DRAFT
ENVIRONMENTAL ASSESSMENT
FOR
EMERGENCY REPAIRS TO THE
PORT ARTHUR AND VICINITY HURRICANE/SHORE
FLOOD PROTECTION PROJECT
PORT ARTHUR,
JEFFERSON COUNTY, TEXAS

U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
GALVESTON, TEXAS
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Table of Contents

TABLE OF CONTENTS ..... **I**

LIST OF TABLES ..... **II**

1.0 PROPOSED ACTION **1**

1.1 PROJECT DESCRIPTION 1
1.2 PURPOSE AND NEED FOR PROJECT 2
1.3 PROPOSED PROJECT 3
1.4 PUBLIC COORDINATION AND NEPA SCOPING 5

2.0 ALTERNATIVES **6**

2.1 ALTERNATIVE 1 – NO ACTION 6
2.2 ALTERNATIVE 2 – REPAIR THE DAMAGED SECTIONS 7
2.3 COMPARISON OF ALTERNATIVES 8

3.0 AFFECTED ENVIRONMENT **8**

3.1 PROJECT AREA 8
3.2 WETLANDS 9
3.3 WILDLIFE 9
3.4 FISHERIES AND ESSENTIAL FISH HABITAT 10
3.5 THREATENED AND ENDANGERED SPECIES 10
3.6 CULTURAL RESOURCES 11
3.7 AIR QUALITY AND NOISE 11
3.8 WATER QUALITY 12
3.9 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) 13
3.10 SOCIOECONOMICS 13
3.11 ENVIRONMENTAL JUSTICE 14
3.12 PRIME AND UNIQUE FARMLANDS 15
3.13 RECREATIONAL RESOURCES 15

4.0 ENVIRONMENTAL CONSEQUENCES OF SELECTED ALTERNATIVE **15**

4.1 IMPACTS ON PROJECT AREA 15
4.2 IMPACTS ON WETLANDS 15
4.3 IMPACTS ON WILDLIFE 16
4.4 IMPACTS ON FISHERIES AND ESSENTIAL FISH HABITAT 16
4.5 IMPACTS ON THREATENED AND ENDANGERED SPECIES 16
4.6 IMPACTS ON CULTURAL RESOURCES 16
4.7 IMPACTS ON AIR QUALITY AND NOISE 17
4.8 IMPACTS ON WATER QUALITY 17
4.9 IMPACTS ON HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) 17
4.10 IMPACTS ON SOCIOECONOMICS 17

4.11 IMPACTS ON ENVIRONMENTAL JUSTICE 18
4.12 IMPACTS ON PRIME AND UNIQUE FARMLANDS 18
4.13 IMPACTS ON RECREATIONAL RESOURCES 18
4.14 IMPACTS ON ROADWAYS AND TRAFFIC 18

5.0 MITIGATION 18

6.0 CUMULATIVE IMPACTS 18

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS 19

8.0 CONCLUSIONS 21

9.0 LITERATURE CITED 22

LIST OF FIGURES

Figure 1. Port Arthur and Vicinity HFPP Levee Stationing and Proposed Repair Work 4

LIST OF TABLES

Table 3-1. Air Quality NAAQS 12
Table 3-2. Water Quality 12
Table 3-3. Demographic Trends 14
Table 3-4. Educational Attainment 14
Table 3-5. Comparison of Ethnic Demographics 14

APPENDICIES

Appendix A – Project Coordination A-1
Appendix B – Biological Assessment and Endangered Species Consultation B-1
Appendix C – Air Conformity Waivers C-1
Appendix D – 404(b)(1) Evaluation and 401 Certification Waiver D-1
Appendix E – TCMP Consistency Evaluation E-1

1.0 PROPOSED ACTION

The U.S. Army Corps of Engineers (Corps; USACE) Galveston District, has prepared this Environmental Assessment (EA) to evaluate the potential impacts associated with the recommended plan to conduct emergency repairs to the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project (HFPP). This EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality regulations to document findings concerning the environmental aspects of the proposed action.

