

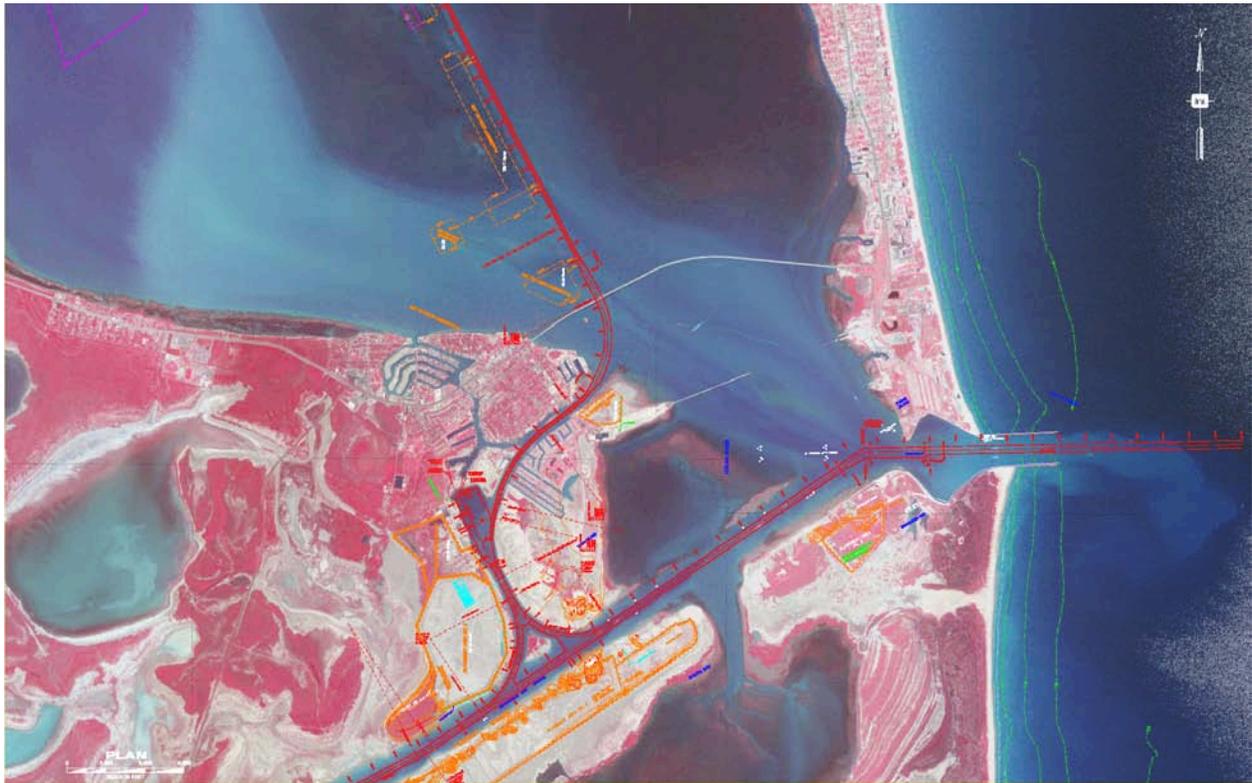


**US Army Corps  
of Engineers**®  
Galveston District

# **Gulf Intracoastal Waterway Vicinity of Port Isabel, Texas**

## **DRAFT ENVIRONMENTAL ASSESSMENT**

**Operations and Maintenance  
Discretionary Authority Decision**



**U.S. ARMY ENGINEER DISTRICT, GALVESTON  
GALVESTON, TEXAS**

**MAY 2010**

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**MAY 2010**

# TABLE OF CONTENTS

<b>1.0</b>	<b>PROPOSED PLAN.....</b>	<b>1</b>
1.1	PROJECT SUMMARY.....	1
1.2	PROJECT AREA.....	1
1.3	NEED FOR PROJECT.....	1
1.4	PROPOSED WORK.....	4
<b>2.0</b>	<b>ALTERNATIVES CONSIDERED .....</b>	<b>6</b>
2.1	NO ACTION ALTERNATIVE (FUTURE WITHOUT PROJECT).....	6
2.2	ALTERNATE CHANNEL ALIGNMENTS.....	7
2.2.1	ALTERNATE CHANNEL ALIGNMENT A.....	7
2.2.2	ALTERNATE CHANNEL ALIGNMENT B.....	8
2.2.3	ALTERNATE CHANNEL ALIGNMENT C.....	8
2.3	UNDERWATER BERM.....	8
2.4	BREAKWATER.....	8
2.5	REPLACEMENT OF LONG ISLAND SWING BRIDGE.....	8
2.6	CHANNEL WIDENING (PREFERRED ALTERNATIVE).....	10
2.7	INSTALLATION OF CURRENT/TIDE METER (PREFERRED ALTERNATIVE).....	10
<b>3.0</b>	<b>AFFECTED ENVIRONMENT .....</b>	<b>10</b>
3.1	PHYSICAL CHARACTERISTICS AND PROCESSES.....	10
3.2	BIOLOGICAL COMMUNITIES.....	11
3.3	WILDLIFE.....	13
3.4	FISHERIES AND ESSENTIAL FISH HABITAT.....	14
3.5	THREATENED AND ENDANGERED SPECIES.....	14
3.6	CULTURAL RESOURCES.....	17
3.7	AIR QUALITY AND NOISE.....	18
3.8	WATER AND SEDIMENT QUALITY.....	18
3.9	HAZARDOUS, TOXIC AND RADIOACTIVE WASTE.....	18
3.10	SOCIOECONOMICS.....	19
3.11	ENVIRONMENTAL JUSTICE.....	19
3.12	PRIME AND UNIQUE FARMLANDS.....	20
3.13	RECREATIONAL RESOURCES.....	20
3.14	ROADWAYS AND TRAFFIC.....	21

<b>4.0</b>	<b>ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION .....</b>	<b>21</b>
4.1	<i>IMPACTS ON PHYSICAL CHARACTERISTICS AND PROCESSES .....</i>	<i>21</i>
4.2	<i>IMPACTS ON BIOLOGICAL COMMUNITIES .....</i>	<i>22</i>
4.3	<i>IMPACTS ON WILDLIFE .....</i>	<i>24</i>
4.4	<i>IMPACTS ON FISHERIES AND ESSENTIAL FISH HABITAT .....</i>	<i>24</i>
4.5	<i>IMPACTS ON THREATENED AND ENDANGERED SPECIES .....</i>	<i>25</i>
4.6	<i>IMPACTS ON CULTURAL RESOURCES.....</i>	<i>25</i>
4.7	<i>IMPACTS ON AIR QUALITY AND NOISE .....</i>	<i>25</i>
4.8	<i>IMPACTS ON WATER AND SEDIMENT QUALITY.....</i>	<i>26</i>
4.9	<i>IMPACTS FROM HAZARDOUS, TOXIC AND RADIOACTIVE WASTE.....</i>	<i>26</i>
4.10	<i>IMPACTS ON SOCIOECONOMICS .....</i>	<i>26</i>
4.11	<i>IMPACTS RELATING TO ENVIRONMENTAL JUSTICE .....</i>	<i>26</i>
4.12	<i>IMPACTS ON PRIME AND UNIQUE FARMLANDS.....</i>	<i>27</i>
4.13	<i>IMPACTS ON RECREATIONAL RESOURCES.....</i>	<i>27</i>
4.14	<i>IMPACTS ON ROADWAYS AND TRAFFIC .....</i>	<i>27</i>
<b>5.0</b>	<b>MITIGATION .....</b>	<b>27</b>
<b>6.0</b>	<b>CUMULATIVE IMPACTS .....</b>	<b>27</b>
<b>7.0</b>	<b>RELATIONSHIP TO OTHER FEDERAL PROJECTS.....</b>	<b>28</b>
<b>8.0</b>	<b>COMPLIANCE WITH PLANNING AND ENVIRONMENTAL REQUIREMENTS.....</b>	<b>29</b>
8.1	<i>PLANNING REQUIREMENTS.....</i>	<i>29</i>
8.2	<i>ENVIRONMENTAL REQUIREMENTS.....</i>	<i>29</i>
<b>9.0</b>	<b>CONCLUSIONS.....</b>	<b>32</b>
<b>10.0</b>	<b>LITERATURE CITED .....</b>	<b>34</b>

## **LIST OF FIGURES**

Figure 1 – Proposed Project Location .....	2
Figure 2 – Proposed Project Area .....	3
Figure 3 – Proposed Work.....	5
Figure 4 – Location of Alternatives .....	9
Figure 5 – Seagrasses in the Immediate Project Area.....	12

## **LIST OF TABLES**

Table 1 – Alternatives and Screening Criteria Matrix .....	6
Table 2 – USFWS List of Threatened and Endangered Species for Cameron County .....	15
Table 3 – Endangered Marine Mammals and Fish in Texas.....	16
Table 4 – Marine Species of Concern in Texas .....	16
Table 5 – Potential State-Listed Rare Species for Cameron County.....	17
Table 6 – Demographic Information.....	20
Table 7 – Estimated Future Mean Sea-Level, NOAA Station # 8779770 .....	21

## **LIST OF APPENDICES**

Appendix A – Public Notice and Comments on the Draft Environmental Assessment	
Appendix B – Responses to Comments on Draft Environmental Assessment	
Appendix C – Section 404(b)(1) Analysis, Water & Sediment Quality Data, and Water Quality Certification	
Appendix D – Hazardous, Toxic, and Radioactive Waste Investigations	
Appendix E – Compliance with the Texas Coastal Management Plan	
Appendix F – Endangered Species Coordination, Biological Assessment, and State-Listed Rare Species	
Appendix G – Coordination with Other Agencies	

## **DRAFT ENVIRONMENTAL ASSESSMENT**

### **OPERATIONS AND MAINTENANCE DISCRETIONARY AUTHORITY DECISION GULF INTRACOASTAL WATERWAY, VICINITY OF PORT ISABEL, TEXAS**

#### **1.0 PROPOSED PLAN**

##### **1.1 PROJECT SUMMARY**

The U. S. Army Corps of Engineers (USACE), Galveston District (the District) is proposing to widen the bend in the Gulf Intracoastal Waterway (GIWW) in the vicinity of Port Isabel between the Queen Isabella Memorial Bridge (formerly known as the Queen Isabella Causeway) and the Long Island swing bridge. The project would improve navigation safety in this section of the GIWW by providing a wider area for barges to set up for passage through the narrow channel under the two bridges. The project authority is outlined in Engineer Regulation (ER) 1130-2-520 which provides that O&M funds may be used for increases in navigation dimensions at entrances, bends, sidings and turning places within a project to allow for free movement of boats in accordance with provisions of Section 5 of the River and Harbor Act of 14 March 1975 (33 USC 562). The non-federal sponsor for the proposed project is the Texas Department of Transportation (TXDOT).

##### **1.2 PROJECT AREA**

The proposed project is located in the south coastal zone of Texas near Port Isabel in Cameron County (see Figure 1). The project area is depicted in Figure 2. The project site is the reach of GIWW between the Queen Isabella Memorial Bridge (QIM Bridge) and the Long Island floating swing bridge. The GIWW in the project area passes from the Lower Laguna Madre, between the City of Port Isabel and Long Island, to the Brownsville Ship Channel. South Padre Island, which is connected to Port Isabel by the QIM Bridge via State Highway 100, is located to the east of the project site. South Padre Island separates the Gulf of Mexico from the Lower Laguna Madre. Mexiquita Flats, a submerged area of seagrass meadows, is situated east of Long Island and north of the Brownsville Ship Channel. Access to the Gulf of Mexico via the ship channel is through the Brazos Santiago Pass. To the south of the project site is South Bay.

##### **1.3 NEED FOR PROJECT**

The GIWW at Port Isabel is an important waterway for transporting petroleum products, especially fuel, to support the extensive agriculture based economy of the Rio Grande Valley (USACE, 2004). Barge traffic at Port Isabel is destined for Brownsville and consists primarily of fuel and petrochemicals, along with sand and gravel and other dry bulk commodities. The refinery complex in Corpus Christi supplies the bulk of this commerce. Waterborne commerce on the Corpus Christi to Brownsville segment of the GIWW, most of which passes through the Port Isabel area, has been fairly stable at around 2.2 million tons annually.

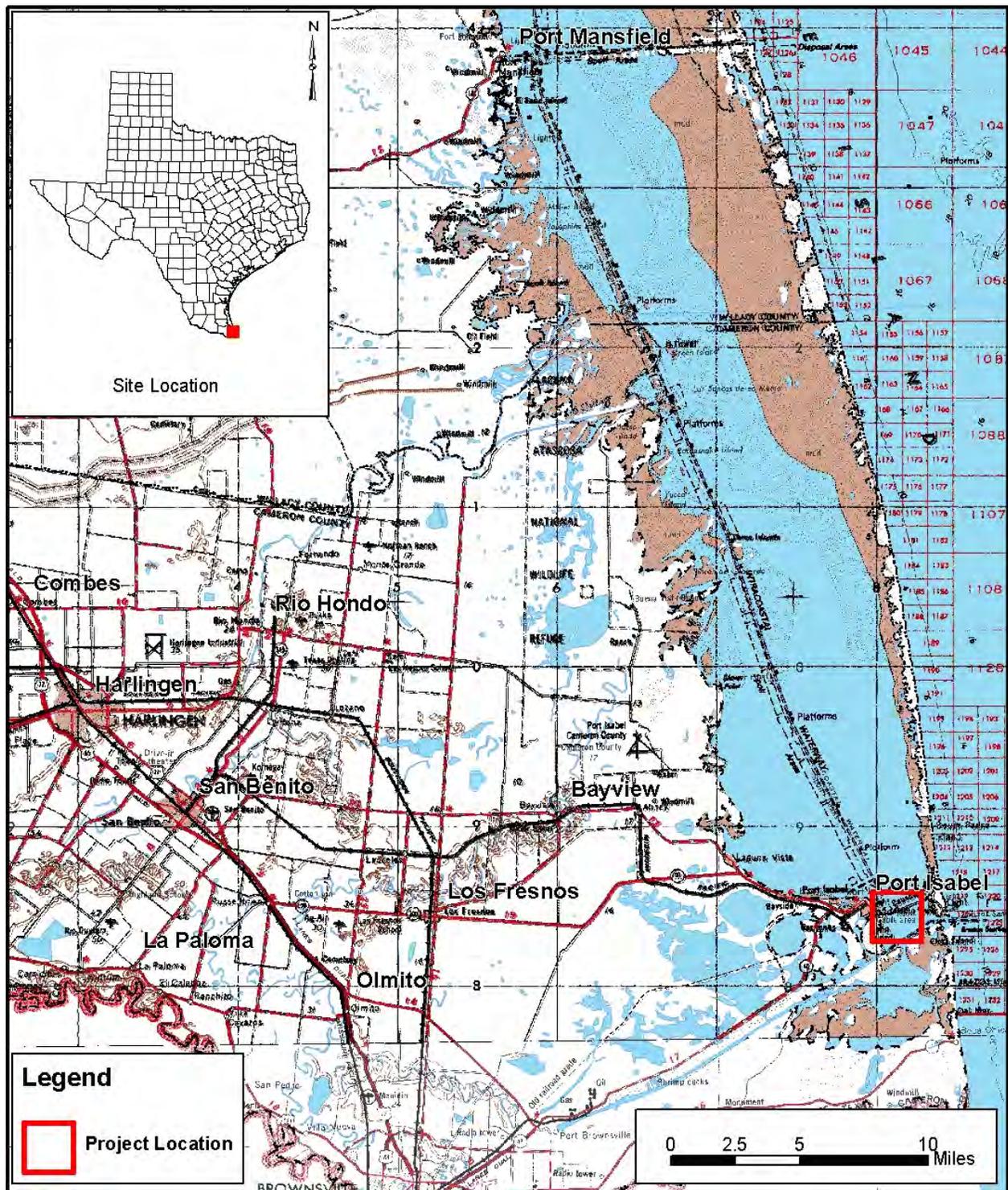


Figure 1 – Project Location



Figure 2 – Project Area

There is a significant bend in the GIWW channel between the QIM Bridge and the Long Island swing bridge. Maneuvering between the bridges and maintaining a proper alignment for safe passage under the bridges, particularly for northbound tows, can be difficult. The difficulty results from the relatively short distance from the exit from the swing bridge reach before encountering the QIM Bridge opening. Complicating matters are the narrow channel (275 feet), the relatively sharp bend in the channel (curve radius 3,328 feet), and the frequent strong southeast winds and rapid tidal currents experienced in the area. According to marine interests, it is particularly difficult for northbound barge tows to become aligned for safe passage under the QIM Bridge after passing through the Long Island bridge opening.

The issue of safe navigation of this reach of the GIWW arose in September 2001, when a northbound four-barge tow hit the QIM Bridge at night, collapsing portions of the span and resulting in the deaths of eight motorists. As a result of this catastrophic event, the United States Army Corps of Engineers (USACE) Galveston District began to investigate whether a modification to the existing channel alignment is necessary to improve navigation safety.

#### 1.4 PROPOSED WORK

The proposed work is depicted in Figure 3. The work consists of widening the GIWW channel along the bend between the QIM Bridge and the Long Island swing bridge and installing a current/tide meter(s) at the QIM Bridge. The outside bend would be widened by 125 feet, transitioning from the existing 275-foot width to a 400-foot width, with a side slope of 1:3 (vertical to horizontal). The channel's 12-foot project depth would be maintained. Approximately 40,000 cubic yards of material would be dredged from the bay bottom using a hydraulic pipeline dredge. Two feet of advanced maintenance dredging would be done during the widening, which, along with an overdraft allowance of 2 feet, would result in an initial channel depth of 14 to 16 feet after dredging. The current/tide meter would provide real-time water current and tide information to vessel operators transiting the bend reach of the GIWW.

The dredged material would be pumped via dredge pipeline into USACE Placement Area (PA) 240, which is located on the eastern end of Long Island, immediately to the south of the channel bend (see Figure 2). PA 240 is an existing semi-confined placement area. A levee surrounds most of the PA and a rock weir is located at the lower, east end of the PA. Dredged material would be pumped into the upper, western portions of the PA and would flow toward the lower, eastern end. Most of the material would settle out as it flows toward the weir but some would overflow the weir with the return water and settle in the shallow water immediately to the east of the PA.

The dredged material from the channel widening would utilize the remaining capacity of PA 240. Therefore, future maintenance dredged material from the bend reach of the GIWW would be pumped to PA 241, which is a confined, upland disposal area located west of the GIWW at its confluence with the Brownsville Ship Channel. The placement of dredged material associated with the maintenance of the GIWW into placement areas in the Laguna Madre, including PAs 240 and 241 was addressed in an Environmental Impact Statement prepared by the District in September 2003. Dredge pipelines would be submerged to the extent necessary to

minimize interference with navigation in the channel reach between Long Island and the mainland at Port Isabel. The current estimated shoaling rate for the existing channel is approximately 12,000 cubic yards of sediment per year. The additional width of the channel would result in an additional 1,800 cubic yards of maintenance material per year, or about 9,000 cubic yards per 5-year dredging cycle. The most recent maintenance dredging of this reach of the GIWW was completed in February 2009, during which about 75,000 cubic yards of material was dredged from the channel and placed into PA 240.



Figure 3 – Proposed Work

## 2.0 ALTERNATIVES CONSIDERED

A number of alternatives were evaluated based on the following criteria:

- The project must provide for increased navigation safety
- The project must be environmentally acceptable
- The project benefits must exceed costs
- The project must be acceptable to commercial waterway users

Table 1 contains a matrix that shows each alternative that was considered and the screening criteria that were met for each alternative. Six of the alternatives were eliminated from further study. The recommended plan includes the only alternatives that are cost effective and fulfill the criteria. Although each alternative is discussed in the following sections, only the “no action”, curve widening and current/tide meter alternatives were carried forward for environmental impact analysis in Section 4.0.

**Table 1 – Alternatives and Screening Criteria Matrix**

<div style="text-align: center;"> <b>Screening Criteria</b>  <b>Alternative</b> </div>	Increased navigation safety	Environmentally acceptable	Benefits expected to exceed costs	Acceptable to commercial users
No Action Alternative (Future Without Project)		✓	✓	
Alternate Channel Alignment A	✓			
Alternate Channel Alignment B	✓			
Alternate Channel Alignment C	✓			
Underwater Berm		✓		
Breakwater		✓		
Widening of Existing Curve	✓	✓	✓	✓
Current/Tide Meter	✓	✓	✓	✓
Swing Bridge Replacement	✓	✓		✓

### 2.1 NO ACTION ALTERNATIVE (FUTURE WITHOUT PROJECT)

The no action alternative would be to continue to maintain this section of the GIWW in its present configuration. Doing so would result in continued challenging conditions for tow operators negotiating the bend between the Long Island swing bridge and the QIM Bridge. The risk of barges going outside the channel while navigating the bend between the two bridges

would remain the same and the risk of allisions between tows and bridges and associated structures also would remain the same. If there is growth in the volume of barge traffic and it is assumed that the number of allisions would be proportional with the level of barge traffic, there would be an increased frequency of allisions. Conversely, under the same assumption, any decrease in barge traffic would result in a corresponding decrease in allision frequency.

The risk of a catastrophic allision with the QIM Bridge like the incident in September of 2001 has been reduced by the construction of a bridge pier protection system, which was completed by the State of Texas in 2004. This system has been tested at least once since its construction. In December of 2006, a four-barge tow similar to the one that struck the bridge in 2001 struck the bridge pier protection system near the same spot, which resulted in no damage to the bridge. TXDOT estimated the damage to the pier protection system to be about \$200,000 (Perez-Trevino, 2006). Although the risk of catastrophic allisions has been reduced by the bridge pier protection system, the risk of lesser damages such as in the 2006 incident would continue under the no action plan. The no action alternative was rejected because it would not meet the criteria of increasing navigation safety.

