX 78382	47.3
		Rockport Volunteer Fire Department	212 Gagon Street, Rockport, TX 78382	37.1
		Lamar Volunteer Fire Department	302 Bois D'Arc Road 78382 Rockport, Texas	46.3
* Approximate distance to closest point of proposed Project Source: FireDepartment.Net. 2018, confirmed using Google Earth 2018.				

Police

Each of the five counties have a Sherriff's Department and the cities of Kingsville, Corpus Christi, Aransas Pass, Ingleside, and Rockport all have municipal police departments (PDs) (see Table 9-6).

**Table 9-6: Law Enforcement Locations within the Socioeconomic Study Area**

County	Department	Location	Approximate Distance to Project* (miles)
Kenedy County	Kenedy County Sherriff's Office (SO)	175 Cuellar Avenue, Sarita, TX 78385	34.1
Kleberg County	Kleberg County SO	1500 East King Avenue, Kingsville, Texas 78363	27.1
	Kingsville Police Department (PD)	1700 East King Avenue, Kingsville, Texas 78363	27.0
Nueces County	Nueces Co SO	901 Leopard Street, Corpus Christi, Texas 78401	9.4
	Aransas Pass PD	600 W Cleveland, Aransas Pass, Texas 78336	27.3
	Bishop PD	115 South Ash Avenue, Bishop, Texas 78343	23.7
	Corpus Christi City Marshals	120 North Chaparral, Corpus Christi, Texas 78401	14.0
	Corpus Christi PD	321 John Sartain Street Corpus Christi, Texas 78401	14.0
	Driscoll PD	130 West Avenue D, PO Box 178, Driscoll, Texas 78351	21.4

County	Department	Location	Approximate Distance to Project* (miles)
	Nueces County Constable Corrections Department	10110 Compton Road, Corpus Christi, Texas 78418	8.0
	Port Aransas PD	705 West Avenue A, Port Aransas, Texas 78373	22.4
	Robstown PD	PO Box 626, 430 East Main Street, Robstown, Texas 78380	20.5
San Patricio County	San Patricio Co SO	300 N Rachal, PO Box 1382, Sinton, Texas 78387	31.4
	Aransas Pass PD	600 West Cleveland, Aransas Pass, Texas 78336	27.3
	Gregory PD	206 West 4th Street, PO Box 297, Gregory, Texas 78359	24.1
	Ingleside PD	PO Drawer 910, 2425 8th Street, Ingleside, Texas 78362	22.7
	Mathis PD	214 North Nueces, Mathis, Texas 78368	42.8
	Portland PD	1902 Bill G Webb, Portland, Texas 78374	21.8
	Sinton PD	217 East Market Street, Sinton, Texas 78387	31.3
	Taft PD	501 Green Avenue, Taft, Texas 78390	27.0
Aransas County	Aransas County SO	301 N Live Oak St Rockport, Texas 78382	37.2
	Rockport PD	714 E. Concho St Rockport, Texas 78382	37.2
* Approximate distance to closest point of proposed Project Source: USA Cops 2018, confirmed using Google Earth 2018.			

### Coast Guard

In the South Texas Coastal Bend, the USCG Sector Corpus Christi is responsible for enhancing the safety and security of the Maritime Transportation System, enforcing maritime boundaries, conducting search and rescue operations, ensure the safety of the boating public and commercial interests, and protection of the environment. The Sector includes 662 Active Duty, Reserve, and Civilian Personnel assigned to four Coastal Patrol Boats, two Marine Safety Detachments, one Aids to Navigation construction tender, three small boat stations, three aids to navigation teams, and Air Station, Sector Headquarters, and nearly 400 volunteer Coast Guard Auxiliarists. They conduct search and rescue operations, address oil rig leaks, provide maritime security, and provide emergency response/rescue services via ocean-going vessel and air support. The Coast Guard Air Station Corpus Christi is co-located with Sector Corpus Christi offices at Naval Air Station Corpus Christi and is staffed and experienced in providing appropriate response to emergency situations that could occur at the Project facilities. (USCG 2017)

#### 9.2.5.3 Schools

There are no schools within 1,000 feet (ft.) of the proposed alternative, with the closest being 8.1 mi north-northeast (Flour Bluff High School) from the onshore storage facility and 7.1 mi northwest from the North Padre Island inshore pipeline crossing. Table 9-7 provides a summary of school information for the study area.



**Table 9-7: Schools in the Socioeconomic Study Area**

County	Number of Schools	Number of Students
Kenedy	1 public school	76
Kleberg	14 public schools	5,176
Nueces	116 public schools	62,937
San Patricio	32 public schools	14,753
Aransas	5 public schools	3,405
Sources: Public School Review 2018a, b, c		

**9.2.6 Taxes and Revenues**

The State of Texas does not collect personal income tax. Local governments rely on property taxes and sales tax. The property taxes help fund the independent school districts (ISDs) as well. Sales tax is imposed on all retail sales, non-essential taxable services, and the leases and rentals of most goods. The cities, counties, and transit agencies have the authority to impose additional special purpose taxes. The statewide sales tax is 6.25% and each county has the option to add an additional percent up to 2.0%. Nueces County’s combined sales tax is 6.75%, Kleberg County’s is primarily 6.75% with the exception of Kingsville which is 8.25%, San Patricio’s is 6.25%, Aransas 7.25%, and Kenedy 8.25%.

Basic fiscal data was not available for Kenedy, Kleberg, San Patricio, or Aransas Counties. Information available for Nueces County is presented in Table 9-8.