1.1 PROJECT DESCRIPTION

The Port Arthur and Vicinity HFPP is located at Port Arthur, Jefferson County, in the extreme southeastern part of Texas, on the west side of Sabine Lake, north of the Sabine Neches Canal, and east of Taylor Bayou. The Port Arthur and Vicinity HFPP was authorized by the Flood Control Act of 23 October 1962, in accordance with House Document No. 505, 87th Congress, 2nd Session. The Port Arthur and Vicinity HFPP generally included substantial upgrading of a system constructed by local sponsors and includes approximately 34.4 miles of protective works consisting of approximately 27.8 miles of earthen levees and 6.6 miles of concrete and steel sheet pile floodwalls. The earthen levee elevations are 13.0 to 20.5 feet National Geodetic Vertical Datum of 1929 (NGVD) with 10 to 28-foot crown widths. Flood wall elevations are 15.5 to 19.5 feet NGVD. The Port Arthur and Vicinity HFPP includes twelve pumping stations to remove accumulated rainfall from the protected area. The pumping stations have the capacity to pump 5 million gallons per minute. The system has numerous appurtenant structures including vehicular and railroad closure structures, street and highway ramps and gated gravity drainage structures. The closure structures have an elevation of 15.5 to 17 feet NGVD.

The levees and floodwalls surround a 60 square mile area and were designed to protect Port Arthur and other communities in the vicinity, including the cities of Groves, Lakeview, Pear Ride, Port Acres, and Griffing Park. The Port Arthur and Vicinity HFPP provides protection up to and including a Standard Project Hurricane (SPH), which is a hypothetical hurricane that is intended to represent the most severe combination of parameters that are “reasonably characteristic” of a specified geographic region. For this area, the SPH consists of a storm surge of up to 14 feet NGVD.

The Jefferson County Drainage District Number 7 (JCDD7) maintains the Port Arthur and Vicinity HFPP. The JCDD7 is responsible for maintaining a right-of-way which allows access to the project features. This access is needed for regular maintenance and repairs as well as annual inspections. The Port Arthur and Vicinity HFPP was inspected in June 2008 and the Port Arthur and Vicinity HFPP was found to be in acceptable conditions. The Port Arthur and Vicinity HFPP is eligible for Rehabilitation Assistance from the USACE pursuant to ER 500-1-1.

1.2 PURPOSE AND NEED FOR PROJECT

Hurricane Ike made landfall in northern Galveston County on September 13, 2008, as a Category 2 hurricane. The storm surge in the Port Arthur and Vicinity HFPP area was greater than 12 feet above mean sea level, which is more characteristic of a Category 3 hurricane than a Category 2 hurricane. The combined storm surge and wave action from Hurricane Ike caused extensive damage to the Port Arthur and Vicinity HFPP. The damage includes erosion at the levee toe, erosion at the T-wall, cover stone damage, and slope failure along portions of Taylor Bayou.

The purpose of the project is to restore the Port Arthur and Vicinity HFPP to its pre-storm condition. In order to do this, the USACE needs to repair the following damages: the erosion at the levee toe, the erosion at the T-wall, the cover stone damage, and the slope failure along portions of Taylor Bayou. Figure 1 shows the location and types of damage that occurred due to Hurricane Ike. All damaged areas need to be repaired since potential failure at any one location could compromise the entire system. The following provides a description of the damaged areas and their potential failures.

<u>Erosion at Levee Toe:</u> The erosion of the toe of the levee has created an unstable shoreline where the rate of erosion may increase when exposed to high tides and normal storm events. The increased erosion will cut into the hurricane flood protection system, which will progressively become less stable. As the levee toe erodes, the factor of safety will decrease below the design value. This will leave the levee with an unacceptable factor of safety.

<u>Erosion at T-Wall:</u> Erosion at the T-Wall base may influence the stability of the T-Wall. Continued erosion may eventually lead to the undermining of the toe of the structure, which could lead to the failure of the wall. It appears that the erosion has not reached the wall's foundation, thus the wall currently still provides the level of protection of the original design at a reduced factor of safety. Based on the "New Orleans Hurricane Katrina Lessons Learned" and "Performance Evaluation Status and Interim Results Report Series" (USACE 2006), it is deemed that this particular condition provides an unacceptable factor of safety and the system needs to be upgraded to be consistent with current engineering standards.

<u>Cover Stone Damage:</u> The loss of support for the cover stone may be indicative of either localized loss of material or a toe failure. In either case the loss of material has affected the integrity of the canal shoreline protection. The damaged sections provide protection at reduced factors of safety. If the sections are not repaired, the factor of safety would continue to decrease as the sections lose more support material for the cover stone. This issue needs to be addressed in order to limit the size of the void. If the area continues to suffer from erosion or toe failure, the slope could become unstable in the future and the cover stone will be unable to withstand the design storm events.