Under the no action alternative, there would not be any new work dredging and thus would not be any impacts to additional open water habitat. Maintenance dredge material would likely be placed in PA 240 until its capacity was reached, after which PA 241 would be used for all remaining maintenance material placement. During placement of materials in PA 240, there would be minimal impacts to adjacent seagrasses as a result of semi-confined placement.

## 2.2 ALTERNATE CHANNEL ALIGNMENTS

These alternatives are depicted in Figure 4. They would consist of three alternative channel alignments that would route barge traffic around Long Island rather than through the channel between the island and Port Isabel. They would connect with the Brownsville Ship Channel east of the existing confluence. Each of these alternatives would have a high cost associated with dredging, they would increase transit times, and they would not be economically justified. Although these alternatives would reduce the curvature of the bend in the channel and eliminate the necessity for tows to transit the Long Island swing bridge and the channel between Long Island and Port Isabel, tows would still be subject to tidal currents and wind in the open water area inside Brazos Santiago Pass. Therefore, none of these alternatives were acceptable to commercial waterway users. Each of the channel alignment alternatives is described in more detail in the following sections, along with additional rationale for not selecting them.

### 2.2.1 ALTERNATE CHANNEL ALIGNMENT A

This alternative would involve constructing an alternate 125-foot-wide by 12-foot-deep channel that would continue the perpendicular alignment of the channel under the QIM Bridge for about 0.4 miles after heading southbound under the bridge (see Figure 4). It would then curve eastward around the western land approach to the old causeway, passing through the western end of the old causeway, then curving southward toward the Brownsville Ship Channel, and finally curving westward to join the Brownsville Ship Channel. Each of the three curves in

this alignment would have a curve radius of about 2,865 feet. This alignment would require demolishing a section of the Old Causeway and the relocation of an existing 24-inch water pipeline and a phone cable. This alternative would impact a large area of seagrasses and would not be environmentally acceptable.

### 2.2.2 ALTERNATE CHANNEL ALIGNMENT B

This alternative is similar to Alignment C but would pass through the center of the old causeway (see Figure 4). This 125-foot-wide by 12-foot-deep channel would continue the perpendicular alignment of the channel under the QIM Bridge for about 0.4 miles after heading southbound under the bridge but would continue eastward through the center of the old causeway before making a long turn around Mexiquita Flats and back westward to join the Brownsville Ship Channel. Both of the curves in this alignment would have a curve radius of about 2,865 feet. This alignment would require demolition of the old causeway and relocation of an existing 24-inch waterline pipeline and a phone cable. The channel construction would impact a small area of seagrasses in the southeast portion of Mexiquita Flats.

### 2.2.3 ALTERNATE CHANNEL ALIGNMENT C

This alternative is similar to Alignment B but would pass around the eastern end of the old causeway (see Figure 4). This 125-foot-wide by 12-foot-deep channel would continue the perpendicular alignment of the channel under the QIM Bridge for about 0.3 miles after heading southbound under the bridge and would continue eastward around the end of the old causeway before making a long turn around Mexiquita Flats and back westward to join the Brownsville Ship Channel. Both of the curves in this alignment would have a curve radius of about 2,865 feet. Although this alignment would avoid impacts to seagrasses, it is not economically justified.

## 2.3 UNDERWATER BERM

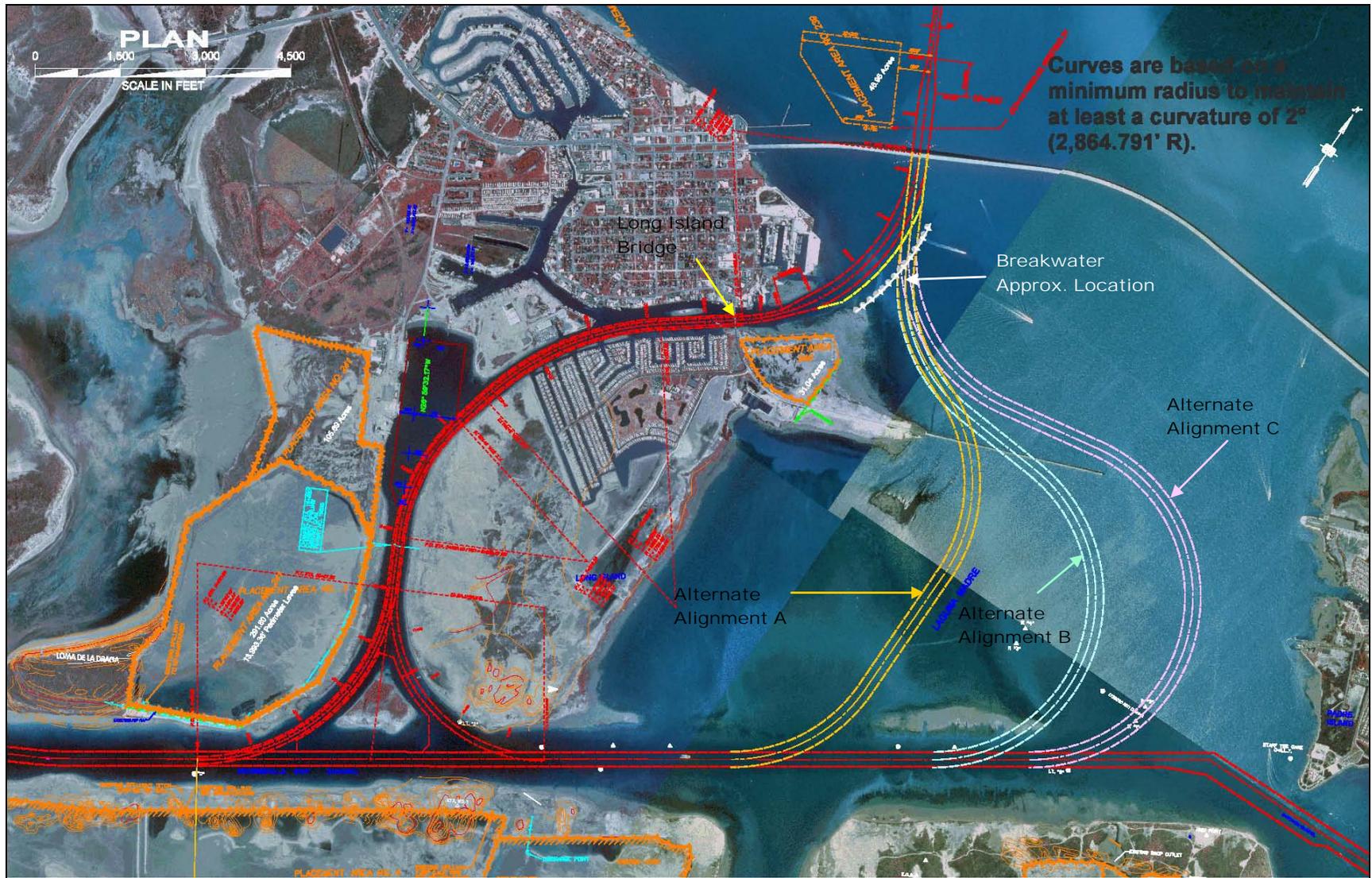
This alternative would involve the construction of an underwater berm along the channel bend. The berm would be placed in a manner to stop barges before they hit the QIM Bridge fender system. This alternative was eliminated from further consideration early in the screening process due to high costs and limited contribution to improving navigation safety.

## 2.4 BREAKWATER

Under this alternative, a stone breakwater would be constructed on the outside of the channel bend paralleling the curve of the centerline of the existing channel. Similar to the previous alternative, the breakwater would block incoming tidal currents from the southwest. This alternative also was eliminated from further consideration because of high costs and limited contribution to improving navigation safety. In addition, this hard structure would present safety concerns.

## 2.5 REPLACEMENT OF LONG ISLAND SWING BRIDGE

The Long Island swing bridge would be replaced by a permanent, fixed-span bridge under this alternative. However, the high cost associated with implementing this alternative would not



**Figure 4 – Location of Alternatives**

result in a benefit-to-cost ratio (BCR) of greater than 1.0. This alternative was eliminated from further consideration.

## 2.6 CHANNEL WIDENING (PREFERRED ALTERNATIVE)

This alternative, which is part of the preferred plan, would consist of widening the outside bend in the channel between the QIM Bridge and the Long Island swing bridge. This alternative is described in detail in Section 1.4 and the anticipated environmental impacts are discussed in Section 4.0.

## 2.7 INSTALLATION OF CURRENT/TIDE METER (PREFERRED ALTERNATIVE)

This alternative also would be implemented as part of the recommended plan. A current/tide meter would be installed on the QIM Bridge and would provide real-time water current and tide information to vessel operators transiting the bend reach of the GIWW.

# 3.0 AFFECTED ENVIRONMENT

## 3.1 PHYSICAL CHARACTERISTICS AND PROCESSES

The study area is located in a unique environment. It is at the southern end of one of only five hypersaline lagoons in the world, the Laguna Madre (Tunnell, 2002a). Salinity in the Lower Laguna Madre ranges from 31 to 37 parts per thousand (ppt), with an average annual salinity of 33 ppt (USACE, 2004). This water body is shallow, averaging approximately 4.6 feet deep, and, including the South Bay and La Bahia Grande complex, contains approximately 180,000 acres of aquatic habitat. Although no major rivers contribute fresh water to the system, some freshwater inflow is provided by the Arroyo Colorado. The main outlet into the Gulf of Mexico for the southern reach of the Lower Laguna Madre is Brazos Santiago Pass.

Annual precipitation in the Brownsville area averages about 26.6 inches. Much of the land is deltaic, having been formed by sediments from the Rio Grande. Sediments in the project area are predominately mud, silt, and quartz-derived sand and pebbles. Many dredged material placement areas are located along the GIWW. They were established during the construction of the GIWW and some are used for the placement of material from maintenance dredging.

In the Laguna Madre as a whole, water level fluctuations are influenced more by wind driven tides than astronomical tides, due to the large area of the water body and the small number of inlets connecting the Laguna Madre to the oceanic waters of the Gulf. The astronomical tidal cycle pattern in the project area is predominantly diurnal, meaning there is typically one high tide and one low tide each day. Since the project area is located just inside Brazos Santiago Pass, tidal currents are stronger here than in the rest of the Laguna Madre. During storms, when tide levels in the Gulf are higher than normal, tidal current velocities can be particularly high in the project area.

There is a consensus among ocean scientists that mean sea levels are rising due to various factors, including climate change. Any rise in mean sea levels will result in a corresponding rise

in tide levels. Water level records collected at eight locations along the Texas coast, including Port Isabel, for periods of 43 years or more show rising mean sea level trends from 0.63 feet (Port Mansfield) to 2.24 feet (Galveston Pleasure Pier) per hundred years (NOAA, 2009). Engineer circular EC 1165-2-211 provides guidance for incorporating the direct and indirect physical effects of projected future sea-level change in planning, designing, constructing and maintaining of USACE projects. Accordingly, planning studies and engineering designs developed for this study have considered a range (low, medium, and high) of possible future rates of sea-level change. The low rate of sea-level change is the historically recorded change in mean sea level for the project area as recorded by NOAA's National Ocean Service tide data station (#8779770) at Port Isabel, Texas. The historical mean sea level trend for the project area from 1944 to 2006 is 3.64 mm/yr +/- 0.44 mm/yr (1.19 feet per hundred years).

### 3.2 BIOLOGICAL COMMUNITIES

#### Terrestrial Habitat

The sparse vegetation in the placement areas consists mainly of opportunistic species that thrive on disturbed soils. These assemblages are not considered significant contributors as food or detritus sources. The placement areas are not considered high quality wildlife habitat due to disturbance and lack of established native vegetation.

#### Seagrasses

Seagrasses provide nursery areas, refuge and rich foraging areas for a number of estuarine fish and invertebrates, including commercially and recreationally important species, and are important in nutrient cycling (Withers, 2002a). Seagrass communities are among the most biologically productive submerged habitats. In the Lower Laguna Madre, seagrasses cover approximately 118,000 acres of bottom, or slightly more than 65 percent of the total bottom (USACE, 2004).

The project site is located at the southern end of the Lower Laguna Madre. Mexiquita Flats is a seagrass meadow in the project vicinity. It is a roughly triangular area adjacent and to the east of Long Island (see Figure 2). Most of Mexiquita Flats is turtlegrass meadow (*Thalassia testudinum*), although a band of shoalgrass (*Halodule beaudettei*) occurs along the northeastern edge. The Brownsville Ship Channel is to the south, and open water is to the northeast. Seagrasses grow in patchy strips along the banks of navigation channels where water depths and clarity are sufficient to allow light penetration, including along portions of the Brownsville Ship Channel and the GIWW channel south of the proposed channel widening area. Seagrasses have also become established in patches on the sediment to the northeast of the semi-confined Placement Area 240 and south of the proposed channel widening area (Figure 5).



**Figure 5 - Seagrasses in the Immediate Project Area**

### Wetlands

Unlike bays in the more northern Gulf coastal areas, where smooth cordgrass (*Spartina alterniflora*) salt marshes are common along natural shorelines, smooth cordgrass marshes are limited on the Laguna Madre due to hypersalinity and are only sparsely distributed in the northern and southern extremes of the Laguna (Tunnell, 2002b). The project area does not include any significant wetland areas.

### Tidal Flats

The Lower Laguna Madre contains intertidal areas consisting of un-vegetated or sparsely vegetated mudflats, sandbars, and salt flats (USACE, 2004). These serve as important feeding areas for shorebirds, fishes, and invertebrates. Some of the tidal flats with no freshwater inflow

are devoid of marsh vegetation and are covered with mats of algae, developing unique biological communities. Primary productivity of algal mats may be almost as high as that of seagrass meadows and about 20 to 40 percent of cordgrass (*Spartina* spp.) marshes (Withers, 2002b). The tidal flats of the Laguna Madre are unique because irregular flooding and prolonged exposure are a result of wind and storm tides rather than astronomical tides.

### Mangroves

Black mangrove (*Avicennia germinans*) is abundant on the margin of the Laguna Madre near the QIM Bridge and is the only conspicuous woody plant in the area aside from trees and shrubs planted by residents (Tunnell, 2002b). The eastern shoreline of Long Island has a fringe of black mangrove. Scattered patches of black mangrove exist on the eastern edge of PA 240.

### Open Water

Open water areas with un-vegetated sediments are found throughout the Lower Laguna Madre. These areas support diverse and abundant benthic invertebrate communities and provide food for fishery populations. Several hard bottom habitats are present in the system. Living reefs of the Eastern oyster (*Crassostrea virginica*) are rare in the Laguna Madre but are found in South Bay at the southern extent of the Laguna Madre. These oysters have become more tolerant of higher salinities than other oyster populations. There is little commercial oystering in the Laguna Madre.

## 3.3 WILDLIFE

The Laguna Madre area provides feeding and nesting habitat for numerous species of waterfowl and shore birds. The Texas coast is a terminus or stopover for many migratory waterfowl and other birds traversing the Mississippi or Central Flyways. As a result, migratory game and non-game birds are found in large numbers along the Texas Coast during the winter months. Many of these birds stay through winter or rest during migration in the Laguna Madre area. Primary species of migratory waterfowl in the area include Canada goose (*Branta canadensis*), white-fronted goose (*Anser albifrons*), snow goose (*Chen caerulescens*), pintail (*Anas acuta*), gadwall (*A. strepera*), blue and green-winged teal (*A. discors*, *A. carolinensis*), mallard (*A. platyrhynchos*), mottled ducks (*A. fulvigula*), shoveler (*A. clypeata*), lesser scaup (*Aythya affinis*), redhead (*A. americana*), and American wigeon (*Mareca americana*). The bays and marshes contain shore and wading birds including pelicans (*Pelecanus* spp.), black skimmer (*Rynchops niger*), white-faced ibis (*Plegadis chihi*), roseate spoonbill (*Ajaia ajaja*), plovers (*Charadrius* spp.), gulls and terns (*Laridae* family), sandpipers (*Scolopacidae* family), and herons and egrets (*Ardeidae* family) (USACE, 1977).

Marshes and land around the Laguna Madre, with its associated vegetation, provide food and cover for numerous wildlife species, including nutria (*Myocaster coypus*), otter (*Lutra canadensis*), and muskrat (*Ondatra zibethicus*). In addition, the lands in the area provide habitat for skunk (family Mustelidae), rabbit (*Sylvilagus* spp.), raccoon (*Procyon lotor*), opossum

(*Didelphis virginiana*), and armadillo (*Dasyurus novemcinctus*). In the immediate project area, there is limited habitat for wildlife species due to lack of vegetative cover.

### 3.4 FISHERIES AND ESSENTIAL FISH HABITAT

Shallow bay areas provide important nursery and feeding areas for such commercial and sport species as red drum (*Sciaenops ocellata*), black drum (*Pogonias cromis*), spotted seatrout (*Cynoscion nebulosus*), southern flounder (*Paralichthys lethostigma*), sheepshead (*Archosargus probatocephalus*), and croaker (*Micropogonias undulatus*). Other common fishes include sea catfish (*Arius felis*), mullet (*Mugil cephalus*), bay anchovy (*Anchoa mitchilli*), and squid (*Loligo sp.*). Brown shrimp (*Farfantepenaeus aztecus*), white shrimp (*Litopenaeus setiferus*), and blue crab (*Callinectes sapidus*) are important commercial crustaceans.

Essential fish habitat (EFH) consists of those habitats necessary for spawning, breeding, feeding, or growth to maturity of species managed by Regional Fishery Management Councils, as described in a series of Fishery Management Plans, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. The Gulf of Mexico Fishery Management Council has identified habitats in the Lower Laguna Madre as EFH for juvenile and adult gray snapper (*Lutjanus griseus*); red drum; Spanish mackerel (*Scomberomorus maculatus*) brown, pink and white shrimp; Gulf stone crab (*Menippe adina*); stone crab (*Menippe mercenaria*); and spiny lobster (*Panulirus argus*) (NOAA, 2008).

In addition to EFH, wetlands and seagrasses in the Laguna Madre system provide nursery and foraging habitat that supports various forage species and recreationally important fishery species such as spotted seatrout, flounder, Atlantic croaker, black drum, striped mullet and blue crab. These estuarine-dependent organisms also serve as prey for other fisheries managed by the fisheries management council (e.g., red drum, mackerels, snappers, and groupers) and highly migratory species, such as billfishes and sharks, managed by the National Marine Fisheries Service (NMFS). EFH for those species that may occur in the project area and may be affected by the proposed action include the sand substrate and seagrass beds at the project site.

### 3.5 THREATENED AND ENDANGERED SPECIES

#### Federally-listed Species

Table 2 summarizes the U.S. Fish and Wildlife Service's (USFWS) list of threatened and endangered species for Cameron County. In addition to these species, the NMFS lists the endangered marine species in Table 3 as occurring in Texas. Table 4 includes NMFS's list of marine species of concern in Texas. The District prepared a Biological Assessment that addresses the proposed project's potential impacts to these threatened and endangered species and species of concern (Appendix F). The BA includes information on distribution and habitat requirements of these species. Of these species, the brown pelican and piping plover regularly occur in the project area. The brown pelican is a common resident and tidal flats are potential winter foraging habitat for the piping plover. Loggerhead and green sea turtles are known to feed on seagrasses in the Lower Laguna Madre, with the green sea turtle being the more abundant of

the two species (Withers, 2002a). For the remaining species, the likelihood of occurrence in the project area is low to very low, primarily due to the lack of suitable habitat in the project area or the project area's being outside of the known present or historical range and distribution of these species.

**Table 2**  
**USFWS List of Threatened and Endangered Species for Cameron County**

<u>Common Name (<i>Scientific Name</i>)</u>	<u>Listing Status</u>
<b>BIRDS</b>	
Brown pelican ( <i>Pelecanus occidentalis</i> )	Delisted
Piping plover ( <i>Charadrius melodus</i> )	Threatened
Northern aplomado falcon ( <i>Falco femoralis septentrionalis</i> )	Endangered
<b>TERRESTRIAL MAMMALS</b>	
Gulf coast jaguarundi ( <i>Herpailurus yagouaroundi cacomitli</i> )	Endangered
Ocelot ( <i>Leopardus pardalis</i> )	Endangered
<b>REPTILES</b>	
Loggerhead sea turtle ( <i>Caretta caretta</i> )	Threatened
Green sea turtle ( <i>Chelonia mydas</i> )	Threatened
Kemp's Ridley sea turtle ( <i>Lepidochelys kempii</i> )	Endangered
Hawksbill sea turtle ( <i>Eretmochelys imbricata</i> )	Endangered
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	Endangered
<b>MARINE MAMMALS</b>	
West Indian manatee ( <i>Trichechus manatus</i> )	Endangered
<b>PLANTS</b>	
South Texas ambrosia ( <i>Ambrosia cheiranthifolia</i> )	Endangered
Texas ayenia ( <i>Ayenia limitaris</i> )	Endangered

Source: USFWS 2010

**Table 3**  
**Endangered Marine Mammals and Fish in Texas**

<u>Common Name (Scientific Name)</u>
MARINE MAMMALS
Blue whale ( <i>Balaenoptera musculus</i> )
Finback whale ( <i>Balaenoptera physalus</i> )
Humpback whale ( <i>Megaptera novaengliae</i> )
Sei whale ( <i>Balaenoptera borealis</i> )
Sperm whale ( <i>Physeter macrocephalus</i> )
FISH
Smalltooth sawfish ( <i>Pristis pectinata</i> )

Source: NMFS (2009)

**Table 4**  
**Marine Species of Concern in Texas**

<u>Common Name (Scientific Name)</u>
FISH
Dusky shark ( <i>Carcharhinus obscurus</i> )
Largetooth sawfish ( <i>Pristis pristis</i> )
Night shark ( <i>Carcharhinus signatus</i> )
Saltmarsh topminnow ( <i>Fundulus jenkinsi</i> )
Sand tiger shark ( <i>Carcharias taurus</i> )
Speckled hind ( <i>Epinephelus drummondhayi</i> )
Warsaw grouper ( <i>Epinephelus nigritus</i> )
White marlin ( <i>Tetrapturus albidus</i> )
INVERTEBRATES
Ivory bush coral ( <i>Oculina varicosa</i> )

Source: NMFS (2009)

State-listed Species

Table 5 is a list of additional species that are listed as rare by the Texas Parks and Wildlife Department (TPWD) and have the potential to sporadically be present at the project site. A comprehensive list of State-listed rare species for Cameron County is included in Appendix F.