**Table 9-8: Revenues, Expenditure, and Net Profit/Loss for Nueces County (2015-16)**

Total Revenues	Total Expenditures	Net Profit/Loss
\$171,664,762	\$172,645,872	-\$981,110
Sources: Nueces County Government 2017		

**9.3 Existing Environment - Offshore**

**9.3.1 Oil and Gas Industry**

A primary industry within Texas and the Coastal Bend region is centered on the production and transport of oil and gas, both onshore and offshore. Thus, the Oil and Gas Industry in Texas and in the Coastal Bend region is one of the major employers. In fact, in October 2017 it was reported that Texas was producing 3.777 million barrels per day (bpd), which is more than China, the United Arab Emirates, or Kuwait (AEI 2018).

Understanding the number of persons employed by industry or occupation within the region will allow for assessment of the availability of employees in the area with skill sets transferrable to installation, operation, and decommissioning of the Project. The information provided in Tables 9-9 and 9-10 provides the number of workers in industry and occupation categories that involve skill sets potentially transferrable to the Project, including the offshore/marine components. This includes:

- onshore and offshore oil and natural gas extraction and support activities;
- onshore and offshore pipeline construction;
- marine cargo handling;
- marine engineering and specialty services; and
- maritime specialists.

The information provided is from 2010 and 2012 U.S. Census data and the categories are defined by the North American Industry Classification System (NAICS), which are generally more accurate at the national and state level. The number of workers in Texas employed in the oil and gas industry categories make up a fairly large portion of the total national workforce in the same categories. Although the proportion of the total number of workers in Texas in the marine/maritime industries is not as large, a sizeable number of skilled workers are available in the state.

**Table 9-9: Number of Employed Persons in Industry or Occupation Categories with Skill Sets Transferrable to the Project for the State of Texas**

		U.S.	Texas
Natural Gas Distribution	Number Workers by Industry Classification 2012	251,811	31,566
Oil and Gas Pipeline Related Structures Construction		174,432	65,192
Marine, Machinery, Equipment, and Supplies Merchant Wholesalers		6,608	500
Other Warehousing and Storage		66,767	7,208
Support Activities for Oil and Gas Operations		323,523	137,514
Marine Cargo Handling		53,313	4,837
Marine Engineers and Naval Architects	Number Workers by Census Occupation Group 2006 – 2010	119,010	520
Wind Turbine Service Technicians, Signal & Track Switch Repairs, and Commercial Divers		238,015	20,960
Sailors and Marine Oilers, and Ship Engineers		29,475	2,615
Sources: Census 2018i			

**Table 9-10: Number of Employed Persons in Industry or Occupation Categories with Skill Sets Transferrable to the Project for the Coastal Bend Region**

NAICS Code	NAICS Title	Regional Employment
3241	Petroleum & Coal Products Manufacturing	2974
3251	Basic Chemical Manufacturing	618
3259	Other Chemical Preparation Manufacturing	92
3261	Plastics Product Manufacturing	12
4246	Chemical Merchant Wholesalers	353
4247	Petroleum Merchant Wholesalers	653
4471	Gasoline Stations	3047
2111	Oil and Gas Extraction	1287
2122	Metal Ore Mining	25
2123	Nonmetallic Mineral Mining and Quarrying	150
2131	Support Activities for Mining	5893
2211	Power Generation and Supply	956
Source: Texas Industry Profiles, March 2018		

9.3.2 Commercial Fishing

Commercial fishing is any activity associated with taking or handling salt or freshwater aquatic products for pay, sale, or exchange. Due to its proximity to the GOM, the state of Texas and the Coastal Bend region are active in this industry. Commercial fishing is regulated by the Texas Parks and Wildlife Department (TPWD).

The commercial fishing establishments are categorized in two ways. Non-employer establishments include sole-proprietorships, partnerships between two or more people, and incorporated business with no employees (only owners or partners). If the commercial fishing establishment is set up as a business with paid employees, then it is classified and tracked separately.

The U.S. Census Bureau collects data associated with the commercial fishing industry (NAICS code: 1141) which is defined by the NAICS as: “*comprises establishments primarily engaged in the commercial catching or taking of finfish, shellfish, or miscellaneous marine products from a natural habitat, such as the catching of bluefish, eels, salmon, tuna, clams, crabs, lobsters, mussels, oysters, shrimp, frogs, sea urchins, and turtles*” (U.S. Census Bureau 2018c).

Table 9-11 presents 2015 commercial fishing industry employment, receipts, and payroll statistics for the study area.

**Table 9-11: Commercial Fishing Industry Employment, Receipts, and Payroll Statistics, 2015<sup>(a)</sup>**

Jurisdiction	Non-Employer Establishments		Paid Employee Establishments		
	Number Establishments 2015 <sup>(b)</sup>	Receipts (\$1,000) 2015	Number of Establishments 2015 <sup>(c)</sup>	Paid Employees 2015	Annual Payroll (\$1000) 2015
Texas	3,909	205,927	76	222	4,404
Kenedy County	D	D	0	0	0
Kleberg County	19	569	0	0	0
Nueces County	140	5,700	2	0-19	D
San Patricio County	56	1,797	0	0	0
Aransas County	125	5,487	2	0-19	D

Notes:  
D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals

(a) Non-employer statistics originate from tax return information of the Internal Revenue Service. The data are subject to non-sampling error such as errors of self-classification by industry on tax forms, as well as errors of response, non-reporting and coverage. Values provided by each firm are slightly modified to protect the respondent's confidentiality.  
(b) Non-employer establishments include all firms with no paid employees or payroll with receipts of \$1,000 or more and are subject to federal income tax.  
(c) Paid employee establishments include all operating establishments with one or more paid employee