<u>Taylor Bayou Slope Failure</u>: The damaged sections provide protection at reduced factors of safety. If left unrepaired, the factor of safety would continue to decrease as the slope

failure increases, further reducing the levee's effective cross-sectional area. This condition may result in a rapid, dangerous levee breach. The slope failures should be repaired in order to keep the levee's structural integrity, otherwise there may be failure resulting in a levee breach during a significant storm surge.

The next storm season begins in June 2009. Early projections from Colorado State University predict that there will be 14 named storms in the Atlantic during the 2009 hurricane season. Of the 14 named storms, seven are projected to be hurricanes, with three of the hurricanes classified as major storms. National Oceanic and Atmospheric Administration (NOAA) projections are not determined until May 2009. The Port Arthur and Vicinity HFPP area is affected by significant tropical storms or hurricanes on average every four years.

1.3 PROPOSED PROJECT

All work undertaken for the Port Arthur and Vicinity HFPP would be consistent with ER 500-1-1, which allows for improvements to the design and equipment that utilize state of the art technology, and are commonly incorporated into current designs in accordance with sound engineering principles. The Port Arthur and Vicinity HFPP requires several repairs to restore it to its pre-storm condition. The following sections present the proposed work.

<u>Erosion at Levee Toe:</u> In order to prevent further erosion, riprap and vegetation would be provided from Sabine Neches Canal Station 262+00 to 270+00 along the scarp which has developed. Riprap would be placed along the damaged area in order to prevent further erosion and restore the area to pre-storm conditions. This improvement would be consistent with ER 500-1-1 as it would provide a system which is consistent with current designs and sound engineering principles. Along with the riprap placement, the vegetation and levee grade would be restored to pre-storm conditions.

<u>Erosion at T-Wall:</u> Along the protected side of the concrete floodwall, the eroded topography would be replaced with a concrete scour pad, in accordance with the "New Orleans Hurricane Katrina Lessons Learned" and the "Performance Evaluation Status and Interim Results Report Series." The concrete scour pad would be 15 feet wide, with a 3:1 slope, set at an elevation of 8 feet amsl. At varying locations, the width of the scour pad will change to accommodate existing buildings and roads. Along with the concrete placement, the remaining area adjacent to the scour pad would be graded and vegetated to match existing adjacent ground elevations. This improvement would be consistent with ER 500-1-1 as it would provide a system which is consistent with current design requirements and sound engineering principles. At this time, the design for the scour pad is not complete and requires additional study to determine if it would change the rate of rainfall run-off. If run-off is increased, design modification may be required to channel the run-off away from homes.

The Jefferson County Drainage District #7 has proposed to install a permanent fence along the right-of-way to ensure access for maintenance and repairs and for annual

inspections. The proposed fence would not be a part of the Federal project, nor would the proposed fence be paid for by Flood Control and Coastal Emergencies (FCCE) money.

Figure 1. Port Arthur and Vicinity HFPP Levee Stationing and Proposed Repair Work

Cover Stone Damage: At the damaged armor stone locations, the repairs would be based on the type of failure. If it is determined to be a localized erosion failure, then the cover stone or stones would be removed and the void would be filled with riprap. Once the void is filled, the cover stone would be put back in place. If it is determined to be toe failure,

then the toe of the slope would be stabilized by riprap to increase slope stability. This would prevent further toe failure, and once this system is in place, the void can be filled using the same procedure as discussed for the repair of localized erosion.

Taylor Bayou Slope Failure: The repairs would consist of removing and improving the soil within the failed section. This improved soil would be used to restore the failed section. The following steps are a potential sequence of construction:

1) Over-excavate the failed section,
2) Improve the material from the failed section through cement or lime stabilization,
3) Compact material in-place, and
4) Plant and re-establish the vegetation.

These measures would restore the levee to the pre-storm condition.