**Table 5**  
**Potential State-Listed Rare Species for Cameron County**

<u>Common Name (<i>Scientific Name</i>)</u>	<u>State Status</u>
Peregrine falcon ( <i>Falco peregrinus</i> )	Threatened
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	Threatened
Eskimo curlew ( <i>Numenius borealis</i> )	Endangered
Reddish egret ( <i>Egretta rufescens</i> )	Threatened
White-faced Ibis ( <i>Plegadis chihi</i> )	Threatened
Sooty tern ( <i>Sterna fuscata</i> )	Threatened

The peregrine falcon and American peregrine falcon have been federally delisted but maintain the state listing status. There is a potential for the peregrine falcon or its subspecies to occur as migrants in the area. Both migrate across the state from more northern breeding areas in the United States and Canada to winter along the Gulf coast and farther south.

The reddish egret favors brackish marshes and shallow salt ponds and tidal flats. It nests on the ground or in trees or bushes, generally on dry coastal islands in brushy thickets of yucca and prickly pear.

The white-faced ibis prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats. It nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

The sooty tern would occur predominately “on the wing” in the project area. This species does not dive, but snatches small fish and squid with its bill as it flies or hovers over water. Breeding occurs from April through July.

### 3.6 CULTURAL RESOURCES

The remnant of the western portion of the first Queen Isabella Causeway, or the “old causeway”, to South Padre Island, constructed in 1954, extends into the Laguna Madre from the east shore of Long Island and is located southeast of PA 240. The structure is presently under private ownership. Since the structure is more than 50 years old, it is potentially eligible for listing on the National Register of Historic Places (NRHP). However, the structure is outside of the footprint of the area that would be affected by the proposed project and further archeological investigations of the causeway are not warranted.

Archival research shows that the Port Isabel area, including the proposed project area, has been employed extensively by historic watercraft throughout the nineteenth and early twentieth centuries. Historic records indicate that numerous historic vessels are known to have sunk or been abandoned in the Laguna Madre. To determine if any properties eligible for the NRHP were within the proposed channel widening area, a close-order remote-sensing marine survey of the proposed channel widening location was conducted in October 2005. Results of the survey identified a total of 38 magnetic anomalies and 15 side scan sonar targets. None of the magnetic

anomalies appeared to fulfill the criteria for significant submerged cultural resources, and the acoustic images did not have the signal characteristics indicative of shipwreck remains. Therefore, none of the magnetic anomalies or side scan targets was recommended as eligible for the NRHP and no additional archeological work was recommended. A March 2006 draft cultural resources report, which included these recommendations, was submitted to the Texas State Historic Preservation Officer (SHPO). The final report was completed in September 2006. The SHPO concurred with the final report. Correspondence with the SHPO in regard to the proposed project is included in Appendix G.

### 3.7 AIR QUALITY AND NOISE

Existing ambient air quality is good in the project area because of the lack of heavy industry and relatively sparse populations. The Texas Commission on Environmental Quality reports that Cameron County has met the U.S. Environmental Protection Agency's national air quality standards for "criteria pollutants". Criteria pollutants are common air pollutants for which the U.S. Environmental Protection Agency has established standards to regulate air quality. These include sulfur dioxide, carbon monoxide, nitrogen dioxide, ground-level ozone and suspended particulates.

Because of the non-urban nature of the area, noise levels are relatively low. Human-generated ambient noise is primarily produced by vessels GIWW, by motor vehicles on State Highway 100 and residential and recreational activities in the resort community on Long Island. Periodic noise is also generated by dredging operations during dredging cycles. This noise is comparable to noise produced by commercial vessels using the channel. The nearest sensitive receptors of noise impacts in the project area would be in the residential canal subdivision in Port Isabel located approximately 1,000 feet west of the proposed channel widening area.

### 3.8 WATER AND SEDIMENT QUALITY

The water in the Laguna Madre system is generally considered to be of moderate to good quality, but it is affected by a variety of factors, including non-point source contamination from urban and agricultural sources (USACE, 2004). Much of the land is deltaic, having been formed by sediments from the Rio Grande (USACE, 2004). Sediments in the project area are predominately mud, silt, and quartz-derived sand and pebbles. Many dredged material banks are located along the GIWW. Water and sediment sampling is routinely conducted in the project area in association with maintenance dredging of the GIWW. Historical data indicate that water and sediment quality in the project area is good. Data from the most recent water, sediment, and elutriate sampling in the project area (2004), including heavy metals, ammonia, and total organic carbon, are included in Appendix C.

### 3.9 HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

The District performed a Hazardous, Toxic, and Radioactive Waste (HTRW) assessment of lands and water resources in and adjacent to the study area. The objective was to identify the existence of potentially hazardous sites or facilities, hazardous contamination, and materials of

concern that could impact or be impacted by the proposed project. The assessment included a site visit, a review of regulatory agency data and a review of aerial photographs. These investigations did not identify any HTRW contamination at the project site or any sites or incidents near the project that would be of concern.

During the operation of construction and maintenance equipment, there is a slight potential for accidental spills of small amounts of fuel, lubricants, coolants, or hydraulic fluids. The contractor would be required to immediately contain and clean up any such spills.

### 3.10 SOCIOECONOMICS

The project area is in Cameron County, which, according to the U. S. Census Bureau's 2005-2007 American Community Survey 3-Year Estimates, had a population of 379,874 living in 140,565 households (USCB, 2009a). The 2007 population of Port Isabel was estimated at 16,408 (USCB, 2009b). According to the Texas Workforce Commission, most of the jobs in Cameron County in 2000 were in the services (28.1%) and trade sectors (23.8%). Government (Federal, State and local) (23.6%) and manufacturing (11.4%) are other important industry sectors within this county (USACE, 2003). The industry sector with the greatest percent increase in jobs between 1998 and 2000 was the construction industry, which grew by 21.3%. The total labor force in Cameron County was 110,819 in 2000, representing a 10.2% increase over the 1998 employment level. This rate of job growth was higher than that of the State during the same years (7.2%). Unemployment rates in Cameron County were 12.7% in 1990 and 9.2% in 2001, higher than that of the state (6.3% in 1990, 5.1% for 2001).

A large percentage of the economic activity in the region is linked to waterborne commerce, including movement of goods by barge on the GIWW. An average of over two million tons of freight per year is transported via the GIWW below Corpus Christi. The GIWW at Port Isabel is an important waterway for transporting petroleum products, especially fuel, to support the extensive agriculture based economy of the Rio Grande Valley. While most of the tonnage involves refined petroleum products, fertilizer, sand, gravel, iron and steel products, and sugar each have composed from 6 to 10 percent of the shipments (USACE, 2004).

### 3.11 ENVIRONMENTAL JUSTICE

In compliance with Executive Order (EO) 12898, Federal Action to Address Environmental Justice in Minority and Low-Income Populations, an analysis was performed to determine whether the proposed project will have a disproportionate adverse impact on minority or low-income population groups in the vicinity of the project area. This analysis consisted of determining characteristics of residential populations in the project area.

A breakdown of the population of Port Isabel by ethnic group is shown in Table 6. For comparison, the breakdown for Cameron County and the state of Texas are shown, also. The table also shows median income and the percent of families living below poverty level. Based on the census figures, the population of city of Port Isabel consists of a lower percentage of persons

of Hispanic or Latino origin than in Cameron County but more than double that of the state. Of the population living in Port Isabel, 74.4 percent are of Hispanic or Latino origin, as compared to 86.0 percent in Cameron County and 35.5 percent for the state.

The reported median family income for Port Isabel and Cameron County is lower than for the state of Texas. The percent of families reported living below the poverty level within the Port Isabel and the Cameron County is much higher than for the state.

**Table 6  
Demographic Information**

	Port Isabel	Cameron County	State of Texas
<b>Ethnicity</b>			
White	79.7 %	85.6 %	70.6 %
African American	1.0 %	0.5 %	11.5 %
Native American	0.3 %	0.2 %	0.5 %
Asian	0.2 %	0.6 %	3.3 %
Pacific Islander	0.1 %	0 %	0.1 %
Other	15.5 %	12.0 %	12.3 %
Two or more races	3.1 %	1.1 %	1.8 %
Hispanic or Latino Origin	74.4 %	86.0 %	35.5 %
<b>Income &amp; Poverty</b>			
Median Family Income	\$26,077	\$30,024	\$54,165
Families Below Poverty	21.7 %	37.1 %	13.3 %

Source: (USCB, 2009)

### 3.12 PRIME AND UNIQUE FARMLANDS

The area that would be affected by the proposed project does not include any land or soil suitable for farming activities since the project area consists of open water in the Laguna Madre and an existing dredged material placement area.

### 3.13 RECREATIONAL RESOURCES

The natural resources of the Laguna Madre, although not as heavily utilized as other areas of the Texas coast, provide extensive recreational opportunities (USACE, 2004). Activities such as fishing, bird watching, waterfowl hunting, windsurfing, camping, boating, jet skiing, swimming, shelling, and beach combing produce recreational opportunities that result in substantial economic benefits for the area. The recreational fishing industry supplies the majority of these economic benefits in the Laguna Madre. Tourism is also a major industry in the area. South Padre Island, which is across the QIM Bridge from Port Isabel, is a popular vacation destination. Long Island Resort, located on Long Island, is a gated community that offers vacation home and RV lot rentals.

### 3.14 ROADWAYS AND TRAFFIC

State Highway 100 is a four lane, divided highway that passes over the QIM Bridge and becomes Park Road 100. It is the only major highway in the project area and provides the only overland access to South Padre Island. South Padre Island is a popular tourist destination, especially during the warmer months of the year. During college spring break, the traffic can be particularly heavy on SH 100 over the QIM Bridge.

South Garcia Street, located immediately to the west of PA 240, is a two-lane road that passes over the Long Island swing bridge and provides access to the resort community on Long Island. Since the road only provides local access to Long Island and is not a through street, traffic tends to be light, except when back-ups occur during bridge openings to allow passage of vessels on the GIWW.

## 4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

### 4.1 IMPACTS ON PHYSICAL CHARACTERISTICS AND PROCESSES

Hydrodynamic modeling conducted by USACE’s Engineer Research and Development Center (ERDC) demonstrated that the widened channel would tend to reduce current velocities along the widened portion of the channel (Teeter, et al, 2003). The widening would not have a significant effect on current velocities in the channel outside of the widened portion.

The modified NRC Curves I and III and equations 2 and 3 (EC 1165-2-211 Appendix B) were used to estimate the intermediate and high changes to relative sea-levels. Construction of the project is estimated to be completed in 2012. Table 7 includes the mean sea-level values for NOAA Station # 8779770 (located approximately 1.7 miles from the proposed widening) for the year 2037 (midpoint) and at the end of the 50-year planning period 2062.

**Table 7  
Estimated Future Mean Sea-Level, NOAA Station # 8779770**

Mean Sea Level at Target Year (TY)	Low Rate (historical trend)		Intermediate Rate (NRC Curve I - modified)*		High Rate (NRC Curve III - modified)*	
	m	ft	m	ft	m	ft
2009	1.423	4.670				
2012**	1.434	4.704	1.437	4.717	1.449	4.754
2037	1.525	5.003	1.559	5.118	1.707	5.603
2062	1.616	5.302	1.707	5.662	2.118	6.949
2109	1.787	5.863	2.132	6.995	3.254	10.678

\*  $M + 0.0017 = 0.00364$  m/yr

\*\*Estimated construction complete

Rising sea level would not have any significant impacts during the 50-year project life. Using the historical MSL trend to estimate the change in MSL from 2012 (4.7 feet) to 2062 (5.3 feet), the only anticipated impact of sea level rise on the channel would be a negligible increase of the depth of the channel (approximately 0.6 feet), which would not have a significant effect on the navigational safety of the channel. The high rate (modified NRC Curve III) produces a significantly higher estimated MSL of 6.9 feet in 2062, an increase of 2.2 feet from 2012 to 2062. Potential effects of an increased channel depth of just over two feet include monitoring PA 241 levees to mitigate impacts associated with increases in MSL. Maintenance of PA 241 would take place independent of the curve widening project. The estimated 2.2 foot increase in MSL would increase the depth of the channel and potentially reduce the amount of dredged maintenance material. The intermediate rate (modified NRC Curve I) produces an estimated MSL of 5.6 feet in 2062, an increase of 0.9 feet from 2012 to 2062. This represents a negligible increase in channel depth 0.3 feet greater than the historic rate and is also not expected to significantly impact the navigational safety of the channel.

The installation of a current/tide meter on existing infrastructure would not have any direct impacts on the physical environment. It would be installed such that it would be able to accommodate any rise in sea level.

Under the no action alternative, the existing current velocities would not change. Sea level changes would not have any significant effects on operation or maintenance of the existing project.

## 4.2 IMPACTS ON BIOLOGICAL COMMUNITIES

### Terrestrial Habitat

Terrestrial vegetation present in the placement areas, which is sparse, would be covered by deposition of the dredged material from construction and maintenance dredging but this vegetation is likely to return after the placement activities. Most terrestrial species would be negatively affected by the placement of dredged material in the placement areas. Terrestrial habitat areas would be periodically covered, resulting in the death of any slow moving or non-motile species. Larger, more mobile species, especially birds, would be temporarily displaced. However the habitat would likely return following placement activities.

The placement of maintenance material would continue under the no action alternative until the capacity of the PA 240 is reached. The impacts on terrestrial vegetation would be similar to those of the proposed plan.

### Seagrasses

Sediment contained in the effluent from the semi-confined dredged material placement area during channel widening likely would settle to some extent on existing seagrasses that have colonized in the shallow waters that have formed to the northeast of PA 240 due to previous

dredged material placement operations in this area. However, these impacts would be similar to existing authorized maintenance dredged material placement practices. A rock weir across the spillway exit from the disposal area would help minimize the amount of sediment. Further, since the new work material that comes from widening the channel bend is more consolidated than maintenance material, it is expected that less sediment would be contained in the effluent than during typical maintenance dredging operations. Dredging would be done during periods when seagrasses are dormant, which would further reduce impacts. It is anticipated that impacts to seagrasses would be temporary, as the sediment fans created by previous dredging operations typically re-colonized with seagrasses. Dredging and placement activities would be limited to months when seagrasses are dormant (November through February) to minimize impacts on seagrasses.

There are also seagrasses adjacent to the southern end of the area to be dredged. Based on a review of historical aerial photos, the extent and boundary of these seagrasses is ephemeral. There may or may not be project impacts to these seagrasses. There is a chance that up to approximately 0.1 acres of seagrasses could be directly impacted by the dredging associated with channel widening, which the District determined would be *de minimus*. Since the work would be performed during seagrass dormancy, indirect impacts from increased turbidity and sediment deposition would be avoided.

Under the no action alternative, the placement of maintenance material into semi-confined PA 240 would continue until the capacity of PA 240 is reached. These impacts on seagrasses would be similar to the preferred alternative, although, as mentioned above, the extent of impacts could be slightly more extensive due to the less consolidated consistency of maintenance material compared to new work material.

### Wetlands

There are no wetlands in the immediate vicinity of the project site. Therefore, no direct impacts to wetlands will occur and no secondary impacts to any wetlands that may be outside the project area would be anticipated under either the proposed plan or the no action alternative.

### Tidal Flats

A tidal sand/mud flat is located immediately east of PA 240 on the sediment fan created by the disposal of dredged material in this semi-confined disposal area. It is likely that additional material would deposit on this area during the placement of material from the proposed widening of the channel. It is expected that the location of the tidal area may shift as material is deposited but that there would not be a significant net change in the amount of tidal sand/mud flats. This would apply to either the proposed plan or the no action alternative.

### Mangroves

Since mangroves are located along the shoreline, they would not be impacted by either the proposed work or by continued maintenance activities under the no action alternative.

## Open Water

The widening of the channel would directly impact approximately 14.3 acres of open water habitat consisting of bay bottom substrate. This area would be deepened from its existing depth, ranging from about 5 to 15 feet, with deeper scour areas, to a proposed depth of 14 to 16 feet. The habitat of any benthic organisms presently occupying the proposed footprint of the area of widening would be eliminated by the dredging. Bottom habitat would be temporarily eliminated but would eventually recover after construction. Organisms adapted to life in this shifting environment are also adapted to quickly re-colonize any new area or habitat in the area. Since the loss of this type of habitat represents an insignificant portion of total available habitat of this type in the project area, these impacts are considered to be minor.

Under the no action plan, no additional open water habitat would be impacted.

### 4.3 IMPACTS ON WILDLIFE

The proposed work would not have significant adverse impacts on wildlife in the area. There would be temporary, minor disturbance to marine species during construction but species that do not tolerate disturbance would avoid the area during this time. The project area does not contain any scarce or unique feeding or reproductive areas. The habitat in the project area is similar to the habitat found extensively in the region and does not represent a significant portion of this type of habit. Therefore, the temporary disturbance would be negligible.

The impacts of wildlife resulting from maintenance activities under the no action plan would be negligible and similar to those of the proposed work.

### 4.4 IMPACTS ON FISHERIES AND ESSENTIAL FISH HABITAT

Short-term adverse impacts to fisheries would be experienced during construction activities. Approximately 7.6 acres of shallow open water bottom habitat would be deepened to a depth of 14 to 16 feet. Benthic organisms presently occupying the proposed dredging footprint would be eliminated by the widening of the channel. Bottom habitat would be temporarily eliminated but would eventually recover after construction. Equipment noise and activity would result in disturbance in the immediate construction area to some fish species. However, these effects would be temporary and would cease when construction activities are completed. Temporary increases in turbidity would be expected during dredging operations but this would be inconsequential. These impacts are considered to be minor and, overall, adverse impacts of the proposed action on fisheries also would be minor. The amount of bottom surface disturbed would be insignificant considering the amount of bottom habitat available in the area.

The proposed action would affect EFH only minimally and temporarily. Sediment contained in the effluent from the semi-confined dredge material placement area during channel widening likely would settle on existing seagrass beds in the shallow waters to the east of PA 240 but these impacts would be similar to existing authorized maintenance dredged material

placement practices (or the no action plan). All future maintenance dredged material would be placed in PA 241, an upland confined disposal area. Since potential impacts are expected to be temporary and minor in individual or cumulative effects, mitigation for these impacts would not be necessary. This draft EA will serve to initiate EFH consultation with NMFS.

#### 4.5 IMPACTS ON THREATENED AND ENDANGERED SPECIES

The proposed project's potential to affect federally-listed threatened and endangered species and species of concern is addressed in a Biological Assessment (BA, Appendix F), which has been submitted to the USFWS and NMFS for review. The overall conclusion is that the proposed project is not likely to adversely affect any federally-listed threatened or endangered species, nor will it adversely modify critical habitat. Also, the project is not likely to adversely affect any species of concern.

Although several threatened or endangered species may occur in the project vicinity, including piping plovers and sea turtles, neither of these species nest in the project area and no regularly used habitat is known to exist in the immediate project site. These species, if they happened to be present during construction activities, would be able to relocate during this activity and would not be adversely affected. Other listed species are unlikely to occur in the project area, primarily due to the lack of suitable habitat or the project's location in relation to these species' known current or historical distribution. Should any of these species wander into the project vicinity, the size and mobility of these animals would allow them to avoid the immediate project site during construction and maintenance operations.

State-listed rare species, including the American and Arctic peregrine falcons, Eskimo curlew, reddish egret, white-faced ibis, and sooty tern, could possibly be found in the project vicinity as migrants. However, no regularly used habitat would be affected and any effects on these species would be minor and of short duration.

#### 4.6 IMPACTS ON CULTURAL RESOURCES

The proposed work was coordinated with the Texas SHPO. The SHPO concurred that the proposed project would have no effect on any historic properties. Should any cultural resources be discovered during construction, the construction contractor would immediately stop all work in that area and notify the District. The District would initiate coordination with the SHPO, as necessary.

#### 4.7 IMPACTS ON AIR QUALITY AND NOISE

Temporary increases in exhaust emissions would occur during construction and maintenance activities due to the operation of dredging and construction equipment. These increases are minor in nature and would be temporary, occurring only during the construction period and during maintenance operations. Dredging equipment would be the primary sources of noise from the proposed activities. These impacts are expected to be minor in nature and would

be temporary, occurring only during the construction period. Noise levels would be the same as those that occur during existing channel maintenance operations (or the no action plan).

#### 4.8 IMPACTS ON WATER AND SEDIMENT QUALITY

Except for increased turbidity, widening of the channel would have no significant adverse impacts on water and sediment quality. Ordinarily, some elevation in turbidity is expected to result from dredging activity. However, any re-suspension is expected to be intermittent and localized. After dredging operations are completed, the suspended materials would disperse. The dredged material consists of uncontaminated materials. Any impacts from the placement of materials are expected to be minor in nature and would be temporary, occurring only during the construction period. Since PA 240 is an authorized semi-confined placement area, some sediment from the effluent would deposit in the shallows to the east of the placement area. This impact would be similar to routine maintenance dredging for the existing project (or the no action plan). During future maintenance dredging operations for this reach of the GIWW, all material would be placed in PA 241, which is an upland confined placement area.