Source: Census 2018c

Almost all of the commercial fishing establishments in the study area are non-employer establishments, and most are likely self-employed fishermen, although some may be partnerships or incorporated businesses with no employees. Similarly, the majority of the commercial fishing establishments in the states are non-employer establishments. In total, there are approximately 340 non-employer establishments in the study area, approximately 8.7% of the non-employer establishments in Texas. The revenues generated by those 340 non-employer establishments, approximately \$13.6 million, is about 6.6% of the total revenues generated by non-employer establishments in Texas in 2015. Only Nueces and

Aransas Counties were recorded as having commercial fishing paid employee establishments, and even numbers in those two counties were small (two establishments employing 0 to 19 persons in each county). Given the small number of paid employee fishing establishments registered in Nueces and Aransas Counties, the total payroll at those establishments was withheld to avoid disclosing data for individual companies. Commercial fishing activity, including the catch data, species data, and trip data, are addressed in Section 11, “Costal Zone Uses, Recreation, and Aesthetics.”

### 9.3.3 Recreation and Tourism

There are numerous recreational and tourist amenities in the study area. Due to the coastal environment, many of the recreational activities are tied to the GOM and water activities. The beaches at Port Aransas and Padre Island are well known. The PINS is known throughout the country for its sandy beaches, vegetation, and birding activities. Golfing, hunting, and AA-baseball (for the Houston Astros) are also found here. Typical offshore activities include boating, recreational fishing, and sailing.

Corpus Christi is the sixth most popular tourist destination in Texas, with leisure-based visitors accounting for 81% of the total visitation volume by visitor days. Corpus Christi is home to the Texas State Aquarium, Schlitterbahn Water Park, the Corpus Christi Museum of Science and History, and the Art Museum of South Texas/Art Center of Corpus Christi. An estimated total of 8.1 million visitors spent over 19 million days in the area in 2012-13, injecting over \$1.2 billion into the Corpus Christi economy. Total visitor spending in the area has increased nearly 55% from 2003. This may be partially due to the average visitor becoming increasingly older in age, with visitors aged 50 years and older more prevalent, and with this, more affluent. (Lee 2014; Corpus Christi Convention & Visitors Bureau 2018)

Over the study area as a whole, in 2016, over 28,000 people were directly employed within the recreation and tourism industries (including arts, entertainment, and recreation, and accommodation and food services) (Census 2018) (see Table 9-12).

Additional information regarding recreational activities can be found in Section 11 “Costal Zone Uses, Recreation, and Aesthetics”, and recreational fishing information can be found in Section 6 “Commercial and Recreational Fisheries”.

**Table 9-12: Recreation and Tourism Employment, Receipts, and Payroll Statistics 2016**

Jurisdiction	Total for all Sectors 2016 <sup>(a)</sup>			Arts, Entertainment, and Recreation 2016 <sup>(b)</sup>					Accommodation and Food Services 2016 <sup>(c)</sup>				
	Number of Establishments	Paid Employees	Annual Payroll (\$1000)	Number of Establishments	Paid Employees		Annual Payroll (\$1000)		Number of Establishments	Paid Employees		Annual Payroll (\$1000)	
					No.	% of Total for all Sectors	No.	% of Total for all Sectors		No.	% of Total for all Sectors	No.	% of Total for all Sectors
Texas	579,168	10,429,924	526,782,643	7,308	144,598	1.4	4,254,204	0.8	54,188	1,177,398	11.3	20,649,987	3.9
Kenedy County	20	173	12,660	2	0-19	0-11	D	D	1	0-19	0-11	D	D
Kleberg County	571	6,976	212,585	6	21	0.3	815	0.4	78	1,325	19.0	20,110	9.5
Nueces County	7,974	146,343	5,848,529	101	1,926	1.3	38,098	0.7	896	23,019	15.7	316,101	5.4
San Patricio County	1,052	15,696	719,914	13	199	1.3	2,513	0.3	131	2,123	13.5	30,619	4.3
Aransas County	517	4,237	126,779	13	123	2.9	2,670	2.1	98	1,191	28.1	20,722	16.3

Notes:  
 (a) NAICS code 00: Total for all sectors  
 (b) NAICS code 71: Arts, entertainment, and recreation: This sector comprises establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.  
 (c) NAICS code 72: Accommodation and food services: The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.  
 D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals

Sources: Census 2018d,e

### 9.3.4 Maritime Industries

The study area is home to many different maritime industries. The maritime industry is comprised of enterprises that engage in designing, manufacturing, operating, repairing, or supplying vessels and their component parts. It also includes managing and operating shipping lines, shipyards, dry docks, and marine railways.

The Union Pacific Railroad has a direct line to the POCC that runs north to major metropolitan centers including San Antonio, Houston, and Dallas, and outside the state. This railroad access supports the maritime industry and port activities.

## 9.4 Environmental Consequences

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

A summary of key socioeconomic indicators associated with the Project and utilized to undertake this assessment are presented in Table 9-13.