1.4 PUBLIC COORDINATION AND NEPA SCOPING

The USACE held a Public Information and NEPA Scoping Meeting on Wednesday, March 18th, 2009 in the City Council Chambers at the Port Arthur City Hall. The meeting consisted of an Open House from 6 PM to 6:30 PM, then formal presentations by the Jefferson County Drainage District Number 7 (JCDD7), URS Corporation, and the USACE, which was followed by an informal, one-on-one, opportunity for the public to discuss the proposed project with representatives from the USACE and the JCDD7. During the open house, the presentation, and the discussions after the presentations, the public was encouraged to submit any comments they might have on the proposed project, the affected environment, or environmental impacts that might result from conducting the repairs. The agenda for the Public Information and NEPA Scoping meeting is located in Appendix A.

Numerous comments were submitted during the public information and NEPA scoping meeting; additional comments were subsequently submitted via mail and e-mail. A brief summary of the issues generated from the comments and discussions at the Public Meeting and preliminary responses are presented below.

- Requests to raise the levees;

  The storm damage funding for repair of the T-wall cannot be used to raise the levees. In order to raise the levees, the local sponsor would need to request a separate study with the Corps.

- Issues concerning the proposed security fence along the T-Wall and access to the right-of-way by adjacent land owners;

  The proposed security fence would be installed by the JCDD7 and is not a part of the Federal Project.

- The treatment of existing buildings within the right-of-way;

  This issue is currently being investigated and will be presented in the Final Environmental Assessment.

- Operation of the pump stations during flooding events;

  Operation of the pump stations is the responsibility of the JCDD7 and is not relevant to the repair of storm damages to the T-Wall. As such it will not addressed in this Environmental Assessment.

- Stabilizing the canal's south shore erosion;

  If erosion is occurring on the south side of the Sabine-Neches Canal, it is not impacting the Hurricane/Shore Flood Protection Project, and therefore is not related to this study.

- Protection of the Atlantic Road area;

  The U.S. Army Corps of Engineers is currently assessing if the flooding in the Atlantic Road area is related to the Hurricane/Shore Protection Project.

- Drainage of runoff from the concrete scour pad away from homes;

  The potential for increased runoff, and how to deal with the runoff, is currently being studied and will be presented in the Final Environmental Assessment.

- Inquiries into the contracting process for the proposed repairs.

  Inquiries concerning the contracting process should be directed tohttps://www.fbo.gov .

Detailed comments and responses will be provided in the Final Environmental Assessment.

2.0 ALTERNATIVES

Two primary alternatives were considered: No Action and Repair of the Damaged System (the Selected Plan).

2.1 ALTERNATIVE 1 – NO ACTION

Under Alternative 1 – No Action, the USACE would not repair the damages to the Port Arthur and Vicinity HFPP.

Erosion at Levee Toe: The erosion of the toe of the levee has created an unstable shoreline where the rate of erosion would likely increase as it is exposed to high tides and normal storm events. The increased erosion would cut into the hurricane flood protection system, which would progressively become less stable. The continued erosion at the levee toe would eventually result in a failure of the levee.

Erosion at T-Wall: Continued erosion of the T-Wall would eventually lead to the undermining of the toe of the structure and a failure of the T-Wall.

Cover Stone Damage: The loss of support for the cover stone would continue to affect the integrity of the canal shoreline protection. As the area continues to suffer, the slope would become unstable in the future and the cover stone would be unable to withstand the design storm events.

Taylor Bayou Slope Failure: The damaged sections would continue to provide protection. However, if left unrepaired, the level of protection would continue to decrease as the slope failure increases. This would reduce the levee's effective cross-sectional area. This condition could result in a rapid, dangerous levee breach.

Failure to repair the system could allow a hurricane storm surge to enter the adjacent communities, causing human injuries and possible deaths, as well as catastrophic damage to public and private infrastructure. The Port Arthur and Vicinity HFFP also protects one of the largest petrochemical facilities in the country, and damage to this facility would mean a suspension in the production of a significant amount of refined petroleum products until the facility could be repaired.

2.2 ALTERNATIVE 2 – REPAIR THE DAMAGED SECTIONS

Under Alternative 2 – the Selected Plan, the USACE would repair the damage the Port Arthur and Vicinity HFPP sustained during Hurricane Ike. All project activities would be conducted from the land; no work would be conducted from the water. The structures would be repaired to provide the level of protection for the SPH with a storm surge of up to 14 feet NGVD.

Erosion at Levee Toe: Riprap and vegetation would be replaced between Sabine Neches Canal Station 262+00 and 270+00 along the scarp which has developed. In order to accomplish this work, eroded material would be mechanically transported from the base of the toe and used to return the grade to pre-storm conditions. Riprap would be trucked in and placed along the damaged area which would prevent further erosion. Along with the restoration of the grade and the placement of riprap, the vegetation would be restored to pre-storm condition. The project area would be accessed from existing levee maintenance roads.