#### 4.9 IMPACTS FROM HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

A site investigation and technical assessment was conducted to determine the presence of HTRW in or near the proposed project and did not find any sites of concern at or immediately adjacent to the proposed project footprint. The HTRW analysis report is included in Appendix D. The potential for encountering HTRW during the implementation of the proposed project or under the no action plan is low.

#### 4.10 IMPACTS ON SOCIOECONOMICS

There would be minimal adverse effects from the proposed work on vessel traffic within the navigation channel. Only brief delays may be expected during set-up of dredging equipment during construction and maintenance operations. The proposed work would not restrict access to the general area for commercial or recreational boating. The project would have a beneficial effect on local navigation by providing for safer navigation for barge tows. The channel widening would not have any appreciable effects on the local communities as the dredging work would be performed along the existing channel, away from these communities, and the disposal of dredged material would be in existing disposal areas. This also applies to the no action plan.

#### 4.11 IMPACTS RELATING TO ENVIRONMENTAL JUSTICE

Any direct adverse impacts on human populations caused by the project would be minimal and would be distributed among all population groups within the project area. Accordingly, the project would not have a disproportionate adverse impact on minority or low-income population groups. The project is expected to have a positive impact on all population groups by providing for safer navigation in reach of the GIWW and reducing the risk of allisions at this location.

#### 4.12 IMPACTS ON PRIME AND UNIQUE FARMLANDS

Due to the marine location of the proposed work and the use of existing dredge material disposal sites, neither the proposed project nor the no action plan would have any impacts on prime or unique farmlands.

#### 4.13 IMPACTS ON RECREATIONAL RESOURCES

The proposed work would not occur in areas where recreational activities normally take place. The GIWW would remain open during dredging operations but there could be temporary delays to recreational boating while positioning dredging equipment. These impacts would be minor under the proposed plan or the no action plan.

#### 4.14 IMPACTS ON ROADWAYS AND TRAFFIC

All materials and equipment would be transported to the work site and disposal areas by water. It is not anticipated that local roadways would be used for transport of materials or equipment. Therefore, implementation of the recommended plan would not have any impacts on roadways and traffic.

### **5.0 MITIGATION**

The proposed project would not impact wetlands and the impacts on seagrass beds would be minimal and temporary. There would not be any significant adverse impacts to other resources. Therefore, compensatory mitigation would not be required.

### **6.0 CUMULATIVE IMPACTS**

Cumulative impacts are defined by the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) as the effects on the environment which result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Ecological effects refer to effects on natural resources and on the components, structures, and functioning of affected ecosystems, whether direct, indirect, or cumulative.

For the proposed project, the most significant resources that would potentially be impacted are seagrasses, water quality, traffic and transportation, and health and safety. The project impact zone is the southern end of the Lower Laguna Madre in the vicinity of Port Isabel. The impacts of the proposed project are expected to be localized, affecting only this limited area. The temporary impacts from the widening of the channel are not expected to last beyond the construction period. Other long-term impacts associated with maintenance activities are not expected to have any significant additional cumulative effect as those addressed in the September 2003 EIS for maintenance dredging of the GIWW in the Laguna Madre.

The turbidity impacts that are anticipated to occur in association with construction and maintenance activities will be temporary. These activities will be conducted during months when seagrasses are dormant to minimize the effects on seagrasses. Historically, the construction of the GIWW has had a positive impact on seagrasses and water quality in the Lower Laguna Madre. In particular, the construction of the waterway has increased water circulation and reduced the occurrence of extreme hypersalinity events (Tunnell, 2002a). This may have resulted in the increased productivity and distribution of seagrasses in the Laguna Madre that has occurred since the construction of the GIWW (Withers, 2002a). A review of aerial photography in the Lower Laguna Madre shows that shallow open water placement areas, such as PA 139, which is located immediately north of the proposed project site, have been colonized by seagrasses.

Similar dredging and dredged material disposal activities to the proposed project are routinely performed by USACE along the GIWW and Brownsville Ship Channel. The additional maintenance material that would be dredged from the widened channel reach and placed into PA 241, approximately 9,000 cubic yards per 5-year maintenance dredging cycle, would not result in a significant decrease in the capacity or life of the placement area. Other than the deepening and widening of the Brownsville Ship Channel, no other federal navigation projects are anticipated in the foreseeable future. Given the types of vessels using the GIWW and the anticipated level of commercial use of the GIWW for the foreseeable future, it is unlikely that the GIWW would need to be modified to accommodate increased shipping capacity. The proposed widening would have a positive effect on navigation safety in the immediate project area by providing a larger area for barge tows to set up for passage through the narrow passages at the bridges. This would also result in lessening the chances of bridge collisions that could have an impact on road transportation associated with the bridges. The proposed project is not designed to allow for increased water commerce and it will not promote increased commerce.

This area of the Laguna Madre in the project vicinity is a highly developed area. Development in Port Isabel and South Padre Island includes public parks, hotels, condominiums and amenities supporting tourism, which is the primary industry in the area. The proposed project is designed to increase safety for commercial barge transportation and it is extremely unlikely that it would have any effect on development in the project area.

Based on this assessment, no adverse cumulative impacts to environmental resources are expected as a result of project implementation.

## **7.0 RELATIONSHIP TO OTHER FEDERAL PROJECTS**

This plan is part of the GIWW, which is a Federally-maintained navigation channel. The purpose is to increase the navigational safety of this project. The Brazos Island Harbor (BIH) Project, which involves the proposed deepening and widening of the Brownsville Ship Channel, is located immediately south of the subject project. The channel widening and maintenance work will not impact the BIH Project. There are no other Federal projects directly affected by this plan.

## 8.0 COMPLIANCE WITH PLANNING AND ENVIRONMENTAL REQUIREMENTS

### 8.1 PLANNING REQUIREMENTS

The planning of the proposed project is in accordance with USACE's "Actions for Change" policies. Plan formulation has been based on a comprehensive systems approach and potential direct and indirect affects inside and outside the project area have been considered. Risk and uncertainty have been considered in evaluating alternatives, which are discussed in this document. The proposed plan has been selected based on inter-disciplinary coordination that utilizes the best professional and technical expertise available during the planning process.

### 8.2 ENVIRONMENTAL REQUIREMENTS

This assessment has been prepared to satisfy the requirements of all applicable environmental laws and regulations, and has been prepared in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act (NEPA), 40 CFR Parts 1500 – 1508, and USACE Regulation ER 200-2-2, *Environmental Quality: Procedures for Implementing NEPA*. The planning and implementation of the proposed project is consistent with the U. S. Army Corps of Engineers' Environmental Operating Principles. The following is a list of applicable environmental laws and regulations that were considered in the planning of this project and the status of compliance with each:

National Environmental Policy Act - This environmental assessment has been prepared in accordance with Council on Environmental Quality regulations for implementing NEPA. The environmental and social consequences of the recommended plan have been analyzed in accordance with the Act and presented in the assessment.

Fish And Wildlife Coordination Act Of 1958, As Amended - The proposed plan is being coordinated with the U. S. Fish and Wildlife Service, National Marine Fisheries Service, and Texas Parks and Wildlife Department. A copy of this draft EA is being provided to these agencies and information provided by these agencies on fish and wildlife resources will be considered in the development of the final project plan.

Endangered Species Act of 1973, as amended – The District is coordinating this project with the USFWS and NMFS regarding threatened, endangered or proposed species and their critical habitats in the project area. The District requested information on listed species that may occur in the project area from the USFWS and NMFS by letters dated December 12, 2007. The USFWS and NMFS provided the requested lists on January 18, 2008 and December 19, 2007, respectively. The District prepared a Biological Assessment of potential impacts to federally listed species and provided it to the USFWS and NMFS for review. The BA concluded that the proposed project would not result in any significant adverse impacts to federally listed threatened or endangered species (Sections 3.5 and 4.5). The BA and correspondence with the USFWS and NMFS regarding the BA will be included in Appendix F of the final EA.

Magnuson-Stevens Fishery Conservation and Management Act - Congress enacted amendments to the Magnuson-Stevens Fishery Conservation and Management Act in 1996 that established procedures for identifying essential fish habitat and required interagency coordination to further the conservation of federally-managed fisheries. Rules published by the National Marine Fisheries Service (50 CFR 600.805 through 600.930) specify that any Federal agency that authorizes, funds or undertakes, or proposes to authorize, fund or undertake an activity that could adversely affect EFH be subject to the consultation provisions of the act. No significant impacts to living marine resources or EFH would occur as a result of the project (Sections 3.4 and 4.4). The draft EA is being coordinated with NMFS and comments from NMFS regarding fisheries and EFH will be included in Appendix G.

Clean Water Act of 1977 – The District evaluated the proposed action pursuant to Section 404(b)(1) of the Clean Water Act and this analysis is included in Appendix C. A Joint Public Notice has been issued with the Texas Commission on Environmental Quality (Appendix A). The Commission is the state agency for issuing state water quality certifications pursuant to Section 401 of the Clean Water Act. A copy of the state water quality certification will be included in Appendix C of the final EA.

National Historic Preservation Act of 1966, as amended – Compliance with the National Historic Preservation Act of 1966, as amended, requires identification of all properties in the project area listed on, or eligible for listing on, the NRHP. For any adversely affected properties, mitigation measures must be developed in coordination with the SHPO and the Advisory Council on Historic Preservation. The District initiated coordination of the proposed project with the Texas SHPO in a March 20, 2006 letter. The District contracted an archeological consultant to conduct a cultural resources investigation, which concluded that the project would not impact any properties eligible for listing on the NRHP. In an email dated June 2, 2009, the State verified that it had accepted the investigation report and determined that the archeological investigation requirements have been met. (Sections 3.6, 4.6 and Appendix G).

Coastal Barrier Resources Act of 1982 – This Act established the John H. Chaffee Coastal Barrier Resources System to minimize the loss of human life, wasteful federal expenditures, and damage to fish, wildlife, and other natural resources associated with coastal barriers. The Act defines coastal barriers as “bay barriers, barrier islands, and other geological features composed of sediment that protect landward aquatic habitats from direct wind and waves.” As part of the program, the Federal government discourages development on designated undeveloped coastal barriers by restricting certain federal financial assistance, including USACE development projects. The proposed project is not located on a designated undeveloped coastal barrier so this Act does not apply to the proposed work.

Coastal Zone Management Act of 1972 - This Act requires that all land-use changes in the project area be conducted in accordance with approved state coastal zone management programs. Any project that is located in, or which may affect land and water resources in the Texas coastal zone and that requires a federal license or permit, or is a direct activity of a federal

agency, or is federally funded must be reviewed for consistency with the Texas Coastal Management Program (TCMP). The proposed action is within the coastal boundary defined by the TCMP. The District has determined that the proposed project would not adversely impact these resource areas and that the proposed activities are consistent with the goals and policies of the Texas Coastal Management Program to the maximum extent practicable. The District's consistency review is included in Appendix E.

Clean Air Act of 1977 - The Environmental Protection Agency established nationwide air quality standards to protect public health and welfare. The State of Texas has adopted the National Ambient Air Quality Standards as the state's air quality criteria. The project is located in Cameron County which has attainment status. Emissions from construction activities are not considered regionally significant (Sections 3.7 and 4.7).

Executive Order 11990, Protection of Wetlands - The proposed action has been analyzed for compliance with Executive Order 11990. The project area does not contain wetlands, nor would wetlands outside the project area be affected by the project. Therefore, the proposed project is in compliance with this Order (Sections 3.2 and 4.2).

Executive Order 11988, Floodplain Management - This Order directs Federal agencies to evaluate the potential effects of proposed actions in floodplains. The proposed project is situated in a floodplain. In accordance with this Order, a public notice (Appendix A) has been circulated to acquaint the public and all interested Federal, State and local agencies and organizations with details of the proposed action and provide opportunity for public hearing. The recommended plan would not induce increased flooding in developed areas and would not contribute to increased future flood damages.

Council on Environmental Quality Memorandum dated August 11, 1980, Prime or Unique Farmlands - Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. The proposed project would not impact any lands considered prime or unique farmlands.

Executive Order 12898, Environmental Justice - This Order directs Federal agencies to achieve environmental justice to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review. Agencies are required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The proposed project would not have a disproportionate adverse impact on minority or low-income population groups within the project area (Sections 3.11 and 4.11).

Memorandum of Agreement (MOA) with the FAA to Address Aircraft-Wildlife Strikes - This MOA was executed between the Federal Aviation Administration, the U.S. Air Force, the

U.S. Army, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture. Through this MOA, the agencies establish procedures necessary to coordinate their missions to more effectively address existing and future environmental conditions contributing to aircraft-wildlife strikes throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety, while protecting the Nation's valuable environmental resources. A search was made to determine the proximity of airports to the project site. There are no airports located within 5 statute miles of the proposed project site. The nearest airport is located more than 16 statute miles away. Therefore, the risk of aircraft-wildlife strikes is considered to be negligible, and no further coordination is required.

## **9.0 CONCLUSIONS**

The following specific conclusions summarize the findings of the EA, as detailed in the environmental analyses in Section 4.0:

- Aquatic habitat would be temporarily affected during the construction activities, but these impacts do not represent significant impacts to the environment.
- No terrestrial habitats would be adversely affected by this proposed action.
- Fish and invertebrates may be affected locally in the project area, but this does not represent significant or adverse impacts to the environment.
- Threatened or endangered species would not likely be adversely affected by the project.
- Historic properties or recorded archeological sites would not be affected by the proposed action.
- Emissions from construction activities would not be regionally significant.
- Implementation of the proposed action would not result in any significant or permanent noise impacts.
- There would be no long-term impacts to water quality from the proposed activities.
- There would be no hazardous and/or toxic waste impacts from the proposed action.
- There would be minor, temporary impacts to recreational resources during the construction period, but no long-term impacts. Navigation would benefit from a wider bend in the channel, resulting in a safer and more reliable channel condition.
- No significant or adverse impacts to environmental resources are expected to occur

as a result of implementation of the proposed project. No adverse cumulative impacts to environmental resources are expected as a result of project implementation

- The U.S. Army Corps of Engineers finds that the proposed action is in compliance with the Texas Coastal Management Program.

The proposed project would not result in significant impacts to the human environment. Therefore, the preparation of an Environmental Impact Statement is not required.

## 10.0 LITERATURE CITED

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**APPENDIX A**

**PUBLIC NOTICE AND COMMENTS**

**[Public notice and comments will be included in final EA]**

**APPENDIX B**

**RESPONSES TO COMMENTS ON  
DRAFT ENVIRONMENTAL ASSESSMENT**

**[Responses to comments will be included in final EA]**

## **APPENDIX C**

# **CLEAN WATER ACT SECTION 404(B)(1) EVALUATION, WATER & SEDIMENT QUALITY DATA, AND WATER QUALITY CERTIFICATION**

## EVALUATION OF SECTION 404(b)(1) GUIDELINES (SHORT FORM)

PROPOSED PROJECT: GIWW Channel Improvements, Vicinity of Port Isabel

	Yes	No*
<b>1. Review of Compliance (230.10(a)-(d))</b>		
A review of the proposed project indicates that:		
a. The placement represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the placement must have direct access or proximity to, or be located in the aquatic ecosystem, to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative).	X	
b. The activity does not appear to:		
1) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act;	X	
2) Jeopardize the existence of Federally listed endangered or threatened species or their habitat; and	X	
3) Violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies).	X	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, an economic values (if no, see values, Section 2)	X	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see Section 5)	X	

	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)			
1) Substrate impacts		X	
2) Suspended particulates/turbidity impacts		X	
3) Water column impacts		X	
4) Alteration of current patterns and water circulation		X	
5) Alteration of normal water fluctuation/hydroperiod		X	
6) Alteration of salinity gradients		X	
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
1) Effect on threatened/endangered species and their habitat		X	
2) Effect on the aquatic food web		X	

3) Effect on other wildlife (mammals, birds, reptiles and amphibians)		X	
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	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
c. Special Aquatic Sites (Subpart E)			
1) Sanctuaries and refuges	X		
2) Wetlands	X		
3) Mud flats		X	
4) Vegetated shallows		X	
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Human Use Characteristics (Subpart F)			
1) Effects on municipal and private water supplies	X		
2) Recreational and Commercial fisheries impacts		X	
3) Effects on water-related recreation		X	
4) Aesthetic impacts		X	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	X		

	Yes
<b>3. Evaluation of Dredged or Fill Material (Subpart G)</b>	
a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (check only those appropriate)	
1) Physical characteristics	X
2) Hydrography in relation to known or anticipated sources of contaminants	N/A
3) Results from previous testing of the material or similar material in the vicinity of the project	X
4) Known, significant sources of persistent pesticides from land runoff or percolation	N/A
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	X
6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	X
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	X
8) The material to be placed in the water consists of sand and rock. The material is considered to be exempt from contaminant testing.	N/A

List appropriate references:

	Yes	No
b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and placement sites and not likely to degrade the placement sites, or the material meets the testing exclusion criteria.	X	

	Yes
<b>4. Placement Site Delineation (230.11(f))</b>	
a. The following factors as appropriate, have been considered in evaluating the placement site:	
1) Depth of water at placement site	X
2) Current velocity, direction, and variability at placement site	X
3) Degree of turbulence	X
4) Water column stratification	N/A
5) Discharge vessel speed and direction	N/A
6) Rate of discharge	X
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	X
8) Number of discharges per unit of time	X
9) Other factors affecting rates and patterns of mixing (specify)	N/A

List appropriate references:

1) not applicable

	Yes	No
b. An evaluation of the appropriate factors in 4a above indicates that the placement site and/or size of mixing zone are acceptable.	X	

	Yes	No
<b>5. Actions to Minimize Adverse Effects (Subpart H)</b>		
All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

List actions taken:

- 1) A rock weir will be in place to minimize the amount of sediment in the effluent coming from this authorized semi-confined placement area.
- 2) Dredged material will consist of natural, uncontaminated bay bottom material.

	Yes	No*
<b>6. Factual Determination (230.11)</b>		
A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:		
a. Physical substrate at the placement site (review Sections 2a, 3, 4, and 5 above)	X	
b. Water circulation, fluctuation and salinity (review Sections 2a, 3, 4, and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a, 3, 4, and 5)	X	
d. Contaminant availability (review Sections 2a, 3, and 4)	X	
e. Aquatic ecosystem structure and function (review Sections 2b and c, 3, and 5)	X	
f. Placement site (review Sections 2, 4, and 5)	X	
g. Cumulative impacts on the aquatic ecosystem	X	
h. Secondary impacts on the aquatic ecosystem	X	

<b>7. Evaluation Responsibility</b>	
a. This evaluation was prepared by:	Steven K. Ireland
Position:	Environmental Lead

8. Findings	Yes
a. The proposed placement site for discharge of or fill material complies with the Section 404(b)(1) Guidelines.	<b>X</b>
b. The proposed placement site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions:	

List of conditions:

1) **not applicable**

c. The proposed placement site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s):	
1) There is a less damaging practicable alternative	
2) The proposed discharge will result in significant degradation of the aquatic ecosystem	
3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem	

<p><i>24 May 2010</i> Date</p>	 _____ Steven K. Ireland Environmental Lead
------------------------------------	---

**NOTES:**

\* A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.

Negative responses to three or more of the compliance criteria at the preliminary stage indicate that the proposed projects may not be evaluated using this "short form" procedure. Care should be used in assessing pertinent portions of the technical information of items 2a-e before completing the final review of compliance.

Negative response to one of the compliance criteria at the final stage indicates that the proposed project does not comply with the Guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the "short form" evaluation process is inappropriate.