**Table 9-13: Project Workforce Summary Table**

Period	Attribute Category	Attribute
<b>Construction</b>	Duration	16 months
	Average Monthly Workforce	200 workers
	Peak Workforce	305 workers
	Average Duration of Worker Employment	10.5 months
	Worker Origin	80% regional hire from Texas / 20% non-local
	Worker Cycle	28 days on / 7 days off
	Average Annual Salary	\$42,000
	Total Payroll	\$8.5 million
<b>Operation</b>	Duration	50 years
	Average Monthly Workforce	41 workers
	Peak Workforce	50 workers
	Average Duration of Worker Employment	24 months
	Worker Origin	80% regional hire from Texas / 20% non-local
	Worker Cycle	Daily or Shift
	Average Annual Salary	\$91,000
	Total Payroll	\$5.79 million/year
<b>Decommissioning</b>	Duration	3 months
	Average Monthly Workforce	85 workers
	Peak Workforce	85 workers
	Average Duration of Worker Employment	90 days (or months)
	Worker Origin	80% regional hire from Texas / 20% non-local
	Worker Cycle	28 days on / 7 days off

	Average Annual Salary	\$42,000
	Total Payroll	\$0.9 million

#### 9.4.1 Installation/Commissioning

##### 9.4.1.1 Population

Installation and commissioning of the proposed Project will require engineering, construction management, and construction personnel with specialized skill sets for both onshore and offshore oil and gas storage, pipeline, and transfer facilities. The Applicant anticipates employing a workforce of 200 workers per month (average) for 16 months until the work is complete. The largest number of workers employed at one time (peak workforce) would be approximately 305 individuals.

Should the Project employ all or many of the required installation and commissioning workers from outside of the state, region, and study area, it is possible that the study area could see a temporary impact to population. However, the migration of such a small number of temporary workers to the local area would not result in any significant impact to the local population. Furthermore, due to the short average employment period for each worker, 10.5 months, it would be unlikely that workers would move their households to the local area.

Additionally, Texas has a strong work force in the oil and gas industry and Corpus Christi is a major maritime entity. Therefore, it is anticipated that the majority of workers needed for installation and commissioning will come from within the state, region, and study area.

Overall, the proposed Project is anticipated to have a negligible impact to population during installation and commissioning phases.

##### 9.4.1.2 Labor Force and Employment

Because the oil and gas and maritime industries are prevalent in the area, and due to the recent downturn in the energy industry, it is anticipated that a large portion of the workers needed for construction and commissioning would come from within the study area, and the majority (approximately 80%) would be regional Texas hires.

With the Project aiming to hire the Project workforce from the local area it is likely that some of the hires will be from the five counties which make up the study area. The introduction of new work opportunities will be beneficial for the local area, especially for Kleberg County which has an unemployment rate which is higher than both the state and national average.

Construction phase Project work opportunities would be relatively high-paying, averaging a wage of approximately \$3,500 per month (\$42,000 per annual (p/a)) for a salaried employee, when compared to the median household income within the study area (\$41,469 to \$52,659 p/a for 2016 (Census 2018)). However, the duration of the construction phase of the Project will be short-term, lasting approximately 16 months, with the average worker's duration of employment lasting 10.5 months.

Overall the construction phase of the Project is anticipated to result in a beneficial impact of minor to negligible significance on labor force and employment within the study area.

##### 9.4.1.3 Housing

An influx of migrant workforce into an area can have an adverse impact to the availability of local housing, and in turn, can result in an increase in the cost of rental accommodation and property purchase prices. Increases in rental accommodation cost can result in a positive impact for landlords, and increases in property prices can result in positive impact to property owners. However, there are also adverse impacts associated with a higher demand for housing. Increased rental accommodation costs and property purchase prices can also lead to an increase in the homeless population and crime rates.



However, as discussed above, the Project construction phase workforce is not anticipated to significantly impact population numbers within the study area due to the small numbers of required workers during the construction phase, short duration of the construction phase, and aim of employing, and availability of, a local workforce. As a result of this, the additional demand on local housing is likely to be limited, and the adverse housing impacts listed above are unlikely to result to any detectable significance.

For the small number of workers who are recruited from locations outside of commuting distance to the Project, and/or who chose to move closer to the Project, housing is likely to be found within population centers found in the study area such as Kingsville (30 mi from the onshore elements of the Project) and Corpus Christi (10 mi from the onshore elements of the Project). Available housing in Corpus Christi would also accommodate any temporary employees needed for the offshore component. Construction and support vessels would likely be based out of the POCC.

Overall, impacts to housing availability as a result of the construction phase of the Project are anticipated to be temporary and negligible.

#### 9.4.1.4 Public Services

The Project could potentially impact local public services if the Project's workforce and/or families exceeded providers' capacity.

##### *Medical Services*

Potential injuries and medical emergencies during the construction phase of the Project could include scratches, scrapes, bruises, burns, chemical burns, broken bones, concussions, heatstroke, crushed or severed limbs, wounds or gashes requiring stitches, inhalation of fumes, heart attack, and stroke. Treatment in a hospital or emergency room would be required for some of these conditions, while treatment in an urgent care facility would be adequate for others.

Of the 14 hospitals within the study area, nine have adult accepting emergency room facilities. The closest hospital with an accident and emergency facility to the onshore elements of the Project is the CHRISTUS Spohn Hospital in Corpus Christi. The closest hospital with an accident and emergency facility to the POCC, where construction and support vessels would likely be based, is the CHRISTUS Spohn Hospital Corpus Christi Shoreline.

In addition to the 15 hospitals, there are also multiple urgent care facilities within the study area. Urgent care facilities would be equipped to treat workers sustaining minor injuries on-the-job and off-the-job.

Given the small number of workers expected to relocate to the study area during the construction phase of the Project, the Project's impact to community medical services during the construction phase is anticipated to be **negligible**.

##### *Public Safety Services*

There are 44 fire stations in the study area. In case of an emergency during construction of the Project, the public services closest to the incident would be most likely to respond. Due to the history of the oil and gas industry in the area, these facilities include trained staff for such emergencies. However, a scenario in which local fire departments were called upon to address an incident associated with Project construction would be unlikely.