Erosion at T-Wall: The eroded topography would be replaced with a concrete scour pad. In order to accomplish this task, eroded material would be re-graded to restore the pre-storm slope (additional fill would be brought in by dump truck as needed), the concrete

pads would be brought in and placed, then the scour pad would be covered with fill material and vegetation to match the adjacent ground elevations. All project activities would be confined to the existing right-or-way. The right-of-way is located immediately adjacent to the T-Wall and ranges from 15 to 30 feet wide.

Cover Stone Damage: The repairs would be based on the type of failure. If it is determined to be a localized erosion failure, then the cover stone or stones would be removed and the void would be filled with riprap. Once the void is filled, the cover stone would be put back in place. If it is determined to be toe failure, then the toe of the slope would be stabilized by riprap to increase slope stability. In either scenario, the damaged areas would be accessed by existing roads and the work would be conducted from the shore. Heavy machinery would be used to execute the repairs.

Taylor Bayou Slope Failure: The repairs would consist of over excavating the failed section, improving the material from the failed section through cement or lime stabilization, compacting the material in-place, and planting and re-establishing the vegetation. In order to accomplish the repairs, the damaged areas would be accessed by existing maintenance roads, heavy machinery would be used to excavate the damaged areas, the damaged areas would be re-graded, additional fill would be brought in by dump truck as needed, and the concrete would be placed with heavy machinery.

2.3 COMPARISON OF ALTERNATIVES

It has been determined that without the repairs the Port Arthur and Vicinity HFPP would experience significant erosion affecting the slope stability and structural integrity of the entire system; the system would be compromised and a significant amount of life and property would be at risk. The no action alternative was not considered to be acceptable. Therefore, the selected plan is to repair the damaged sections of the Port Arthur and Vicinity HFPP.

3.0 AFFECTED ENVIRONMENT

3.1 PROJECT AREA

The study area for the affected environment for this project consists of the City of Port Arthur and vicinity, Sabine Lake, and Taylor Bayou. The city of Port Arthur is on State Highway 87 on the lower west bank of Sabine Lake, five miles east of the Neches River Rainbow Bridge and seventeen miles southeast of Beaumont in southeast Jefferson County. Sabine Lake is Texas' eastern-most estuary, covering some 90,000 acres. It is largely co-owned and regulated by the states of Texas and Louisiana. The estuary lies in a river valley formed during the last glacial period. The primary freshwater influx to the lake is from the Sabine and Neches Rivers. Bayous entering Sabine Lake include Lighthouse, Fourge, Greens, Madame Johnson, Johnsons, Willow, and Black (USACE 2008).

The study area is located in the Austroriparian Biotic Province, which extends from east Texas along the Gulf coast plain to the Atlantic coast, and the Outer Coastal Plain Mixed Forest Physiographic Province. The study area is characterized by a diversity of features that are a result of the natural transition between marine and freshwater environments and anthropogenic impacts (USACE 2008).

The climate of the study area is both tropical and temperate. Prevailing winds are generally from the south and southeast with an average speed of about 10-11 miles per hour. In the winter months, cold air masses bring in polar air and prevailing northerly winds. Temperatures are moderated by the influence of the winds from the Gulf, resulting in mild winters and relatively cool summers. Average annual precipitation in the study area is between thirty-seven and fifty inches. Due to the abundance of rainfall in the region, the rivers and bayous of this reach provide substantial freshwater inflow into Sabine Lake (USACE 2008).

3.2 WETLANDS

The wetlands of the Sabine Lake Estuary contribute nutrients to and enhance productivity of Sabine Lake as well as serve as important nursery and adult habitat for a variety of oligohaline and marine fish and invertebrate species. Sabine Lake is a low-salinity, estuarine embayment of the Gulf of Mexico and is characterized by shallow, productive waters. Phytoplankton, zooplankton, and aquatic invertebrates living in these habitats provide food web support for a diversity of fish and bird species.