		<p><b>PBSJ</b> 1880 S. Dairy Ashford Rd., Ste. 300 Houston, Texas 77077-4760 Phone: (281) 493-5100 Fax: (281) 493-1047</p>	
		<p><b>Figure 1 (Sheet 3 of 3)</b> <b>GIWW</b> <b>Corpus Christi Bay to Port Isabel</b></p>	
<p>Prepared for: USACE</p>		<p>Job No.: 441416.00      Scale: 1:72000</p>	
<p>Prepared by: PBSJ/pjl</p>		<p>Date: June 2004</p>	
<p>File: k:/441172/CCtoPI/Projects/Sheet1.mxd</p>			

TABLE 1  
 CONCENTRATIONS OF DETECTED COMPOUNDS (ug/L)  
 WATER  
 GULF INTRACOASTAL WATERWAY, CORPUS CHRISTI TO PORT ISABEL

Date Sampled: May 26-27, 2004

Parameter	WQS**		Detection Limit	GIC-CBB-	GIC-BBMF-	GIB-PIAC-04			GIB-ACPM-04			GIB-PMMF-04				Field		
	Acute	Chronic		04-23	04-20	03	04	04 Dup	09	14	15	02	05	06	07	10	11	Blank
	Antimony	N/A	N/A	3.00	1.86 J	4.23	1.83 J	1.71 J	0.76 J	2.88 J	1.64 J	1.49 J	1.10 J	1.03 J	0.79 J	0.86 J	0.73 J	0.63 J
Arsenic	149	78	1.00	4.74	3.61	2.33	2.13	2.18	2.89	3.37	3.50	3.92	4.12	4.04	4.14	4.10	3.80	BDL
Cadmium	45.4	10	1.00	BDL	BDL	BDL	BDL	0.34 J	0.30 J	0.42 J	0.31 J	0.25 J	BDL	BDL	BDL	0.33 J	BDL	BDL
Copper	13.5	3.60	1.00	0.81 J	0.58 J	0.60 J	0.61 J	BDL	0.45 J	0.62 J	0.52 J	0.74 J	0.60 J	0.46 J	0.49 J	0.70 J	0.52 J	BDL
Lead	133	5.3	1.00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury	2.1	1.1	0.20	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nickel	118	13.1	1.00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Selenium	564	136	2.00	1.16 J	0.62 J	0.53 J	0.45 J	0.36 J	0.68 J	0.72 J	0.55 J	0.58 J	0.51 J	0.55 J	0.55 J	0.59 J	0.32 J	BDL
Thallium	N/A	N/A	1.00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	92.7	84.2	1.00	14.0	17.7	17.2	15.0	6.86	17.4	15.2	10.6	8.82	7.56	7.22	9.54	6.54	3.66	BDL
Ammonia*	N/A	N/A	0.03	0.05	0.04	0.03	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.04	0.04	BDL	BDL	BDL
TOC*	N/A	N/A	0.10	13.1	8.99	3.66	2.58	3.88	4.32	5.73	5.36	6.47	7.40	7.90	8.18	8.82	8.16	1.66

Dup = Duplicate Sample  
 BDL = Below Detection Limits  
 \* mg/L  
 \*\* For Saltwater  
 J = Analyte detected below Detection Limit

TABLE 2

CONCENTRATIONS OF DETECTED COMPOUNDS (ug/L)  
ELUTRIATE  
GULF INTRACOASTAL WATERWAY, CORPUS CHRISTI TO PORT ISABEL

Date Sampled: May 26-27, 2004

Parameter	WQS**		Detection Limit	GIC-CBB-		GIC-BBMF-			GIB-PIAC-04			GIB-ACPM-04			GIB-PMMF-04			
	Acute	Chronic		04-23	04-20	03	04	04	09	14	15	02	05	06	07	10	11	
				Dup														
Antimony	N/A	N/A	3.00	1.42 J	3.46	1.87 J	1.46 J	1.39 J	1.51 J	0.97 J	2.79 J	1.99 J	1.47 J	1.64 J	1.35 J	1.10 J	1.03 J	
Arsenic	149	78	1.00	56.4	8.07	5.38	5.98	5.03	17.3	13.7	11.7	12.6	9.27	15.1	21.7	15.3	13.0	
Cadmium	45.4	10	1.00	0.53 J	0.48 J	0.41 J	0.56 J	0.66 J	0.63 J	0.64 J	0.46 J	0.67 J	0.50 J	0.85 J	0.64 J	0.74 J	0.65 J	
Copper	13.5	3.60	1.00	1.41	0.95 J	1.05	0.37 J	0.34 J	0.50 J	0.40 J	0.49 J	0.62 J	0.63 J	0.65 J	BDL	0.36 J	0.38 J	
Lead	133	5.3	1.00	BDL	0.40 J	0.33 J	0.43 J	BDL	0.31 J	BDL	BDL	BDL	BDL	0.40 J	BDL	BDL	0.30 J	
Mercury	2.1	1.1	0.20	BDL	BDL	BDL	BDL	0.76	BDL	BDL	BDL	BDL	BDL	0.74	BDL	BDL	0.49	
Nickel	118	13.1	1.00	0.23 J	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	
Selenium	564	136	2.00	0.45 J	0.46 J	0.50 J	0.20 J	0.26 J	0.48 J	0.48 J	0.52 J	0.76 J	0.35 J	0.37 J	0.46 J	0.35 J	0.35 J	
Thallium	N/A	N/A	1.00	BDL	BDL	BDL	BDL	0.16 J	BDL	BDL	BDL	BDL	0.13 J	BDL	0.14 J	BDL	BDL	
Zinc	92.7	84.2	1.00	8.07	5.80	7.11	5.22	5.51	6.63	8.12	7.94	6.23	4.16	5.79	4.18	6.43	7.60	
Ammonia*	N/A	N/A	0.03	5.25	1.19	0.79	2.57	1.72	8.92	5.25	4.70	3.99	1.60	3.54	4.50	2.41	2.97	
TOC*	N/A	N/A	0.10	12.9	11.2	5.16	4.05	3.35	6.08	6.80	8.17	9.53	10.3	7.44	8.06	9.08	9.18	

Dup = Duplicate Sample

BDL = Below Detection Limits

\* mg/L

\*\* For Saltwater

J = Analyte detected below Detection Limit

TABLE 3

CONCENTRATIONS OF DETECTED COMPOUNDS (dry weight)  
SEDIMENT  
GULF INTRACOASTAL WATERWAY, CORPUS CHRISTI TO PORT ISABEL

Date Sampled: May 26-27, 2004

Parameter	Units	NOAA ERL	Detection Limit	GIC-CBB-	GIC-BBMF-	GIB-PIAC-04		GIB-ACPM-04			GIB-PMMF-04						PA217	REF-217		
				04-23	04-20	03	04	04 Dup	09	14	15	02	05	06	07	10			11	
Antimony	mg/kg	N/A	2.5	0.70 J	0.24 J	0.21 J	BDL	BDL	BDL	BDL	BDL	0.62 J	0.30 J	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Arsenic	mg/kg	8.20	0.30	15.7	2.45	4.26	6.17	6.78	6.0	6.84	7.25	7.15	4.35	7.13	6.84	7.51	7.87	2.30	2.65	
Beryllium	mg/kg	N/A	1.00	0.90 J	0.17 J	0.43 J	0.61 J	0.60 J	0.65 J	0.80 J	0.74 J	0.96 J	0.45 J	0.95 J	0.84 J	0.92 J	0.94 J	0.13 J	0.15 J	
Cadmium	mg/kg	1.20	0.10	0.55	BDL	0.12 J	0.17	0.60 J	0.18	0.22	0.18	BDL	BDL	BDL						
Chromium, Total	mg/kg	81.0	1.00	15.8	2.48	5.96	8.76	10.0	8.85	12.4	11.9	13.7	7.53	13.9	14.3	14.2	14.4	2.39	2.84	
Chromium III	mg/kg	N/A	1.00	15.8	2.48	5.96	8.76	10.0	8.85	12.4	11.9	13.7	7.53	13.9	14.3	14.2	14.4	2.39	2.84	
Copper	mg/kg	34.0	1.00	16.0	2.25	5.56	7.48	8.45	8.95	10.6	10.5	11.4	5.42	11.3	11.7	11.7	11.8	1.93	2.11	
Lead	mg/kg	46.7	0.30	20.4	3.06	7.88	10.7	11.5	9.92	13.9	13.4	14.5	8.45	14.6	15.2	15.4	15.6	3.59	3.96	
Nickel	mg/kg	20.9	0.50	13.3	2.16	6.27	9.46	10.6	10.0	13.4	12.2	13.6	7.29	13.2	13.7	13.1	13.9	3.04	2.97	
Selenium	mg/kg	N/A	0.50	1.00	0.15 J	0.09 J	0.22 J	0.21	0.34 J	0.42 J	0.52	0.38 J	0.24 J	0.46 J	0.55	0.58	0.53	0.12 J	0.12 J	
Silver	mg/kg	1.00	0.20	0.20	BDL	BDL	0.04 J	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Thallium	mg/kg	N/A	0.20	1.10	0.20	0.18 J	0.20	0.16 J	0.23	0.26	0.25	0.24	16.0 J	0.21	0.22	0.23	0.25	0.06 J	0.09 J	
Zinc	mg/kg	150	2.00	36.4	5.75	11.5	15.9	15.8	16.9	22.8	21.3	22.6	11.2	24.5	24.9	24.5	25.7	3.62	4.19	
Ammonia	mg/kg	N/A	0.10	740	16.3	33.3	148	111	438	350	389	349	84.5	421	465	325	401	38.1	18.0	
TOC	%	N/A	0.1	5.50	0.73	0.89	0.94	3.00	2.04	2.60	2.36	2.77	2.90	2.77	2.96	3.08	2.71	1.14	2.31	
Percent Solids	%	N/A	0.10	20.0	65.9	67.0	45.8	43.6	38.3	31.2	32.6	29.2	50.8	28.5	27.3	26.0	24.4	74.8	74.0	
Gravel	%	N/A	N/A	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	3.90	0.40	
Sand	%	N/A	N/A	9.90	68.6	46.2	15.7	13.5	2.40	31.9	4.30	1.20	64.2	2.20	16.5	0.00	0.90	58.3	70.4	
Silt	%	N/A	N/A	68.0	28.4	50.1	76.5	85.3	95.4	63.3	91.1	86.8	32.4	89.3	78.3	90.4	84.6	37.8	29.2	
Clay	%	N/A	N/A	22.1	2.20	3.70	7.80	1.20	2.20	4.80	4.60	12.0	3.00	8.50	5.20	9.60	14.5	0.0	0.00	
D50	mm	N/A	N/A	0.01	0.20	0.07	0.06	0.04	0.04	0.03	0.05	0.01	0.16	0.02	0.01	0.01	0.02	0.15	0.17	

Dup = Duplicate Sample

BDL = Below Detection Limit

J = Analyte detected below Detection Limit

**[TCEQ water quality certification letter will be included in final EA]**

**APPENDIX D**

**HAZARDOUS, TOXIC, AND RADIOACTIVE  
WASTE INVESTIGATION**

## **Vicinity of Port Isabel**

### **Hazardous, Toxic and Radioactive Waste Investigations**

A Hazardous, Toxic, and Radioactive Waste (HTRW) assessment of lands and water resources in and adjacent to the project area was performed by USACE, Galveston District. The objective of this assessment was to identify the existence of potentially hazardous sites or facilities, hazardous contamination, and materials of concern that could impact or be impacted by the proposed project. The HTRW assessment was conducted in general accordance with procedures described in the USACE guidance document ER 1165-2-132, "Water Resources Policies and Authorities-Hazardous, Toxic and Radioactive Waste Guidance for Civil Works Projects" (USACE, 1992, Reference 32), ASTM E 1527-05 Standard Practice for Environmental Site Assessments: Phase I ESA Process, and EPA Standards and Practices for All Appropriate Inquires, 2005. Findings and recommendations presented in this assessment are based on field reconnaissance, interviews, a regulatory agency review, historic archives, and a review of site history through examination of historic aerial photographs. As part of this assessment, a site visit was conducted within the project area. No visual signs of environmental contamination or recognized environmental conditions, including spills or illegal waste disposal, were observed during the site inspection.

Primary data comprising the regulatory agency review were procured from TelALL Corporation of Austin, Texas. The regulatory agency review examined the following databases: National Priority List (NPL); Comprehensive Environmental Response Compensation, and Liability Information System (CERCLIS); No Further Remedial Action Planned (NFRAP); Resource Conservation and Recovery Information System - Treatment, Storage and Disposal Facilities (RCRA TSD); Resource Conservation and Recovery Information System – Corrective Action Sites (RCRA COR); Resource Conservation and Recovery Information System - Large and Small Quantity Generators (RCRA GEN); Emergency Response Notification System (ERNS); State Sites (e.g., Texas Commission on Environmental Quality Voluntary Cleanup Program Site Listing [TXVOL], Innocent Owner/Operator Program [IOP] and State Superfund Sites); City/County Solid Waste Landfills (SWL); Texas Industrial Hazardous Waste Notice of Registration (IHW NOR); Registered Above Ground/Underground Storage Tanks (AST/UST); and, Leaking Underground Storage Tanks (LUST).

A supplemental regulatory agency review was conducted by the Galveston District which examined the following databases: Texas National Resource Information System (TNRIS), which includes oil/gas well and pipeline data from the Texas Railroad Commission, U.S. Environmental Protection Agency's Envirofacts Data Warehouse, and other in-house data archives from the USACE Information Management Office. Although the assessment of oil/gas wells and associated pipelines are not required by USACE guidance (ER 1165-2-132), these sites were investigated in exercising due diligence and prudence regarding potential environmental impacts, relocation issues, or impacts to engineering design and construction activities.

For purposes of data acquisition, the project area was overlain with standard American Society for Testing and Materials search radii (ranging from 0.25 to 1.0-mile) for sites of potential interest. Data searches for sites of interest emanated from a geo-referenced search origin, located within the existing channel centerline of the project area. The regulatory review identified the following sites and environmental incidents, within the project area vicinity.

### Regulatory Agency Review

Regulatory records indicated 6 ERNS incidents (or spills) had occurred within a 0.25-mile radius of the study origin. The locations of these incidents are not geo-referenced so their distance and direction from the search origin are approximations. The incidents occurred in the vicinity of Port Isabel within the areas of Long Island, South Point Marina, the GIWW, the Laguna Madre Channel, and Barrera Docks. The incidents consisted of small quantities of unknown materials spilled on land, and impacts to harbor and waterway areas from unknown sheens, small fuel and oil spills, and a leaking battery.

One registered UST site and 2 LUST sites comprised of multiple tanks which previously stored gasoline and diesel fuel, were identified within 0.25 and 0.50 miles respectively of the project area. One of the LUST sites was associated with the Queens Point Marina and Yacht Club, and the other site was located in the vicinity of Marchans Restaurant, in Port Isabel. Impacts to ground water were reported as part of an incomplete site characterization for both LUST sites. All fuel tanks associated with the sites have been removed from the ground and remedial actions are completed. No ASTs were captured by the regulatory review.

One NFRAP site, associated with Hess Oil and Chemical Corporation, is located within 0.25 miles of the channel centerline. Assessment and remediation of the site has been completed and EPA has determined this site has no further potential for listing on the NPL as a Superfund site.

Finally, 1 IHW-NOR site was identified within 0.25 mile of the project area, at the Milpark Port Isabel Warehouse. This site is currently inactive but was once a large quantity generator of industrial hazardous waste.

With respect to the oil/gas well and pipeline search, a 1.0 mile radius was utilized revealing a total of 6 oil/gas well sites and 2 pipelines within the project area vicinity. The closest oil/gas well to the proposed channel widening area is designated a vertical dry hole and is located at latitude 26.082398 north and longitude 97.193755 west, bearing due east at approximately 1,300 feet from the existing channel centerline. One other oil/gas well is also designated a vertical dry hole and is located on the southeastern corner of PA-241, at latitude 26.046144 north and longitude 97.21043 west. The closest pipeline to the proposed project crosses the GIWW channel at its southern junction with the Brownsville Ship Channel.

### Aerial Photographs

A review of aerial photographs indicated the general project area and adjacent lands, to include the City of Port Isabel (City) and the present-day resort community of Long Island, were still sparsely developed in 1934, and there was no evidence of the Queen Isabella Causeway. By 1955, the City had grown substantially as evidenced by increased roadway infrastructure, and residential and commercial structures. In addition, the Queen Isabella Causeway had been completed connecting Port Isabel to Padre Island, and the adjacent Long Island had substantially increased in area as a result of dredge material placement. From 1986 to 1996, the number of residential and commercial structures appears to have stabilized. However, 2006 photography showed the addition of a large HEB Grocery store, in the southwestern portion of the City. The review of aerial photography did not reveal any additional sites of interest, beyond those identified by the regulatory agency review.

### Impacts

Technical assessments and site investigations conducted to determine the presence of HTRW in or near the proposed project, indicate no sites of concern at or immediately adjacent to the proposed project footprint. Considering the de minimus nature of the spill events to land and water, the removed status of LUSTs, the reported distance of these occurrences from the project area, and the fact that there are no ongoing or planned remedial actions associated with any of these sites, the potential for encountering HTRW is considered low. No other HTRW investigations are warranted at this time.

**APPENDIX E**

**COMPLIANCE WITH THE TEXAS  
COASTAL MANAGEMENT PLAN**

## CONSISTENCY WITH THE TEXAS COASTAL MANAGEMENT PROGRAM

### CHANNEL IMPROVEMENT IN THE VICINITY OF PORT ISABEL

#### INTRODUCTION

The State of Texas submitted the Texas Coastal Management Program (TCMP) to the National Oceanic and Atmospheric Administration for review pursuant to Section 306 of the Federal Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 *et seq.*). The TCMP was approved by the Office of Ocean and Coastal Resource Management in 1996. Federal approval of the TCMP requires that federal actions occurring within the TCMP boundary be consistent, to the maximum extent practicable, with the goals and policies of the TCMP. To show compliance, Federal agencies responsible for these actions must prepare a consistency determination and submit it to the state for review.

This consistency determination for the proposed project is prepared in accordance with the "Texas Coastal Management Program Final Environmental Impact Statement," dated August 1996 (U.S. Department of Commerce, 1996). Details of the proposed project, as well as environmental impacts, are presented in previous sections of this EA and will be referenced in this determination. It is the intent of the Galveston District of the U.S. Army Corps of Engineers that all USACE projects be consistent to the maximum extent practicable with the goals and policies of the Texas Coastal Management Program.

#### IMPACT ON COASTAL NATURAL RESOURCES AREAS

A description of the project, an environmental description of the site, environmental impacts resulting from construction of the project, and results of a cultural resource investigation of the project area are presented in Sections 1.0, 3.0, and 4.0. Several of the Coastal Natural Resources Areas identified in the state program are found in the vicinity of the proposed project. Following are Coastal Natural Resource Areas that are associated with valuable coastal resources or vulnerable or unique coastal areas. Anticipated impacts to these resources from the proposed project and measures to minimize or avoid potential impacts are summarized for each of these resources.

- **Coastal Barriers:** The proposed project is not located within a designated Coastal barrier. The project would not jeopardize the integrity of any coastal barriers or result in adverse impacts.
- **Coastal Historic Areas:** The remnants of the old Queen Isabella Causeway are located adjacent to the proposed project area but the project will not have any impacts on the structure. No other historic properties have been identified in the project area.

- **Coastal Preserves:** There are no state coastal preserves in the project area.
- **Coastal Shore Areas:** This resource area is a strip of land from the high-water mark on coastal beaches to 100 feet inland. None of these resources are located near the project area. The proposed project is located more than 2 miles from the Gulf of Mexico.
- **Coastal Wetlands:** There are no coastal wetlands located in the immediate project area. Consideration of wetlands is described in Sections 3.2 and 4.2. Adverse impacts to wetlands are not anticipated from this project.
- **Critical Dune Areas:** There are no sand dunes located in the project area. No adverse impacts to sand dunes are expected.
- **Critical Erosion Areas:** These areas are designated by the land commissioner. There are no such areas in the project area.
- **Gulf Beaches:** The project is not located on a Gulf beach and would not result in adverse impacts to Gulf beaches.
- **Hard Substrate Reefs:** There are no naturally occurring rock outcrops or reefs occurring in or near the project area.
- **Oyster Reefs:** There are no oyster reefs occurring within or near the project area.
- **Special Hazard Areas:** These are low-lying, flood-prone areas as shown on federal Flood Hazard Boundary Maps or Flood Insurance Rate Maps. The project area is located on the water and in low lying areas in Zones V10 and A8 on the Flood Insurance Rate Map for this area. Therefore, the area is considered a special hazard area. However, the proposed project would not induce increased flooding in developed areas and would not contribute to increased future flood damages in the region.
- **Submerged Lands:** The proposed channel widening is located within the Laguna Madre, which is submerged land. The shallow waters east of USACE Placement Area (PA) 240, into which sediment from effluent produced by the placement of new work material from channel widening is anticipated to deposit, is also submerged lands. The impacts from these proposed activities are described in Section 4.0. Adverse impacts to submerged lands are not anticipated.
- **Submerged Aquatic Vegetation:** Seagrasses are present in the proposed project area. It is expected that there will be some extent of sediment deposition on seagrasses to in the shallow waters to the east of PA 240. However, these impacts

will be consistent with previously authorized semi-confined placement practices for this placement area and are anticipated to be minor impacts.

- **Tidal Sand or Mud Flats:** A tidal sand/mud flat is located immediately east of PA 240 on the sediment fan created by the disposal of dredged material in this semi-confined disposal area. It is expected that additional material would deposit on this area during the placement of material from the proposed widening of the channel. It is expected that the location of the tidal area may shift as material is deposited but that there would not be a significant net change in the amount of tidal sand/mud flats.
- **Waters of the Open Gulf of Mexico:** The proposed project is not located on the Gulf of Mexico and would not result in any impacts to this resource.
- **Waters Under Tidal Influence:** The proposed project is located in open water that is influenced by tides. Construction and maintenance activities would temporarily release suspended solids in the area. These impacts would cease once these activities are completed. This impact is described in the Section 4.0 and judged to be minor and of short duration.

## COMPLIANCE WITH GOALS AND POLICIES

The following goals and policies of the TCMP were reviewed for compliance.

- Section 501.23: Development in Critical Areas
- Section 501.26: Construction in The Beach/Dune System
- Section 501.15: Policy for Major Actions

### Compliance with Section 501.23: Development in Critical Areas

The proposed project would not result in adverse impacts to any of these critical areas. The project would increase navigation safety on an existing federal channel and would not promote new development in critical areas. Sections 1.0, 3.0, and 4.0 of the EA demonstrate that the project complies with Section 501.23.

### Compliance with Section 501.26: Construction in The Beach/Dune System

The proposed project is not located in within any beach or dune systems and would not have any impact on these resources.

Compliance with Section 501.15: Policy for Major Actions

In its Environmental Assessment, USACE determined that the proposed project will not result in significant impacts to the environment and that an Environmental Impact Statement is not necessary. Therefore, the proposed action is not a major federal action as defined in the TCMP and is in compliance with Section 501.15.

## **APPENDIX F**

### **ENDANGERED SPECIES COORDINATION, BIOLOGICAL ASSESSMENT, AND STATE-LISTED RARE SPECIES**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553-1229

December 11, 2007

Environmental Section

David M. Bernhart  
Assistant RA for Protected Resources  
Southeast Regional Office  
National Marine Fisheries Service  
263 13th Avenue South  
St. Petersburg, FL 33701

Dear Mr. Bernhart:

This letter concerns a current feasibility study for potential navigation improvements along the Gulf Intracoastal Waterway (GIWW) in the vicinity of Port Isabel, the Queen Isabella Memorial Bridge and the Brownsville Ship Channel in Cameron County, Texas. The prospective work addressed in the study, which would be performed in the area depicted on the enclosed figure, is expected to address navigation safety issues along the bend in the GIWW at this location.

To facilitate compliance with the requirements of Section 7, subsection (a)(2) of the Endangered Species Act Amendments of 1978, I am requesting a list of any species that are listed or proposed to be listed that may be present in the area of the proposed action.