Similarly, there are numerous police and other emergency responders in the study area, including the USCG Sector Corpus Christi, that would be available to respond to emergencies during construction of the Project. It is anticipated that compliance with safety Best Management Practices (BMPs) and standard practices would avoid emergency incidents, but should they occur, available responders in the study area have adequate capacity and skills to respond appropriately.



Overall, the impact that the construction phase of the Project is anticipated to have on the emergency response capacity is considered to be **negligible**.

#### *Education Facilities*

During construction, the average term of employment during the Project construction phase is anticipated to be 10.5 months, as such, few-to-no additional school-age children are expected to move to the study area with parents employed during this phase of the Project.

Overall, impacts on the public school systems within the study area during the construction phase of the Project are anticipated to be **negligible**.

#### 9.4.1.5 Taxes and Revenues

As part of the financial requirements for the issuance of a DWPL, the Applicant has prepared and submitted a confidential cash-flow model which analyzes the economic impact as a result of the construction and operation of the proposed Project. Based on the results of the cash flow modeling, the construction and operation of the proposed Project would result in a positive impacts to and support the continued growth of both U.S. and local economies.

#### 9.4.1.6 Oil and Gas Industry

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

#### 9.4.1.7 Commercial Fishing

Commercial fishermen who share the GOM with other industrial users could be impacted by construction activities. The study area has a civilian labor force of approximately 173,425, and the estimated number of commercial fishing establishments is approximately 340. Commercial fishermen are estimated to be a small percentage (less than [ $<$ ] 1%) of the civilian labor force in the study area. However, for the families who depend upon fishing for income, commercial fishing is not only extremely significant financially, it is also often holds a cultural and historic significance. Within the study area most commercial fishermen are self-employed fishermen, partnerships, or business entities with no employees (only owners/partners), a trait which is often associated with family businesses and “inter-generational fishing”, the trend of passing on the tradition of commercial fishing from one generation to another. For those families who have depended on the fishing industry for generations, any impact to commercial fishing as a result of the Project could be seen as significant.

During the 16-month construction period of the Single Point Mooring (SPM) System, commercial fishing will be prohibited in the temporary safety zone. This will primarily affect commercial harvesters of shrimp but could also affect commercial fishermen targeting open water pelagic finfish like mackerels and dolphin. Fishermen who typically would fish in the area of the temporary safety zone could choose to fish in a new or more distant area, allowing them to maintain a similar harvest level. Although the removal of these fishing areas could negatively affect commercial fishermen through increased costs of recovering the same harvest levels and increased travel distances or expended effort to achieve similar harvest levels, there is no unique habitat located at the site of the SPM buoy system that would attract commercial fishermen. Given the sufficient fishing habitat available in the adjacent, unrestricted areas and because harvest levels are typically set below estimated abundances, **no impact** to actual harvest levels and commercial fishing in the vicinity of Project are anticipated.

The Project’s potential impact on commercial fishing activities is further discussed in Section 11 “Coastal Zone Use, Recreation, and Aesthetics” and Section 6 “Commercial and Recreational Fisheries”.

#### 9.4.1.8 Recreation and Tourism

Impacts to recreation and tourism are discussed in Section 11 “Costal Zone Uses, Recreation, and Aesthetics”. Within Section 11 it is established that some level of disruption to recreation and tourism can be anticipated during the construction phase of the Project, however impacts are anticipated to be of minor to negligible significance and temporary. From an economic point of view, the timing of the construction phase of the Project will be important. In addition to other mitigating measures (such as site selection, the use of horizontal directional drilling [HDD]), BMPs, etc., as discussed in Section 11), the avoidance of construction during key public events and peak recreational times (such as public holidays) would help reduce any adverse impacts to the local recreation and tourism economy.

While recreation and tourism in the immediate vicinity of the Project is likely to experience adverse impacts during the Project construction phase, it is not anticipated that significant adverse impacts will be experienced throughout the recreation and tourism economy of the study area.

With all planned mitigation measures in place, the recreation and tourism economy of the study area is anticipated to experience a temporary **minor** adverse impact during the Project construction phase.

#### 9.4.1.9 Maritime Industries

Impacts to maritime industries during construction will be temporary and minor. The Project is not being constructed in any portion of a major navigational fairway. Routine maritime activity is expected to continue undisturbed during all construction activity. The proposed Project traverses the GIWW directly to the west of Padre Island in the northern Laguna Madre. To minimize potential impacts to the GIWW, the applicant will install the coastal crossing of the inshore pipelines using horizontal directional drilling (HDD), as described within Appendix A. Establishment of a temporary safety zone during installation of the Project is not likely to significantly affect commercial shipping or activities at the Port of Corpus Christi. Typically, commercial vessels use the established fairway located 2.46 nautical miles to the east of the site. Any vessels that would otherwise transit through the Project vicinity would be forced to navigate around the safety zones, increasing the time that it would take them to move through the area and reach their destination. Any vessels that would have utilized the areas that will be off-limits due to safety zones, could use established fairways or move around that area. It is unlikely that large commercial vessels would be transiting outside of established fairways. However, those that do would be affected only for the short-term duration of the construction period. With mitigation, such as stakeholder engagement and aids to navigation system, in place, construction is expected to have negligible effect to inshore industries.

### 9.4.2 Routine Operations

#### 9.4.2.1 Population

During Project operation the Applicant anticipates employing a workforce of 41 employees, with varying day staff or shift workers. Should the Project employ all or many of the required installation and commissioning workers from outside of the state, region, and study area, it is possible that the study area could see a temporary impact to population. However, the number of workers employed for the operational phase of the Project is not anticipated to be significant and, as with the construction phase of the Project, during operation the Applicant will aim to employ workers from within the state, region, and study area. Thus, the change in population during operation is expected to be minor.