The Sabine Lake Estuary is home to a variety of plant species that are typical of species found in estuarine wetlands including cordgrasses (smooth cordgrass, *Spartina alterniflora*, and saltmeadow cordgrass, *S. patens*), saltwort (*Batis maritima*), glasswort (*Salicornia virginica*), seashore saltgrass (*Distichlis spicata*), saltmarsh bulrush (*Scirpus maritimus*), sea oxeye (*Borrichia frutescens*), and marsh elder (*Iva frutescens*) (USACE 2008).

3.3 WILDLIFE

Marine species utilizing the marsh include, but are not limited to, spotted seatrout (*Cynoscion nebulosus*), sand seatrout (*Cynoscion arenarius*), Atlantic croaker (*Micropogonius undulatus*), red drum (*Scienops ocellatus*), black drum (*Pogonius cromis*), sheepshead (*Argosargus probatocephalus*), blue crab (*Callinectes sapidus*), white shrimp (*Litopenaeus setiferus*), brown shrimp (*Farfantepenaeus aztecus*), and southern flounder (*Paralichthys lethostigma*). The waters of the Sabine Lake Estuary support species important for commercial and recreational usage and provide habitat for the following organisms: white shrimp and brown shrimp, blue crab, eastern oyster (*Crassostrea virginica*), spotted seatrout, sand seatrout, Atlantic croaker, red drum, black drum, southern kingfish (*Menticirrhus americanus*), Gulf kingfish (*Menticirrhus littoralis*), sheepshead, southern flounder, striped mullet (*Mugil cephalus*), sea catfish (*Galeichthys felis*), Gulf menhaden (*Brevoortia patronus*), and gafftopsail catfish (*Bagre marinus*).

In addition, numerous other estuarine and marine resources are found in Sabine Lake Estuary including bay anchovy (*Anchoa mitchilli*), silver perch (*Bairdiella chrysoura*), bull shark (*Carcharhinus leucas*), sheepshead minnow (*Cyprinodon variegatus*), gizzard shad (*Dorosoma cepedianum*), Gulf killifish (*Fundulus grandis*), code goby (*Gobiosoma robustum*), pinfish (*Lagodon rhomboides*), spot (*Leiostomus xanthurus*), silversides (*Menidia* spp.), Gulf flounder (*Paralichthys albigutta*), bluefish (*Pomatomus saltatrix*), Spanish mackerel (*Scomberomorus maculatus*), bay squid (*Lolliguncula brevis*), hard clam (*Mercenaria mercenaria*), grass shrimp (*Palaemonetes pugio*), and common rangia (*Rangia cuneata*).

The sediments within the estuary support benthic organisms, including annelid worms, small crustaceans (amphipods, isopods, copepods, juvenile decapods), mollusks, and other small bottom-dwellers in salt marshes and unvegetated, subtidal sediments. Among these benthic organisms are herbivores (eating algae or other live plant material), detritivores (feeding on decaying organic matter in surface sediments or sediment-bound nutrients and organic substances that are not generally available to epiphytic or pelagic organisms), carnivores (preying on other benthic organisms), and omnivores (a combination). These organisms provide the nutritional base for developing stages of many finfish and shellfish and, thus, affect all trophic levels in the Sabine Lake Estuary (USACE 2008).

Possible migrant birds that may occur in the study area during the winter include: chuck-will's-widow (*Camprimulgus carloinensis*), chimney swift (*Chaetura pelagica*), ruby-throated hummingbird (*Archilochus colubris*), eastern kingbird (*Tyrannus tyrannus*), purple martin (*Progne subis*), yellow-throated warbler (*Dendroica dominica*), and black-and-white warbler (*Mniotilta varia*) (USACE 2008).

3.4 FISHERIES AND ESSENTIAL FISH HABITAT

This EA initiates Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act. The National Marine Fisheries Service (NMFS) will review this EA and provide comments regarding compliance with the requirements of this Act.

Sabine Lake has been identified as essential fish habitat for adult and juvenile brown and white shrimp, red drum, red snapper, lane snapper, greater amberjack (*Seriola dumerilli*), king mackerel, Spanish mackerel (*Scomberomorus maculates*), ling, Gulf stone crab (*Menippe adina*), gag grouper (*Mycteroperca microlepis*), scamp (*Mycterporeca phenax*), and adult gray snapper (*Lutjanus griseus*) (USACE 2008).