If you or your staff have any questions regarding this activity, please contact Steve Ireland at (409) 766-3131.

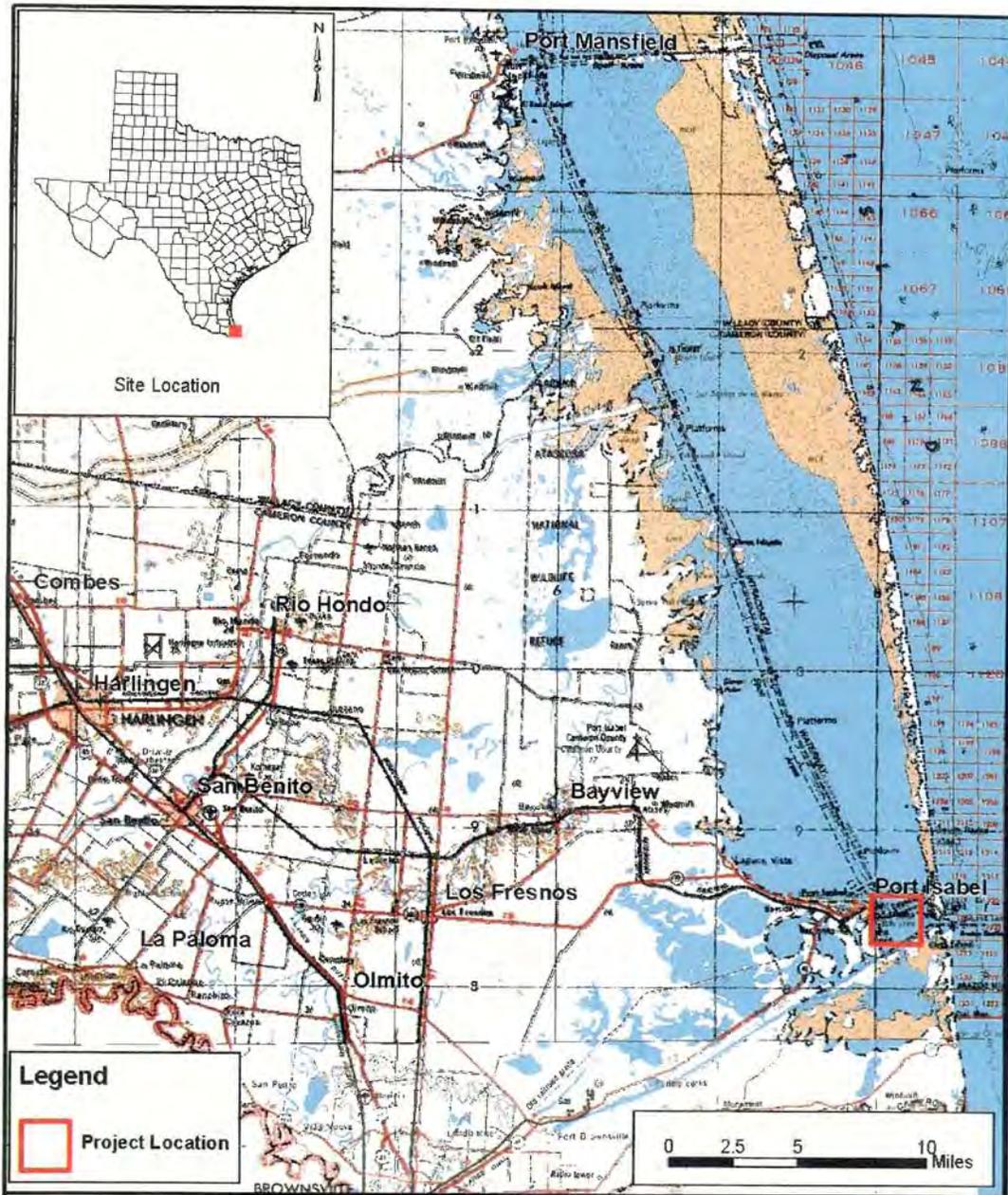
Sincerely,

A handwritten signature in blue ink that reads "Carolyn Murphy".

Carolyn Murphy  
Chief, Environmental Section

CF:

Mr. Rusty Swafford  
National Marine Fisheries Service  
Habitat Conservation Division  
4700 Avenue U  
Galveston, Texas 77551



**PROJECT LOCATION MAP**  
 GIWW at Port Isabel, Texas  
 Navigation Improvement Reconnaissance  
 Report Section 905(b) Analysis  
 USGS 7.5' Series Port Isabel (1997) Quadrangles

Figure: 1
Date: August 2003
Scale: 1:329,000
Source: USGS/GEC



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553-1229

December 11, 2007

Environmental Section

Mr. Steve Parris  
Field Supervisor  
U.S. Fish and Wildlife Service  
17629 El Camino Real, Suite 211  
Houston, Texas 77058

Dear Mr. Parris:

This letter concerns a current feasibility study for potential navigation improvements along the Gulf Intracoastal Waterway (GIWW) in the vicinity of Port Isabel, the Queen Isabella Memorial Bridge and the Brownsville Ship Channel in Cameron County, Texas. The prospective work addressed in the study, which would be performed in the area depicted on the enclosed figure, is expected to address navigation safety issues along the bend in the GIWW at this location.

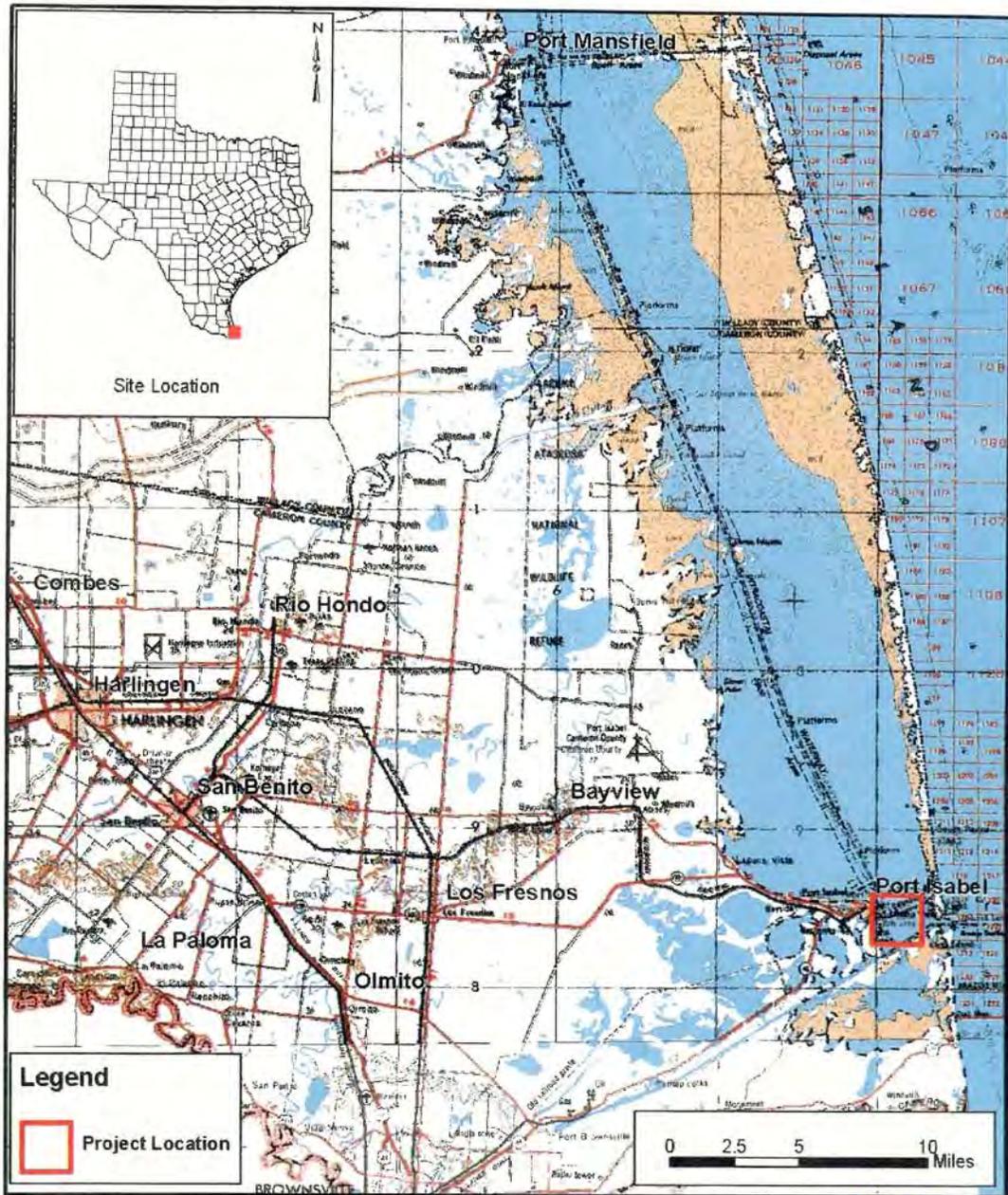
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If you or your staff have any questions regarding this activity, please contact Steve Ireland at (409) 766-3131.

Sincerely,

A handwritten signature in cursive script that reads "Carolyn Murphy".

Carolyn Murphy  
Chief, Environmental Section



**PROJECT LOCATION MAP**  
 GIWW at Port Isabel, Texas  
 Navigation Improvement Reconnaissance  
 Report Section 905(b) Analysis  
 USGS 7.5' Series Port Isabel (1997) Quadrangles

  
 Figure 1  
 Date: August 2003  
 Scale: 1:329,000  
 Source: USGS/GEC



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
263 13<sup>th</sup> Ave. South  
St. Petersburg, FL 33701  
(727) 824-5312, FAX (727) 824-5309  
<http://sero.nmfs.noaa.gov>

DEC 19 2007

F/SER3:TM

Ms. Carolyn Murphy, Chief  
Environmental Section  
Department of the Army  
Galveston District, Corps of Engineers  
P.O. Box 1229  
Galveston, TX 77553-1229

Dear Ms. Murphy:

This correspondence responds to the Department of the Army's letter dated December 11, 2007, regarding a current feasibility study for potential navigation improvements along the Gulf Intracoastal Waterway in the vicinity of Port Isabel, the Queen Isabella Memorial Bridge, and the Brownsville Ship Channel in Cameron County, Texas.

As requested, enclosed is a list of federally-protected species under the jurisdiction of the National Marine Fisheries Service for the state of Texas.

We look forward to continued cooperation with the Army in conserving our endangered and threatened species resources. If you have any questions, please contact Mr. Robert Hoffman, fishery biologist, at (727) 824-5312, or by e-mail at [Robert.Hoffman@noaa.gov](mailto:Robert.Hoffman@noaa.gov).

Sincerely,

David M. Bernhart  
Assistant Regional Administrator  
for Protected Resources

Enclosure

File: 1514-22.F.1.TX





Endangered and Threatened Species and Critical Habitats  
under the Jurisdiction of the NOAA Fisheries Service



**Texas**

Listed Species	Scientific Name	Status	Date Listed
<b>Marine Mammals</b>			
blue whale	<i>Balaenoptera musculus</i>	Endangered	12/02/70
finback whale	<i>Balaenoptera physalus</i>	Endangered	12/02/70
humpback whale	<i>Megaptera novaengliae</i>	Endangered	12/02/70
sei whale	<i>Balaenoptera borealis</i>	Endangered	12/02/70
sperm whale	<i>Physeter macrocephalus</i>	Endangered	12/02/70
<b>Turtles</b>			
green sea turtle	<i>Chelonia mydas</i>	Threatened <sup>1</sup>	07/28/78
hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	06/02/70
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	12/02/70
leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	06/02/70
loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	07/28/78
<b>Fish</b>			
smalltooth sawfish	<i>Pristis pectinata</i>	Endangered	04/01/03

**Designated Critical Habitat**  
None

**Species Proposed for Listing**  
None

**Proposed Critical Habitat**  
None

<sup>1</sup> Green turtles are listed as threatened, except for breeding populations of green turtles in Florida and on the Pacific Coast of Mexico, which are listed as endangered



## Texas

Candidate Species <sup>2</sup>	Scientific Name
none	

Species of Concern <sup>3</sup>	Scientific Name
<b>Fish</b>	
dusky shark	<i>Carcharhinus obscurus</i>
largetooth sawfish	<i>Pristis pristis</i>
night shark	<i>Carcharhinus signatus</i>
saltmarsh topminnow	<i>Fundulus jenkinsi</i>
sand tiger shark	<i>Carcharias taurus</i>
speckled hind	<i>Epinephelus drummondhayi</i>
Warsaw grouper	<i>Epinephelus nigritus</i>
white marlin	<i>Tetrapturus albidus</i>
<b>Invertebrates</b>	
ivory bush coral	<i>Oculina varicosa</i>

<sup>2</sup> The Candidate Species List has been renamed the Species of Concern List. The term "candidate species" is limited to species that are the subject of a petition to list and for which NOAA Fisheries Service has determined that listing may be warranted (69 FR 19975).

<sup>3</sup> Species of Concern are not protected under the Endangered Species Act, but concerns about their status indicate that they may warrant listing in the future. Federal agencies and the public are encouraged to consider these species during project planning so that future listings may be avoided.



**United States Department of the Interior  
FISH AND WILDLIFE SERVICE**

Ecological Services - LRGV Sub Office  
Phone: (956) 784-7560 Fax: (956) 787-0547  
Rt. 2 Box 202-A  
Alamo, TX 78516  
January 18, 2008

Carolyn Murphy  
Chief, Environmental Section  
US Army, Galveston District, Corps of Engineers  
PO Box 1229  
Galveston, TX 77553-1229

Re: Consultation No.: 21410-2008-TA-0108

Dear Ms. Murphy;

This responds to your letter received in this office requesting the U.S. Fish and Wildlife Service (Service) provide information and a species list concerning a feasibility study for potential navigation improvements along the Gulf Intracoastal Water Way (GIWW) in the vicinity of Port Isabel, Queen Isabella Memorial Bridge, and the Port of Brownsville. The prospective work is expected to address navigation safety issues along the bend in the GIWW at this location.

Under Section 7(a)(2) of the Endangered Species Act (ESA), the federal action agency, US Army Corps of Engineers (USCOE), is responsible for determining the effects of these actions on listed species or critical habitat (50 CFR § 402.14 [a]) and is ultimately responsible for section 7 obligations. Non-federal representatives (i.e. consultants, state agencies, county or local officials) may request and receive species lists, prepare environmental documents, biological assessments, and provide information for formal consultations. After evaluating the potential for effect, one of the following determinations is made by the federal action agency.

**No effect** – the action agency determines its proposed action will not affect federally listed species or critical habitat. No section 7 consultation is necessary and the Service believes the agency has complied with Section 7(a)(2) of the ESA by making the determination. However, if the project changes or additional information on the distribution of listed or proposed species becomes available the project should be reanalyzed for effects not previously considered.

**Is not likely to adversely effect** – the action agency determines their project may affect listed species and or critical habitat, however, the effects are expected to be discountable, or insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The action agency should seek written concurrence from the Service that adverse effects have been eliminated. If agreement cannot be reached the agency is advised to initiate formal consultation.

**Is likely to adversely affect** – the action agency determines adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires formal section 7 consultation.

The Service recommends the action agency maintain a complete record of evaluation for all determinations, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles. The Service's Consultation Handbook is available online (<http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm>) for further information on definitions and process.

#### Federally Listed Species

We have enclosed a list of federally listed or proposed threatened and endangered species that have been documented or are known to occur in Cameron County. Species information may be obtained at <http://fw2es.fws.gov/endangeredspecies/lists/>. The species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in a take of a federally listed species. A take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if it would result in the death or injury of wildlife by removing essential habitat components or impairing essential behavior patterns, including breeding, feeding or sheltering.

#### Section 7

Section 7 of the Endangered Species Act (ESA) requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. *It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species.* If a "may affect" determination is made, the Federal agency shall initiate the formal section 7 consultation process by writing to: Field Supervisor; U.S. Fish and Wildlife Service; c/o TAMU-CC, Campus Box 338; 6300 Ocean Drive; Corpus Christi, Texas 78412. If no effect is evident, no further consultation is needed; however, we would appreciate the opportunity to review the criteria used to arrive at that determination.

#### Section 10

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a Section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at <http://endangered.fws.gov/hcp/hcpbook.html>.

#### State Listed Species

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), Fountain Park Plaza Building, Suite 100, 3000 South IH-35, Austin, Texas 78704 (telephone 512/912-7011) for information concerning fish, wildlife, and plants of State concern or visit their website at <http://www.tpwd.state.tx.us/nature/endang/animals/mammals/>.

#### Migratory Birds

The Migratory Bird Treaty Act implements various treaties and conventions for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests or eggs. If project activities must be conducted during this time, we recommend surveying for nest prior to commencing work. If a nest is found, and if possible, the Service recommends a buffer of vegetation ( $\geq 25$  ft) remain around the nest until young have fledged or the nest is abandoned. A list of migratory birds may be viewed at <http://migratorybirds.fws.gov/intrnltr/mbta/proposedbirdlist.pdf>.

#### Wetlands

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provide food and cover for wildlife, stabilize banks and decrease soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils. No permanent structures should be placed in the 100-year floodplain.

#### Beneficial Landscaping

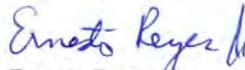
In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs and herbaceous species that are adaptable, drought tolerant and conserve water.

#### Service Response

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

As stated above, a list of federally designated endangered and threatened species that occur in Cameron County is enclosed. If we can be of further assistance, please contact Brunilda Fuentes-Capozello (956-784-7631) or Ernesto Reyes, Jr. on this letterhead.

Sincerely,



Ernesto Reyes, Jr.  
Fish & Wildlife Biologist

For  
Allan M. Strand  
Field Supervisor

cc: Field Supervisor, U.S. Fish and Wildlife Service, Corpus Christi, TX

Federally Listed as Threatened and Endangered Species of  
Corpus Christi Ecological Services Field Office  
Area of Responsibility  
April 7, 2004

**DISCLAIMER**

County-by-County lists containing species information is available at the U.S. Fish and Wildlife Service's (Service), Southwest Region, web site <http://ifw2es.fws.gov/endangeredspecies/lists/>. This list is based on information available to the Service at the time of preparation. This list is subject to change, without notice, as new biological information is gathered and should not be used as the sole source for identifying species that may be impacted by a project.

Candidate Species and Species of Concern currently have no legal protection under the Endangered Species Act. However, they may be protected under other Federal and/or State laws. If you find you have potential project impacts to these species the Service would like to provide technical assistance to help avoid or minimize adverse effects. Addressing these species at this stage could better provide for overall ecosystem health in the local area and may avert potential future listing.

**Migratory Species Common to many or all Counties:** Statewide or area-wide migrants are not included by county, except where they breed or occur in concentrations. Species listed specifically in a county have confirmed sightings. If a species is not listed they may occur as migrants in those counties.

Least tern	(E ~)	<i>Sterna antillarum</i>
Whooping crane	(E w/CH)	<i>Grus americana</i>
Piping plover	(T w/CH)	<i>Charadrius melodus</i>
Loggerhead shrike	(SOC)	<i>Lanius ludovicianus</i>
White-faced ibis	(SOC)	<i>Plegadis chihi</i>
<b>Cameron County</b>		
Gulf Coast jaguarundi	(E)	<i>Herpailurus yagouaroundi cacomitli</i>
Ocelot	(E)	<i>Leopardus pardalis</i>
Brown pelican	(E)	<i>Pelecanus occidentalis</i>
Northern aplomado falcon	(E)	<i>Falco femoralis septentrionalis</i>
Hawksbill sea turtle	(E w/CH‡)	<i>Eretmochelys imbricata</i>
Kemp's Ridley sea turtle	(E)	<i>Lepidochelys kempii</i>
Leatherback sea turtle	(E w/CH‡)	<i>Dermochelys coriacea</i>
South Texas ambrosia	(E)	<i>Ambrosia cheiranthifolia</i>
Star cactus	(E)	<i>Astrophytum (=Echinocactus) asterias</i>
Texas ayenia	(E)	<i>Ayenia limitaris</i>
Bald eagle	(T)	<i>Haliaeetus leucocephalus</i>
Piping plover	(T w/CH)	<i>Charadrius melodus</i>
Green sea turtle	(T w/CH‡)	<i>Chelonia mydas</i>
Loggerhead sea turtle	(T)	<i>Caretta caretta</i>
American alligator	(TSA)	<i>Alligator mississippiensis</i>
Audubon's oriole	(SOC)	<i>Icterus graduacauda audubonii</i>
Black tern	(SOC)	<i>Chlidonias niger</i>
Brownsville common yellowthroat	(SOC)	<i>Geothlypis trichas insperata</i>

Cerulean warbler	(SOC)	<i>Dendroica cerulea</i>
Ferruginous hawk	(SOC)	<i>Buteo regalis</i>
Loggerhead shrike	(SOC)	<i>Lanius ludovicianus</i>
Northern gray hawk	(SOC)	<i>Buteo nitidus maximus</i>
Reddish egret	(SOC)	<i>Egretta rufescens</i>
Sennett's hooded oriole	(SOC)	<i>Icterus cucullatus sennetti</i>
Texas Botteri's sparrow	(SOC)	<i>Aimophila botterii texana</i>
Texas olive sparrow	(SOC)	<i>Arremonops rufivirgatus rufivirgatus</i>
Tropical parula	(SOC)	<i>Parula pitiauyumi nigrilora</i>
White-faced ibis	(SOC)	<i>Plegadis chihi</i>
Coues' rice rat	(SOC)	<i>Oryzomys couesi aquaticus</i>
Texas horned lizard	(SOC)	<i>Phrynosoma cornutum</i>
Black-spotted newt	(SOC)	<i>Notophthalmus meridionalis</i>
Rio Grande lesser siren	(SOC)	<i>Siren intermedia texana</i>
Bailey's ballmoss	(SOC)	<i>Tillandsia baileyi</i>
Lilia de los llanos	(SOC)	<i>Echeandia chandleri</i>
Marshelder (slender) dodder	(SOC)	<i>Cuscuta attenuata</i>
Runyon huaco	(SOC)	<i>Manfreda longiflora</i>
Runyon's water-willow	(SOC)	<i>Justicia runyonii</i>
Short-fruited spikerush	(SOC)	<i>Eleocharis brachycarpa</i>

## INDEX

E	=	Species in danger of extinction throughout all or a significant portion of its range.
T	=	Species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
C	=	Species for which the Service has on file enough substantial information to warrant listing as threatened or endangered.
CH	=	Critical Habitat (in Texas unless annotated ‡)
P/	=	Proposed ...
P/E	=	Species proposed to be listed as endangered.
P/T	=	Species proposed to be listed as threatened.
TSA	=	Threatened due to similarity of appearance.
SOC	=	Species for which there is some information showing evidence of vulnerability, but not enough data to support listing at this time.
G	=	with special rule
‡	=	CH designated (or proposed) outside Texas
~	=	Protection restricted to populations found in the "interior" of the United States. In Texas, the least tern receives full protection, except within 50 miles (80 km) of the Gulf Coast.