Overall, the proposed Project is anticipated to have a negligible impact to population during Project operation.

#### 9.4.2.2 Labor Force and Employment

Because the oil and gas and maritime industries are prevalent in the area, and due to the recent downturn in the energy industry, it is anticipated that a portion of the workers needed for operation of the Project would come from within the study area, and the majority from within the state of Texas.

With the Project aiming to hire the Project workforce from the local area it is likely that some of the hires will be from the five counties which make up the study area. The introduction of new work opportunities

will be beneficial for the local area, especially for Kleberg County which has an unemployment rate which is higher than both the state and national average.

Project work opportunities would be relatively high-paying, averaging a wage of approximately \$91,000 per year for a salaried employee, when compared to the median household income within the study area (\$24,000 to \$52,659 p/a for 2016 [Census 2018], see Table 9-15).

Overall the operational phase of the Project is anticipated to result in a beneficial impact on labor force and employment within the study area.

#### 9.4.2.3 Housing

As discussed previously, an influx of migrant workforce into an area can have an adverse impact to the availability of local housing, and in turn, can result in an increase in the homeless population and crime rates. However, the Project will aim to employ a local workforce where possible, and in addition, the number of workers employed for the operational phase of the Project is not anticipated to be significant enough to have an significant adverse impact on local housing availability.

Overall, impacts to housing availability as a result of Project operation are anticipated to be temporary and **negligible**.

#### 9.4.2.4 Public Services

During the operational phase of the Project, the Project's need for, and burden upon, local public services such as medical, fire, police, and educational facilities, is anticipated to be less than that during the construction phase. This is anticipated as a result of the Project's operational phase requiring a smaller workforce, less onshore activities, and undertaking routine activities rather than higher risk construction activities.

As a result of this, impacts to public services during the operational phase of the Project are anticipated to be negligible.

The Project could potentially impact local public services if the Project's workforce and/or families exceeded providers' capacity.

#### 9.4.2.5 Taxes and Revenues

As part of the financial requirements for the issuance of a DWPL, the Applicant has prepared and submitted a confidential cash-flow model which analyzes the economic impact as a result of the construction and operation of the proposed Project. Based on the results of the cash flow modeling, the construction and operation of the proposed Project would result in a positive impacts to and support the continued growth of both U.S. and local economies.

#### 9.4.2.6 Oil and Gas Industry

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

The effects of operation of the Project on offshore oil and gas exploration or operation of platforms and wells would be **negligible**.

Based on a review of crude oil production in the U.S. discussed in Section 1: Project Description and Purpose and Need, the end of the Crude Oil Export Ban has allowed U.S. producers to market internationally for the export of crude oil. Advances in technologies has resulted in a surge of crude oil production within the U.S. Production of crude oil in the U.S. has surpassed processing and storage capacities of existing U.S. refineries, and forecast indicate an approximate 4,000,000 bpd increase of U.S.

crude oil production of which 75% will be from the Permian and Eagle Ford Shales located in southwest Texas. As such, there is a growing need for the efficient export of crude oil from the U.S. to support current and forecasted crude oil production.

No negative impact is anticipated to offshore oil and gas activities as a result of the Project operation. Overall, the proposed Project is anticipated to have a beneficial effect on the global and domestic crude oil market by fulfilling the need for a safe, efficient, and cost-effective outlet for abundant supplies of domestic crude oil from existing and future oil fields located in North America.

#### 9.4.2.7 Commercial Fishing

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

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

#### 9.4.2.8 Recreation and Tourism

Once operational, the Project is not anticipated to disrupt ongoing recreational activities in the study area. Although the 1,000 m radius safety zone around the SPM buoy system will be unavailable for recreational fishing, as noted above, this area is not unique or specifically productive compared to the abundant similar resource in the study area. As discussed in Section 11 “Costal Zone Uses, Recreation, and Aesthetics”, overall impact to recreational activities in the study area is anticipated to be negligible, thus related economic impacts would also be negligible.

Impacts to the recreational and tourism economy are anticipated to be negligible as a result of the Project during the operational phase.

#### 9.4.2.9 Maritime Industries

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

Overall, operation of the Project at full buildout is anticipated to result in a **negligible** impact on marine shipping and commercial port activity. No impacts to the maritime industry is anticipated as a result of the Project during the operational phase.

#### 9.4.3 Upsets and Accidents

Upsets and accidents in the area may cause temporary negligible impacts on the socioeconomic environment. Onshore storage facilities are located in fairly isolated, undeveloped areas, inshore pipeline crossings do not occur in immediate proximity to populated areas, and the SPM location is approximately

12 nautical mi offshore, widely separated from surrounding offshore infrastructure. The potential for upsets and accidents as well as measures intended to maintain safety and security are addressed in Section 14 “Safety and Security”.

#### 9.4.4 Decommissioning

At the end of its useful life, all components associated with the Project would be disassembled and brought to shore. At this time, it is anticipated that the decommissioning process will take approximately 3 months, employ approximately 85 workers with an average duration of 90 days of employment, and be comprised primarily of individuals from within the region (approximately 80%). The work cycle is anticipated to be 28 days on, seven days off with an average annual salary of approximately \$42,000, which is within the average range for the five counties. Total payroll for the decommissioning process is expected to be just under \$1 million.

Impacts to socioeconomics within the study area will be dependent upon the decommissioning plan and any changes in the socioeconomic environment at that time, however, with a full removal of all Project components associated with the Project, impacts to socioeconomics are likely to be similar to those describe for the Project construction – this will be especially true if the decommissioning plan will include the removal of all pipeline and/or if the sensitivity of the socioeconomic study area increases.

### 9.5 Environmental Justice

Environmental justice (EJ) refers to a federal policy established by EO 12898 (59 Federal Register 7629) under which each federal agency identifies and addresses, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority or low-income populations. The USEPA and the CEQ emphasize the importance of incorporating EJ reviews in analyses triggered by NEPA and other federal agency reviews. The CEQ developed the guidance document, “Environmental Justice: Guidance Under the National Environmental Policy Act” (1997), followed by the USEPA’s “Final Guidance for Incorporating Environmental Justice Concerns in USEPA’s NEPA Compliance Analyses” (1998), to help federal agencies identify EJ communities and address potential impacts. According to these guidance documents, the basic components of an EJ assessment include:

- A demographic assessment of the affected community to identify minority and/or low income populations that may be present;
- An assessment of all potential impacts of the Project to determine whether any would result in a significant adverse impact on the affected environment; and
- An integrated assessment to determine whether any high and adverse impacts would disproportionately affect minority and low-income groups present in the study area.

According to the guidance documents for EJ analyses, a low-income population should be identified in an affected area when the percentage with incomes below the poverty level either exceeds 50 percent or is meaningfully greater than in the general population of the larger surrounding area (CEQ 1997; USEPA 1998). In addition, a minority population should be identified when the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population of the larger surrounding area (CEQ 1997; USEPA 1998). For the purposes of EJ analyses, minority groups may be African American, American Indian, Asian American, Pacific Islander, some other race, two or more races, or ethnically Hispanic. Table 9-14 provides the racial and ethnic percentages in the study area, and Table 9-15 provides percentage of persons with incomes below the poverty line.

**Table 9-14: Population Distribution by Race**

Race	State of Texas	Kenedy County	Kleberg County	Nueces County	San Patricio County	Aransas County
White Alone	70.4%	87.5%	79.9%	81.5%	85.9%	87.4%
Black or African American Alone	11.8%	1.2%	3.7%	4.0%	1.7%	1.3%
American Indian and Alaska Native Alone	0.7%	1.4%	0.6%	0.6%	0.6%	0.7%
Asian Alone	3.8%	0.2%	2.3%	1.7%	0.8%	2.0%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%
Some Other Race	10.5%	6.7%	10.9%	9.6%	8.5%	6.3%
Two or More Races	2.7%	2.9%	2.4%	2.4%	2.4%	2.3%
Hispanic or Latino (of any race)	37.6%	76.7%	70.2%	60.6%	54.4%	24.6%
White Alone, not Hispanic or Latino	62.4%	23.3%	29.8%	39.4%	45.6%	75.4%
Data from 2010 Census Source: Census 2018h						

**Table 9-15: Income and Poverty**

	State of Texas	Kenedy County	Kleberg County	Nueces County	San Patricio County	Aransas County
Median Household Income (in 2016 dollars) 2012-2016	\$54,727	\$24,000	\$41,469	\$51,882	\$52,659	\$44,851
Per Capita Income in Past Twelve Months (in 2016 dollars) 2012-2016	\$27,828	\$13,822	\$19,700	\$25,826	\$24,008	\$29,426
Persons in Poverty, Percent	13.0%	16.1%	15.3%	12.8%	11.8%	11.5%
Source: Census 2018h						

In compliance with EO 12898 (referenced in 9.2) a review of Census data covering the study area was conducted with the aim of identifying any potential EJ areas. In reviewing population, income, and ethnic distribution data for the study area it could be concluded that some communities could be considered EJ communities, while others are not based on their demographics.

The majority population in the study area are Hispanic or Latino. While there are people of other races that are non-white, they are small in numbers. The median household income is above the poverty threshold for all five counties in the study area (Table 9-15).

Four of the five counties in the study area have Hispanic and/or Latino populations greater than (>) 50% of the total population which is an identifier of an EJ community. However, as an indicator alone, the high Latino and/or Hispanic population of the study area is not exclusive to the five counties of the study area, and statewide Hispanic and/or Latino population is nearly 40%. In 2015 the Texas State Demographer reported that by 2020 (the next US Census) the Hispanic and/or Latino populations will be greater than white non-Hispanic and/or Latino populations, and by 2042 the majority of the US population will be Hispanic and/or Latino (*Hispanics*, 2015). So, while the current snapshot of the counties appears as though these are EJ communities, it is in relative conformance with the State's population distribution.



A large portion of the Project is to be located offshore, and as such, direct impacts to any populated area, including EJ communities, will be limited. Impacts resulting from the onshore elements of the Project are not anticipated to disproportionately impact EJ communities, as, within the direct vicinity of the onshore elements of the Project, 1,000 ft. of the Project, there are no minority populations. In addition, socioeconomic impacts which have a further reach and hold the greatest potential to impact EJ communities, such as impacts to the local economy, are anticipated to be either negligible or of beneficial significance.

Overall, the Project is anticipated to have **no impact** on EJ communities during its construction, operational, or decommissioning phase.

## 9.6 Cumulative Impacts

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

Of the projects identified in the cumulative impact analysis, those with the greatest potential to contribute to cumulative impacts on socioeconomic factors such as population, housing, employment, and tourism are the Corpus Christi LNG Terminal, offshore oil and gas exploration and production, waterway improvement projects, and the commercial and residential development projects.

Nueces County will likely see a temporary increase in population and demand for housing associated with non-local workers relocating to the area during the construction of the Project as well as any concurrently constructed projects. Local communities will benefit from increased spending by construction crews at restaurants, hotels, and retailers.