**BIOLOGICAL ASSESSMENT  
FOR FEDERALLY-LISTED  
THREATENED AND ENDANGERED SPECIES**

**CHANNEL IMPROVEMENT IN THE VICINITY OF PORT ISABEL  
GULF INTRACOASTAL WATERWAY  
CAMERON COUNTY, TEXAS**

**1.0 INTRODUCTION**

**1.1 PURPOSE OF THE BIOLOGICAL ASSESSMENT**

This Biological Assessment (BA) is being prepared to fulfill the U.S. Army Corps of Engineers' (USACE) obligations under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. It is also being prepared to assist the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) in fulfilling their obligations under the ESA. The proposed Federal action is the widening the bend in the Gulf Intracoastal Waterway (GIWW) in the vicinity of Port Isabel, Texas between the Queen Isabella Memorial Bridge (QIM Bridge; formerly known as the Queen Isabella Causeway) and the Long Island swing bridge (Figure 1). The project would improve navigation safety in this section of the GIWW by providing a wider area for barges to set up for passage through the narrow channel under the two bridges. This BA addresses the project's potential to affect federally-listed threatened and endangered species and species of concern.

**1.2 DESCRIPTION OF THE PROPOSED PROJECT**

The proposed action is the widening the GIWW channel along the bend between the QIM Bridge and the Long Island swing bridge and installing a current/tide meter(s) at the QIM Bridge (Figure 2). The outside bend would be widened by 125 feet, transitioning from the existing 275-foot width to a 400-foot width, with a side slope of 1:3 (vertical to horizontal). The channel's 12-foot project depth would be maintained. Approximately 40,000 cubic yards of material would be dredged from the bay bottom using a hydraulic pipeline dredge. Two feet of advanced maintenance dredging would be done during the widening, which, along with an overdraft allowance of 2 feet, would result in an initial channel depth of 14 to 16 feet after dredging. The current/tide meter would provide real-time water current and tide information to vessel operators transiting the bend reach of the GIWW.

The dredged material would be pumped via dredge pipeline into USACE Placement Area (PA) 240, which is located on the eastern end of Long Island, immediately to the south of the channel bend (see Figure 2). PA 240 is an existing semi-confined placement area. A levee surrounds most of the PA and a rock weir is located at the lower, east end of the PA. Dredged material would be pumped into the upper, western portions of the PA and would flow toward the lower, eastern end. Most of the material would settle out as it flows toward the weir but some

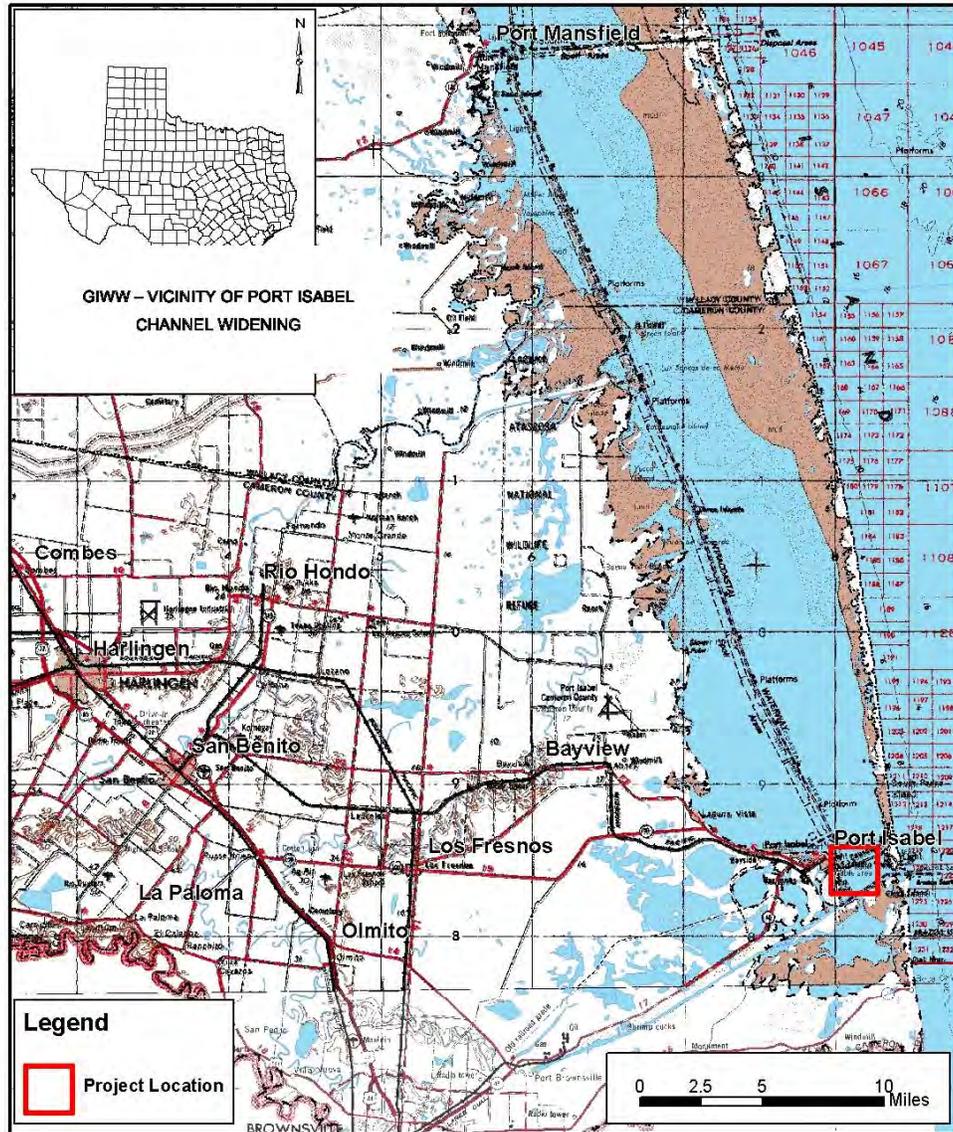


Figure 1 – Project Location



Figure 2 – Proposed Work

would overflow the weir with the return water and settle in the shallow water immediately to the east of the PA. The dredged material from the channel widening would utilize the remaining capacity of PA 240. Therefore, future maintenance dredged material from the bend reach of the GIWW would be pumped to PA 241, which is a confined, upland disposal area located west of the GIWW at its confluence with the Brownsville Ship Channel.

**2.0 FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONCERN**

Table 1 includes the list of threatened and endangered species and species of concern considered by the USFWS and the NMFS to occur in Texas and/or Cameron County.

**Table 1 - List of Threatened and Endangered Species and Species of Concern**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Listing Status</b>
<b>BIRDS</b>		
Brown pelican	<i>Pelecanus occidentalis</i>	Endangered
Piping plover	<i>Charadrius melodus</i>	Threatened
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	Endangered
<b>REPTILES</b>		
Green sea turtle	<i>Chelonia mydas</i>	Threatened
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
Kemp's Ridley sea turtle	<i>Lepidochelys kempi</i>	Endangered
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
<b>TERRESTRIAL MAMMALS</b>		
Gulf coast jaguarundi	<i>Herpailurus yagouaroundi cacomitli</i>	Endangered
Ocelot	<i>Leopardus pardalis</i>	Endangered
<b>MARINE MAMMALS</b>		
Blue whale	<i>Balaenoptera musculus</i>	Endangered
Finback whale	<i>Balaenoptera physalus</i>	Endangered
Humpback whale	<i>Megaptera novaengliae</i>	Endangered
Sei whale	<i>Balaenoptera borealis</i>	Endangered
Sperm whale	<i>Physeter macrocephalus</i>	Endangered
West Indian manatee	<i>Trichechus manatus</i>	Endangered
<b>FISH</b>		
Dusky shark	<i>Carcharhinus obscurus</i>	Species of Concern
Largetooth sawfish	<i>Pristis pristis</i>	Species of Concern
Night shark	<i>Carcharhinus signatus</i>	Species of Concern
Saltmarsh topminnow	<i>Fundulus jenkinsi</i>	Species of Concern
Sand tiger shark	<i>Carcharias taurus</i>	Species of Concern
Smalltooth sawfish	<i>Pristis pectinata</i>	Endangered
Speckled hind	<i>Epinephelus drummondhayi</i>	Species of Concern
Warsaw grouper	<i>Epinephelus nigritus</i>	Species of Concern
White marlin	<i>Tetrapturus albidus</i>	Species of Concern
<b>INVERTEBRATES</b>		
Ivory bush coral	<i>Oculina varicosa</i>	Species of Concern
<b>PLANTS</b>		
South Texas ambrosia	<i>Ambrosia cheiranthifolia</i>	Species of Concern
Texas ayenia	<i>Ayenia limitaris</i>	Species of Concern

## 2.1 BROWN PELICAN

The brown pelican almost completely disappeared from the Texas coast by the 1960's, largely due to the use of agricultural pesticides that bio-accumulate in the marine food chain and cause reproductive failure (King et al. 1977; Schreiber 1980). Since then, the use of chlorinated hydrocarbons for pest control has declined and the brown pelican has slowly recovered and spread through its original range. After years of unsuccessful nesting attempts in the Matagorda Bay area, nesting activity has been on the increase since the late 1980's. It is now common along the Texas coast and it nests on isolated islands from the southern tip of Texas to Galveston Bay. This species is a common resident of the project area.

## 2.2 PIPING PLOVER

The piping plover is listed as a threatened species in coastal Texas. An inhabitant of coastal beaches and tidal flats, the piping plover is a regular migrant along the Texas coast, where it may also overwinter (Oberholser 1974; Haig and Oring 1985, 1988; Haig et al. 1988). Piping plovers feed in moist sand along beaches and sand-mud flats around inlets and estuaries (Chapman 1984). The two major populations now winter along North and South Padre Island and Bolivar Flats in Texas (50 FR 50726 (1985)); Haig and Oring 1985). Their habitat includes intertidal sand and mud flats with no or very sparse emergent vegetation for feeding, un-vegetated or sparsely vegetated sand and mud flats above high tide for roosting, and sand spits running into the Laguna Madre for foraging and roosting (50 FR 23476 (2009)). Designated critical habitat for wintering piping plover is located close to the project site. Critical Habitat Unit TX-2 is located to the east of the project site, along the Laguna Madre on the west shoreline of South Padre Island, straddling the eastern approach of the QIM Bridge. Unit TX-3B is located immediately south of the project site, south of the Brownsville Ship Channel. Therefore, the presence of piping plover is likely in the project area, particularly during the overwintering period.

## 2.3 NORTHERN APLOMADO FALCON

This falcon species is found in open country, especially savanna and open woodland, and sometimes in very barren areas (TPWD 2009). It also occurs on grassy plains and valleys with scattered mesquite, yucca, and cactus. Since this type of habitat is absent in the project area, this species is unlikely to be encountered in the project area.

## 2.4 GREEN SEA TURTLE

Adult green sea turtles are herbivorous, feeding primarily on seagrasses and algae (NMFS 2007a). The green sea turtle was historically the most abundant sea turtle in Texas (Hildebrand 1982). Overfishing brought about a rapid decline, although this species can still be found on the seagrass meadows of the lower Laguna Madre (Rabalais and Rabalais, 1980; Withers 2002). Since this species is known to be a resident in the Lower Laguna Madre, it is likely that this species could be encountered in the project area.

## 2.5 HAWKSBILL SEA TURTLE

Hawksbill turtles are most commonly associated with coral reef habitats (NMFS 2007b). Texas and Florida are the only continental U.S. states where hawksbills are sighted with any regularity. Most sightings involve post-hatchlings and juveniles, which are believed to originate from nesting beaches in Mexico. Adults are extremely rare, and Hildebrand (1983) believes that the hawksbills occurring in Texas waters are strays. Due to the lack of preferred habitat along the Texas coast and the absence of nesting in Texas, it is not likely that this species would occur in the project area.

## 2.6 KEMP'S RIDLEY SEA TURTLE

The only endangered sea turtle that might be expected to use the Matagorda Bay System is the Kemp's Ridley sea turtle, the rarest sea turtle in the world. Only juveniles are expected in the bays, as adults seem confined to the Gulf. Distribution appears closely related to the abundance of seagrass beds and blue crabs, a favorite food item (Lutcavage and Musick 1985). Only one major nesting colony exists, located on an 11-mile stretch of coastline near Rancho Nuevo in Tamaulipas, Mexico, some 186 miles south of the Rio Grande. A secondary nesting population has been established on Padre Island National Seashore (TPWD 2007a). In recent years, there has been an increase in the number of Kemp's Ridley nests reported along the Texas coast. During the 2009 nesting season, as of July 1, there have been reports of 187 nests found at 17 localities, from Bolivar Peninsula to Boca Chica Beach, with the majority of nests reported on nearby South Padre Island and Padre Island National Seashore (NPS 2009). It is therefore possible that this species could occur at the project site, particularly during nesting season.

## 2.7 LEATHERBACK SEA TURTLE

The leatherback sea turtle is a highly pelagic species, tending to keep to deeper offshore waters, where it feeds mainly on jellyfish and tunicates (TPWD 2007b). It is rare along the Texas coast. Due to its rarity in this area, it is not likely to occur in the project area.

## 2.8 LOGGERHEAD SEA TURTLE

Loggerhead sea turtles are capable of living in a variety of environments, such as in brackish waters of coastal lagoons, river mouths, and tropical and temperate waters above 50 degrees Fahrenheit (TPWD 2007c). They are found worldwide. The major nesting beaches are located in the southeastern United States, primarily along the Atlantic coast of Florida, North Carolina, South Carolina, and Georgia. In Texas, they are found in the Gulf of Mexico and are occasional visitors to the Texas coast. Only minor and solitary nesting has been recorded along the coasts of the Gulf of Mexico. Although the major nesting concentrations in the United States are found in South Florida, loggerheads nest from Texas to Virginia (USFWS 2007). This species has been documented in the Lower Laguna Madre (Withers 2009). Therefore, there is potential for this species to occur at the project site.

## 2.9 GULF COAST JAGUARONDI

These cats live in thick brushlands, favoring areas near water (TPWD 2009). Due to lack of suitable habitat in the project area, it is extremely unlikely that this species would be encountered in the proposed project area.

## 2.10 OCELOT

This cat species has similar habitat requirements as the jaguarondi. It is found in dense chaparral thickets, mesquite-thorn scrub and live oak mottes, and it avoids open areas (TPWD 2009). Like the jaguarondi, it is extremely unlikely to be encountered in the proposed project area.

## 2.11 WHALE SPECIES

The five species of whales listed by the NMFS are known to occur in the Gulf of Mexico off the Texas coast. Since whales are open-ocean species, they normally would not be expected to enter the shallow water habitat of the project site.

## 2.12 WEST INDIAN MANATEE

Manatees are extremely rare in Texas, although in the late 1800's, they were not uncommon in the Laguna Madre (USACE 2003). U.S. populations occur primarily in Florida. This marine mammal inhabits shallow coastal waters, estuaries, bays, rivers, and lakes. Throughout most of its range it appears to prefer rivers and estuaries to marine habitats. Due to its distribution rarity, it is unlikely to be encountered in the project area.

## 2.13 DUSKY SHARK

The dusky shark is a large shark with a wide-ranging distribution in warm temperate to tropical waters, including the Gulf of Mexico. It is coastal and pelagic in its distribution, where it occurs from the surf zone to well offshore. Its diet includes bony fishes, cartilaginous fishes, crustaceans (e.g. crabs and shrimp), and cephalopods (e.g. octopus and squid). This shark is known to make seasonal migrations in response to temperature changes, moving northward in summer and southward in fall (Compagno 1984). In NMFS tagging studies, dusky sharks tagged in New England were recaptured in the southwestern Gulf of Mexico. Known coastal nursery grounds are located off New Jersey to South Carolina (Cortes et al. 2006). Given the distribution of the dusky shark, it is unlikely that this species would occur in the project area.

## 2.14 LARGETOOTH SAWFISH

Historical occurrences of largetooth sawfish in North America were strictly confined to shallow (<10 m), near-shore, warm-temperate and tropical waters (>18-30°C), estuarine localities, partly enclosed lagoons, and similar situations. In the United States, largetooth sawfish were reported mainly along the Texas coast and east into Florida waters, but it is now considered extirpated in U. S. waters. The last confirmed largetooth sawfish reported in Texas

was in 1943 (NMFS 2007f). Therefore, it is extremely unlikely that this species would occur in the project area.

#### 2.15 NIGHT SHARK

The night shark is a deep-water shark reported in waters from Delaware south to Brazil, including the Gulf of Mexico. This shark is usually found at depths greater than 150-200 fathoms during the day and 100 fathoms at night (NMFS 2007g). Since the project area lacks any deep-water habitat, is very unlikely that this species would occur in the project area.

#### 2.16 SALTMARSH TOPMINNOW

The saltmarsh topminnow is endemic to the north-central coast of the Gulf of Mexico of the southern United States from Galveston Bay, Texas eastward through Louisiana, Mississippi, Alabama and parts of western Florida. This species tends to live in salt marshes and brackish water. It requires shallow, flooded marsh surfaces for breeding and feeding (NMFS 2007h). Due to the lack of suitable habitat within the immediate project area, which is outside the known range of this species, it is unlikely that this species would occur in the project area.

#### 2.17 SAND TIGER SHARK

The sand tiger shark has a broad inshore distribution. In the Western Atlantic, this shark occurs from the Gulf of Maine to Florida, in the northern Gulf of Mexico, in the Bahamas and in Bermuda. They are generally a coastal species, usually being found from the surf zone to depths around 75 feet. They may also be found in shallow bays. They usually live near the bottom, but may be found throughout the water column (NMFS 2007i). Given its scarcity and distribution, it is unlikely that the sand tiger shark would occur in the project area.

#### 2.18 SMALLTOOTH SAWFISH

Smalltooth sawfish have been reported in the Pacific and Atlantic Oceans and in the Gulf of Mexico. Sawfish species inhabit shallow coastal waters of tropical seas and estuaries throughout the world. They are usually found in shallow waters very close to shore over muddy and sandy bottoms. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths. The U.S. population of smalltooth sawfish is found only in the Atlantic Ocean and Gulf of Mexico. Historically, the U.S. population was common throughout the Gulf of Mexico from Texas to Florida, and along the east coast from Florida to Cape Hatteras. The current range of this species has contracted to peninsular Florida, and they are relatively common only in the Everglades region at the southern tip of the state (NMFS 2007d). It is very unlikely that this species would occur in the project area.

#### 2.19 SPECKLED HIND

The speckled hind inhabits warm, moderately deep waters from North Carolina to Cuba, including Bermuda, the Bahamas and the Gulf of Mexico. The preferred habitat is hard bottom reefs in depths ranging from 150 to 300 feet (NMFS 2007j). Due to the very shallow water and

sand substrate in the project area, it is very unlikely that this species would be found in the project area.

#### 2.20 WARSAW GROUPE

The Warsaw grouper is a very large fish found on the deep-water reefs of the southeastern United States. This fish ranges from North Carolina to the Florida Keys and throughout much of the Caribbean and Gulf of Mexico to the northern coast of South America. This species inhabits deepwater reefs on the continental shelf break in waters 350 to 650 feet deep (NMFS 2007k). Due to the very shallow water and sand substrate in the project area, it is very unlikely that this species would be found in the project area.

#### 2.21 WHITE MARLIN

White marlin are found in offshore waters throughout the tropical and temperate Atlantic Ocean and adjacent seas. White marlin preferred habitat is deep blue water over 330 feet deep with salinity around 35 parts per thousand and a surface temperature of about 72 degrees Fahrenheit. Prey items include a variety of fishes, crustaceans, and cephalopods (NMFS 2007l). Since this is a deep-water species and the project site does not provide any deep water habitat, this species is very unlikely to be found in the project area.

#### 2.22 IVORY BUSH CORAL

Ivory bush coral is endemic to the southeastern U. S. and ranges from Cape Hatteras, North Carolina through the Gulf of Mexico and Caribbean, although the main population is of east-central Florida. Colonies of this coral are found in depths of 160 to 500 feet on substrates of limestone rubble, low-relief limestone outcrops, and high-relief, steeply sloping prominences (NMFS 2007e). The shallow water in the project does not provide suitable habitat for this species so it is extremely unlikely that this species would be found in the project area.

#### 2.23 SOUTH TEXAS AMBROSIA

South Texas ambrosia is found in grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sand loams, mostly over the Beaumont Formation on the Coastal Plain (TPWD, 2009). It is also found in modified, unplowed sites such as railroad and highway right-of-ways, cemeteries, mowed fields, and erosion areas along small creeks. Areas such as these do not occur in the project area so it is unlikely that this species would be encountered.

#### 2.24 TEXAS AYENIA

Texas ayenia occurs in subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta. Since this type of habitat does not occur in the project area, it is unlikely that this species would be encountered.

### **3.0 EFFECTS OF PROPOSED ACTION ON LISTED SPECIES AND SPECIES OF CONCERN**

#### **3.1 EFFECTS ON BROWN PELICAN**

Foraging brown pelicans are common along the Texas Coast and may be found in the project area. However, no suitable nesting sites are located in the project area. Further, pelicans are highly mobile and are able to relocate to avoid any disturbance from construction activities. The proposed project is not likely to adversely impact this species.

#### **3.2 EFFECTS ON PIPING PLOVER**

The proposed project is located in close proximity to designated critical habitat for wintering piping plovers. However, the project is not likely to adversely affect the piping plover or critical habitat. Since these birds do not nest in the project area, nesting activities would not be impacted. The duration of impacts from construction activity would be relatively short and any wintering piping plovers in the project area would be able to shift foraging areas to avoid immediate work areas.

#### **3.3 EFFECTS ON NORTHERN APLOMADO FALCON**

Since this species is unlikely to be encountered in the project area, the proposed project will have no effect on this species.

#### **3.4 EFFECTS ON SEA TURTLES**

While sea turtles may occur in the project area, the proposed project is not likely to adversely affect any of these species. The species that has the highest probability of being encountered in the project area is the green sea turtle, followed by the loggerhead sea turtle, as these species are known to feed in seagrass meadows in the Laguna Madre. Due to the numbers of Kemp's Ridley's sea turtles nesting on nearby barrier island beaches, stray individuals of this species possibly could be encountered in the project area.

Widening of the channel would be conducted using cutterhead dredges, which move at slow enough speeds that turtles would be able to move out of the way of the cutterhead. Nesting activities are unlikely to occur within the project area, since it is located inland of the coastal beaches where these species nest. Therefore, it is unlikely that the proposed project would adversely impact any of the sea turtle species that may be encountered in the project area.

#### **3.5 EFFECTS ON ENDANGERED CAT SPECIES**

Since the Gulf coast jaguarondi and ocelot live in habitat with dense cover, which is not present in the project area, neither of these species would be affected by the proposed project.

#### **3.6 EFFECTS ON WHALES**

Whales occur in offshore waters, and none of these species are likely to wander into shallow coastal estuaries. Therefore, the proposed project will have no effect on these species.

### 3.7 EFFECTS ON WEST INDIAN MANATEE

Given its rarity in Texas and the unlikelihood of being encountered in the project area, the proposed project will have no effect on the West Indian manatee.

### 3.8 EFFECTS ON SMALLTOOTH SAWFISH

Due to the scarcity of this the smalltooth sawfish and the unlikelihood of occurrence in the project area, the proposed project will have no affect on this species.

### 3.9 EFFECTS ON IVORY BUSH CORAL

This species does not exist in the project vicinity, nor does suitable habitat for this species exist in the project area. Therefore, the proposed project will have no effect on this species.

### 3.10 EFFECTS ON PLANT SPECIES OF CONCERN

Neither of the plant species of concern, south Texas ambrosia and Texas ayesia, are likely to exist in the project area due to lack of suitable habitat. Therefore, the proposed project will have no effect on these species.

### 3.10 EFFECTS ON MARINE FISH SPECIES OF CONCERN

Habitat for these species does not exist in the project vicinity. Therefore, it is unlikely that these species would be found in the project area. Accordingly, the proposed project will have no affect on the dusky shark, largetooth sawfish, night shark, saltmarsh topminnow, sand tiger shark, speckled hind, Warsaw grouper, and white marlin.

## 4.0 CONCLUSIONS

The overall conclusion is that the proposed project is not likely to adversely affect any federally-listed threatened or endangered species, nor will it adversely modify critical habitat. Also, the project is not likely to adversely affect any species of concern. Although several threatened or endangered species may occur in the project vicinity, no regularly used habitat will be impacted. The dredging equipment that would be used would not be likely to adversely impact sea turtles and measures would be implemented to avoid and minimize any adverse impacts to piping plovers. Should any other listed species wander into the project vicinity, the size and mobility of these animals would allow them to avoid the immediate project site during construction and maintenance operations.

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**[Additional coordination documents will be included in Final EA]**

## CAMERON COUNTY

### AMPHIBIANS

		Federal Status	State Status
<b>Black-spotted newt</b>	<i>Notophthalmus meridionalis</i>		T
can be found in wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods; Gulf Coastal Plain south of the San Antonio River			
<b>Mexican treefrog</b>	<i>Smilisca baudini</i>		T
subtropical region of extreme southern Texas; breeds May-October coinciding with rainfall, eggs laid in temporary rain pools			
<b>Sheep frog</b>	<i>Hypopachus variolosus</i>		T
predominantly grassland and savanna; moist sites in arid areas			
<b>South Texas siren (large form)</b>	<i>Siren sp 1</i>		T
wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain; southern Texas south of Balcones Escarpment; breeds February-June			
<b>White-lipped frog</b>	<i>Leptodactylus fragilis</i>		T
grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass; species requirements incompatible with widespread habitat alteration and pesticide use in south Texas			

### BIRDS

		Federal Status	State Status
<b>American Peregrine Falcon</b>	<i>Falco peregrinus anatum</i>	DL	T
year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.			
<b>Audubon's Oriole</b>	<i>Icterus graduacauda audubonii</i>		
scrub, mesquite; nests in dense trees, or thickets, usually along water courses			
<b>Brown Pelican</b>	<i>Pelecanus occidentalis</i>	LE-PDL	E
largely coastal and near shore areas, where it roosts and nests on islands and spoil banks			
<b>Brownsville Common Yellowthroat</b>	<i>Geothlypis trichas insperata</i>		
tall grasses and bushes near ponds, marshes, and swamps; breeding April to July			
<b>Cactus Ferruginous Pygmy-Owl</b>	<i>Glaucidium brasilianum cactorum</i>		T
riparian trees, brush, palm, and mesquite thickets; during day also roosts in small caves and recesses on slopes of low hills; breeding April to June			
<b>Common Black-Hawk</b>	<i>Buteogallus anthracinus</i>		T

## CAMERON COUNTY

### BIRDS

Federal Status    State Status

cottonwood-lined rivers and streams; willow tree groves on the lower Rio Grande floodplain; formerly bred in south Texas

**Eskimo Curlew**                      *Numenius borealis*                      LE                      E

historic; nonbreeding; grasslands, pastures, plowed fields, and less frequently, marshes and mudflats

**Gray Hawk**                      *Asturina nitida*                      T

locally and irregularly along U.S.-Mexico border; mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas

**Interior Least Tern**                      *Sterna antillarum athalassos*                      LE                      E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

**Northern Aplomado Falcon**    *Falco femoralis septentrionalis*                      LE                      E

open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

**Northern Beardless-Tyrannulet**                      *Camptostoma imberbe*                      T

mesquite woodlands; near Rio Grande frequents cottonwood, willow, elm, and great leadtree; breeding April to July

**Peregrine Falcon**                      *Falco peregrinus*                      DL                      T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (*F. p. anatum*) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, *F.p. tundrius* is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.

**Piping Plover**                      *Charadrius melodus*                      LT                      T

wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats

**Reddish Egret**                      *Egretta rufescens*                      T

resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

**Rose-throated Becard**                      *Pachyramphus aglaiae*                      T

riparian trees, woodlands, open forest, scrub, and mangroves; breeding April to July

**Sennett's Hooded Oriole**                      *Icterus cucullatus sennetti*

often builds nests in and of Spanish moss (*Tillandsia unioides*); feeds on invertebrates, fruit, and nectar; breeding March to August

**Snowy Plover**                      *Charadrius alexandrinus*

## CAMERON COUNTY

### BIRDS

	Federal Status	State Status
formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast		
<b>Sooty Tern</b> <span style="float: right;"><i>Sterna fuscata</i></span>		T
predominately 'on the wing'; does not dive, but snatches small fish and squid with bill as it flies or hovers over water; breeding April-July		
<b>Southeastern Snowy Plover</b> <span style="float: right;"><i>Charadrius alexandrinus tenuirostris</i></span>		
wintering migrant along the Texas Gulf Coast beaches and bayside mud or salt flats		
<b>Texas Botteri's Sparrow</b> <span style="float: right;"><i>Aimophila botteri texana</i></span>		T
grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses		
<b>Tropical Parula</b> <span style="float: right;"><i>Parula pitiayumi</i></span>		T
dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July		
<b>Western Burrowing Owl</b> <span style="float: right;"><i>Athene cunicularia hypugaea</i></span>		
open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows		
<b>Western Snowy Plover</b> <span style="float: right;"><i>Charadrius alexandrinus nivosus</i></span>		
uncommon breeder in the Panhandle; potential migrant; winter along coast		
<b>White-faced Ibis</b> <span style="float: right;"><i>Plegadis chihi</i></span>		T
prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats		
<b>White-tailed Hawk</b> <span style="float: right;"><i>Buteo albicaudatus</i></span>		T
near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May		
<b>Wood Stork</b> <span style="float: right;"><i>Mycteria americana</i></span>		T
forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960		
<b>Zone-tailed Hawk</b> <span style="float: right;"><i>Buteo albonotatus</i></span>		T
arid open country, including open deciduous or pine-oak woodland, mesa or mountain country, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions		

### FISHES

	Federal Status	State Status
<b>American eel</b> <span style="float: right;"><i>Anguilla rostrata</i></span>		



## CAMERON COUNTY

### INSECTS

Federal Status    State Status

**Subtropical blue-black tiger beetle**    *Cicindela nigrocoerulea subtropica*

most tiger beetles are active, usually brightly colored, and found in open, sunny areas; adult tiger beetles are predaceous and feed on a variety of small insects; larvae of tiger beetles are also predaceous and live in vertical burrows in soil of dry paths, fields, or sandy beaches

**Tamaulipan agapema**    *Agapema galbina*

Tamaulipan thornscrub with adequate densities of the caterpillar foodplant *Condalia hookeri hookeri* (= *obovata*); adults occur Sep - Oct; eggs hatch within two weeks and larvae mature 'rapidly'

### MAMMALS

Federal Status    State Status

**Coues' rice rat**    *Oryzomys couesi*

T

cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water; breeds April -August

**Ghost-faced bat**    *Mormoops megalophylla*

colonially roosts in caves, crevices, abandoned mines, and buildings; insectivorous; breeds late winter-early spring; single offspring born per year

**Jaguar**    *Panthera onca*

LE

E

extirpated; dense chaparral; no reliable TX sightings since 1952

**Jaguarundi**    *Herpailurus yaguarondi*

LE

E

thick brushlands, near water favored; 60 to 75 day gestation, young born sometimes twice per year in March and August, elsewhere the beginning of the rainy season and end of the dry season

**Mexican long-tongued bat**    *Choeronycteris mexicana*

deep canyons where uses caves and mine tunnels as day roosts; also found in buildings and often associated with big-eared bats (*Plecotus* spp.); single TX record from Santa Ana NWR

**Ocelot**    *Leopardus pardalis*

LE

E

dense chaparral thickets; mesquite-thorn scrub and live oak mottes; avoids open areas; breeds and raises young June-November

**Plains spotted skunk**    *Spilogale putorius interrupta*

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

**Southern yellow bat**    *Lasiurus ega*

T

associated with trees, such as palm trees (*Sabal mexicana*) in Brownsville, which provide them with daytime roosts; insectivorous; breeding in late winter

**West Indian manatee**    *Trichechus manatus*

LE

E

Gulf and bay system; opportunistic, aquatic herbivore



## CAMERON COUNTY

### REPTILES

		Federal Status	State Status
<b>Keeled earless lizard</b>	<i>Holbrookia propinqua</i>		
coastal dunes, barrier islands, and other sandy areas; eats insects and likely other small invertebrates; eggs laid underground March-September (most May-August)			
<b>Kemp's Ridley sea turtle</b>	<i>Lepidochelys kempii</i>	LE	E
Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August			
<b>Leatherback sea turtle</b>	<i>Dermochelys coriacea</i>	LE	E
Gulf and bay systems, and widest ranging open water reptile; omnivorous, shows a preference for jellyfish; in the US portion of their western Atlantic nesting territories, nesting season ranges from March to August			
<b>Loggerhead sea turtle</b>	<i>Caretta caretta</i>	LT	T
Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November			
<b>Northern cat-eyed snake</b>	<i>Leptodeira septentrionalis septentrionalis</i>		T
Gulf Coastal Plain south of the Nueces River; thorn brush woodland; dense thickets bordering ponds and streams; semi-arboreal; nocturnal			
<b>Speckled racer</b>	<i>Drymobius margaritiferus</i>		T
extreme south Texas; dense thickets near water, Texas palm groves, riparian woodlands; often in areas with much vegetation litter on ground; breeds April-August			
<b>Texas horned lizard</b>	<i>Phrynosoma cornutum</i>		T
open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September			
<b>Texas scarlet snake</b>	<i>Cemophora coccinea lineri</i>		T
mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September			
<b>Texas tortoise</b>	<i>Gopherus berlandieri</i>		T
open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November			

### PLANTS

		Federal Status	State Status
<b>Bailey's ballmoss</b>	<i>Tillandsia baileyi</i>		
epiphytic on various trees and shrubs; flowering February-May			
<b>Green Island echeandia</b>	<i>Echeandia texensis</i>		

## CAMERON COUNTY

### PLANTS

Federal Status    State Status

on somewhat saline clays of lomas along the Gulf Coast near the mouth of Rio Grande, a habitat shared with *E. chandleri*; both species grow in areas dominated by herbaceous species with scattered brush and stunted trees, or in grassy openings in subtropical thorn shrublands; flowers April, June, and November, and likely in other months, as well

**Lila de los llanos**                      *Echeandia chandleri*

most commonly encountered among shrubs or in grassy openings in subtropical thorn shrublands on somewhat saline clays of lomas along Gulf Coast near mouth of Rio Grande; also observed in a few upland coastal prairie remnants on clay soils over the Beaumont Formation at inland sites well to the north and along railroad right-of-ways and cemeteries; flowering (May-) September-December, fruiting October-December

**Mexican mud-plantain**              *Heteranthera mexicana*

wet clayey soils of resacas and ephemeral wetlands in South Texas and along margins of playas in the Panhandle; flowering June-December, only after sufficient rainfall

**Plains gumweed**                      *Grindelia oolepis*

coastal prairies on heavy clay (blackland) soils, often in depressional areas, sometimes persisting in areas where management (mowing) may maintain or mimic natural prairie disturbance regimes; 'crawfish lands'; on nearly level Victoria clay, Edroy clay, claypan, possibly Greta within Orelia fine sandy loam over the Beaumont Formation, and Harlingen clay; roadsides, railroad rights-of-ways, vacant lots in urban areas, cemeteries; flowering April-December

**Runyon's cory cactus**                *Coryphantha macromeris var runyonii*

gravelly to sandy or clayey, calcareous, sometimes gypsiferous or saline soils, often over the Catahoula and Frio formations, on gentle hills and slopes to the flats between, at elevations ranging from 10 to 150 m (30 to 500 ft); ?late spring or early summer, November, fruit has been collected in August

**Runyon's water-willow**              *Justicia runyonii*

margins of and openings within subtropical woodlands or thorn shrublands on calcareous, alluvial, silty or clayey soils derived from Holocene silt and sand floodplain deposits of the Rio Grande Delta; can be common in narrow openings such as those provided by trails through dense ebony woodlands and is sometimes restricted to microdepressions; flowering (July-) September-November

**Shinners' rocket**                      *Thelypodopsis shinnersii*

mostly found along margins of Tamaulipan thornscrub on clay soils of the Rio Grande Delta, including lomas near the mouths of rivers; flowers mostly March and April

**South Texas ambrosia**              *Ambrosia cheiranthifolia*                      LE                      E

grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sandy loams, mostly over the Beaumont Formation on the Coastal Plain; in modified unplowed sites such as railroad and highway right-of-ways, cemeteries, mowed fields, erosional areas along small creeks; flowering July-November

**Star cactus**                              *Astrophytum asterias*                      LE                      E

## CAMERON COUNTY

### PLANTS

Federal Status    State Status

gravelly clays or loams, possibly of the Catarina Series (deep, droughty, saline clays), over the Catahoula and Frio formations, on gentle slopes and flats in sparsely vegetated openings between shrub thickets within mesquite grasslands or mesquite-blackbrush thorn shrublands; plants sink into or below ground during dry periods; flowering from mid March-May, may also flower in warmer months after sufficient rainfall, flowers most reliably in early April; fruiting mid April-June

**Texas ayenia**

*Ayenia limitaris*

LE

E

Subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta; known site soils include well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series); also under or among taller shrubs in thorn woodland/thorn shrubland; flowering throughout the year with sufficient rainfall

**Vasey's adelia**

*Adelia vaseyi*

mostly subtropical evergreen/deciduous woodlands on loamy soils of Rio Grande Delta, but occasionally in shrublands on more xeric sandy to gravelly upland sites; flowering January-June

## **APPENDIX G**

### **COORDINATION WITH OTHER AGENCIES**



**DEPARTMENT OF THE ARMY**  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553-1229

March 20, 2006

Environmental Section

Dr. James Bruseth  
Deputy State Historic Preservation Officer  
Division of Archaeology  
Texas Historical Commission  
P.O. Box 12276  
Austin, TX 78711-2276

Dear Dr. Bruseth:

The Corps of Engineers Staff Archeologist has reviewed the draft report entitled, *Close-Order Remote Sensing Survey of Proposed Channel Modification for Historic Properties Investigations, GIWW Improvements in the Vicinity of Port Isabel, Laguna Madre, Texas*, prepared for us under Contract No. DASCW64-03-D-0002, Task Order No. 0003 by Panamerican Consultants, Inc. under contract to Prewitt and Associates, Inc., dated November 2005 (Enclosed). The draft report was submitted in response to our initial request for an historic properties marine close-order remote-sensing survey in conjunction with the feasibility study for the GIWW in the vicinity of Port Isabel.

As documented in the report, no historic properties were found in the project area and further investigation is not justified. We request your review of the referenced report and your concurrence in our conclusion that no historic properties will be affected by the proposed project in compliance with 36 CFR 800.4(d)(1).

Thank you for your cooperation in this review process. If you have any questions concerning the report or our project, or if we can be of further assistance, please contact Nicole Cooper Minnichbach at 409-766-3878.

Sincerely,

A handwritten signature in cursive script that reads "Carolyn Murphy".

Carolyn Murphy  
Chief, Environmental Section

Enclosure  
1 Report



TEXAS  
HISTORICAL  
COMMISSION

*The State Agency for Historic Preservation*

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWRENCE OAKS, EXECUTIVE DIRECTOR

May 1, 2006

Carolyn Murphy  
Chief, Environmental Section  
Department of the Army  
Galveston District, Corps of Engineers  
P.O. Box 1229  
Galveston, Texas 77553-1229

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and the Antiquities Code of Texas  
Draft Report, *Close Order Remote Sensing Survey of Proposed Channel Modifications for Historic Properties Investigations, GIWW Improvements in the Vicinity of Port Isabel, Laguna Madre, Texas* by Panamerican Consultants. THC Permit No. 3912.  
COE-VD

Dear Ms. Murphy:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The review staff, led by State Marine Archeologist Steven D. Hoyt, has completed its review. The stated criteria for recommending specific magnetic anomalies for avoidance or further investigations, as stated on page 20, are a total 50-gamma variation and 80-foot duration. Seven anomalies in Table 4 appear to meet these criteria yet are not recommended for avoidance or further investigation. Steve Hoyt spoke with report author Andy Lydecker today regarding this matter. He ensures me that the final report will include explanatory information about these anomalies (e.g. associations with known sources – channel markers). Provisional on adequate explanation of these anomalies, I concur with the reports conclusions.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Steve Hoyt at 512/927-7882.**

Sincerely,

A handwritten signature in black ink, appearing to read "Steven D. Hoyt".

for  
F. Lawrence Oaks, State Historic Preservation Officer

FLO/sdh

**From:** [Minnichbach, Nicole C SWG](#)  
**To:** [Ireland, Steven K SWG](#);  
**cc:** ["Steve Hoyt"](#);  
**Subject:** FW: GIWW Port Isabel coordination  
**Date:** Tuesday, June 02, 2009 4:23:04 PM

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SHPO concurrence with Final Report. There are no further archeological issues with the proposed bend widening alternative.

Nicole Cooper Minnichbach  
Staff Archeologist  
USACE, Galveston District  
(W) 409.766.3878  
(F) 409.766.3064  
[nicole.c.minnichbach@us.army.mil](mailto:nicole.c.minnichbach@us.army.mil)

-----Original Message-----

From: Steve Hoyt [<mailto:Steve.Hoyt@thc.state.tx.us>]  
Sent: Tuesday, June 02, 2009 4:15 PM  
To: Minnichbach, Nicole C SWG  
Subject: RE: GIWW Port Isabel coordination

Reviewing your copy of my letter and the final report from Panamerican, I see that they included in their Table 4 a field for comments that explains why the anomalies meeting their significance criteria were not designated - either they represented a navigation marker or appeared on only a single survey line. That is sufficient to remove the report acceptance from the "provisional" category. The final report was accepted and the archeological investigation requirements have been met.

I'm sure there was no follow-up letter once the final report was received. I simply accepted the report and Panamerican received documentations saying their permit requirements were fulfilled.

Steven D. Hoyt, MA  
State Marine Archeologist  
Archeology Division  
Texas Historical Commission  
PO Box 12276  
Austin, TX 78711-2276  
512-927-7882  
fax 512-927-9797