Construction-related impacts from the proposed Project on employment and tax revenues will generally be temporary and minor; the other projects identified above will likely have economic impacts during construction, most notably construction of the Corpus Christi LNG Terminal which is currently underway. The other projects identified above are typical of ongoing development in the Project area and will contribute to economic impacts during construction but to a smaller degree.

As discussed previously, the proposed Project will have negligible socioeconomic impacts during operation and therefore is likely to have a negligible contribution to cumulative impacts on population, employment, and local services. However, based on the results of the cash flow modeling, the construction and operation of the proposed Project would result in a positive impacts to and support the continued growth of both U.S. and local economies.

## 9.7 Mitigation Measures

The selection of the Project facility-type and the proposed site location was made to avoid and minimize potential impacts on socioeconomics. Mitigation measures specific to socioeconomics include:

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

*Stakeholder Consultation:* Ongoing communication with local stakeholders, including local businesses and those involved in fishing and the tourism industry, will be important to help identify and resolve any potential adverse impacts to socioeconomics.

## 9.8 Summary of Potential Impacts

**Table 9-16: Summary of Potential Impacts to Socioeconomics**

Project Phase	Impact	Duration	Significance	Mitigation
Construction	Population: Migration of workers to the local area.	Temporary	Negligible	Workforce Numbers: Insignificant numbers of workers working over short periods of time. Local Workforce: Employment of workers from the state, region, and study area
Construction	Labor Force and Employment: Introduction of limited short-term employment opportunities	Temporary	Beneficial: Minor/Negligible	N/A
Construction	Housing: Project construction workforce impacting local housing availability.	Temporary	Negligible	Workforce Numbers: Insignificant numbers of workers working over short periods of time. Local Workforce: Employment of workers from the state, region, and study area
Construction	Public Services – Medical Services: construction workforce impacting availability of medical services.	Temporary	Negligible	Workforce Numbers: Insignificant numbers of workers working over short periods of time. Local Workforce: Employment of workers from the state, region, and study area
Construction	Public Services – Public Safety Services: construction workforce impacting availability of public safety (firefighting) services.	Temporary	Negligible	Workforce Numbers: Insignificant numbers of workers working over short periods of time. Local Workforce: Employment of workers from the state, region, and study area
Construction	Public Services – Public Educational Facilities: construction workforce impacting public school services.	Temporary	Negligible	Workforce Numbers: Insignificant numbers of workers working over short periods of time. Local Workforce: Employment of workers from the state, region, and study area
Construction	Taxes and Revenues: Generation of taxes and revenues.	Temporary	Beneficial	N/A
Construction	Oil and Gas Industry: No Impacts Anticipated	Temporary	No Impact	N/A
Construction	Commercial Fishing: Displacement of commercial fishing within the temporary safety zone impacting the commercial fishing industry.	Temporary	No Impact	Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fisherman so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.



Project Phase	Impact	Duration	Significance	Mitigation
Construction	Recreation and Tourism: Adverse impacts to the local recreational and tourism industry	Temporary	Minor	Installation of the coastal crossing of the offshore pipelines using HDD. Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational fishermen so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Construction	Maritime Industries: possible disruption of vessel traffic	Temporary	Negligible	Advertisement of safety zones to transiting vessels
Operation	Population: Migration of workers to the local area.	Permanent	Negligible	Workforce Numbers: Insignificant numbers. Local Workforce: Employment of workers from the state, region, and study area
Operation	Labor Force and Employment: Introduction employment opportunities	Permanent	Beneficial	N/A
Operation	Housing: Project construction workforce impacting local housing availability.	Permanent	Negligible	Workforce Numbers: Insignificant numbers of workers. Local Workforce: Employment of workers from the state, region, and study area
Operation	Public Services – Medical Services: construction workforce impacting availability of medical services.	Permanent	Negligible	Workforce Numbers: Insignificant numbers of workers. Local Workforce: Employment of workers from the state, region, and study area
Operation	Public Services – Public Safety Services: construction workforce impacting availability of public safety (firefighting) services.	Permanent	Negligible	Workforce Numbers: Insignificant numbers of workers. Local Workforce: Employment of workers from the state, region, and study area
Operation	Public Services – Public Educational Facilities: construction workforce impacting public school services.	Permanent	Negligible	Workforce Numbers: Insignificant numbers of workers. Local Workforce: Employment of workers from the state, region, and study area
Operation	Taxes and Revenues: Generation of taxes and revenues.	Permanent	Beneficial	N/A
Operation	Oil and Gas Industry: No Impacts Anticipated	Permanent	No Impact	N/A

Project Phase	Impact	Duration	Significance	Mitigation
Operation	Commercial Fishing: Displacement of commercial fishing within the temporary safety zone impacting the commercial fishing industry.	Permanent	No Impact	Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for commercial fisherman so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Operation	Recreation and Tourism: Adverse impacts to the local recreational and tourism industry	Permanent	Negligible	Installation of the coastal crossing of the offshore pipelines using HDD. Stakeholder Consultation: The location of the temporary safety zone will be published in the USCG Local Notice to Mariners, serving as a forewarning for recreational fishermen so they can plan alternate routes and/or destinations to other accessible areas in the vicinity of the Project.
Operation	Maritime Industries: possible disruption of vessel traffic	Temporary	Negligible	Advertisement of safety zones to transiting vessels
Decommissioning	Impacts to local socioeconomics	Temporary	Minor to Negligible	BMPs; Stakeholder Engagement.
Cumulative	Impacts to local socioeconomics during Project Construction	Temporary	Negligible	Site selection; BMPs; and HDD; Stakeholder Engagement.
Cumulative	Impacts to local socioeconomics during Project Operation	Permanent	Negligible	Site selection and BMPs; Stakeholder Engagement.

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