3.5 THREATENED AND ENDANGERED SPECIES

The HFPP is located in Jefferson County, TX. The U.S. Fish and Wildlife Service (USFWS) lists six species as threatened or endangered in Jefferson County; however, none of these species are expected to be found in the project area (see Appendix B –

Biological Assessment). The six threatened or endangered species associated with Jefferson County are:

- green sea turtle (*Chelonia mydas*);
- hawksbill sea turtle (*Eretmochelys imbricata*);
- Kemp's ridley sea turtle (*Lepidochelys kempii*);
- leatherback sea turtle (*Dermochelys coriacea*);
- loggerhead sea turtle (*Caretta caretta*); and
- piping plover (*Charadrius melodus*).

Jefferson County does not contain designated critical habitat for any of these species. Descriptions of the habitat requirements for the above listed species are discussed in the Biological Assessment (BA) found in Appendix B. The State listed threatened or endangered species are listed in Appendix B.

3.6 CULTURAL RESOURCES

The City of Port Arthur was founded in 1895, originally to be both a major tourist resort and an important seaport. Port Arthur became an official port of entry in 1906, and by 1908 the Sabine-Neches Canal had been deepened and extended up the Neches River to Beaumont and Orange.

The eruption of Spindletop on January 10, 1901, secured the future of Port Arthur. Major oil companies-Gulf, Magnolia, Humble, and Texaco-all emerged from the Spindletop Oil field boom. Gulf in 1901 and Texaco in 1902 built major refineries at Port Arthur. Pipelines tied the city to Spindletop, and petroleum products soon were shipped through the Sabine Neches Canal. By 1909 Port Arthur had become the twelfth largest port in the United States in value of exports, and by 1914 it was the second largest oil-refining point in the nation. Development as a major petrochemical center was reflected in population growth. From 900 residents in 1900, Port Arthur expanded to a population of 7,663 in 1910 and 50,902 in 1930. After the late 1960s, when the city had 69,000 residents, the population slightly declined; in 1990 it was 58,724.

The Texas state database was searched and no previously recorded archeological sites are located in the project area. However, there are two National Register Districts, Eddington Court and Rose Hill Park, adjacent to the levee where repairs to the T-Wall will take place. In addition, there are three National Register Properties adjacent to the project area. These properties consist of Pompeiian Villa, the Port Arthur Federated Women's Club, and Gates Memorial Library.

3.7 AIR QUALITY AND NOISE

<u>Air Quality:</u> The Port Arthur and Vicinity HFPP project area is located in the Beaumont-Port Arthur Air Quality Control Region (BPA) (EPA, 2007). The BPA was classified as having moderate non-attainment with the 8-hour NAAQS for ozone but is in attainment with the NAAQS for all other criteria pollutants. By 2019, the area is expected to achieve

and maintain attainment with the National Ambient Air Quality Standards (NAAQS) for ozone.

Ambient air quality in the project area is directly related to emissions from man-made sources such as stationary sources (stacks, vents, etc.); emissions from mobile sources such as vehicles, ships, trains, etc.; chemical reactions in the atmosphere such as the formation of ozone; and natural sources such as trees, fires, and wind-blown dust. Since all of these sources must be considered in an assessment of air quality, the EPA has identified air emissions inventories and ambient air monitoring as key methods for assessing air quality (USACE 2008).

Noise: The City of Port Arthur has a noise standard that limits noise according to zoning district (e.g. residential, commercial, industrial). The repair work for Taylor Bayou levee repairs would be within an industrial zone. The repairs for the erosion at the levee toe would be within an industrial zone. The work for repairs of the erosion at the T-wall and the cover stone damage would be in residential areas. In addition, for the T-wall and cover stone repairs, nearby noise sensitive receptors consist of 6 churches, the Gates Library, Lamar State College, and Rose Hill Park. All of these Noise Sensitive Area's (NSA's) occur between the proposed project area and Proctor Street, the first main street west of the proposed project area. The applicable City of Port Arthur noise standard for the NSAs would limit noise to no greater than 57 dBA during the day (7 am to 10 pm) and 52 dBA at night (10 pm to 7 am). However, construction related noise is exempt from this standard (USACE 2008).

Table 3-1. Air Quality NAAQS

Source Category	CO (tpy)	NOX (tpy)	PM10 (tpy)	PM2.5 (tpy)	SO2 (tpy)	VOC (tpy)
Area	3,560	2,828	12,475	2,370	6	3,567
Point Source	17,795	22,606	2,597	2,119	10,768	7,448
Highway Vehicles	45,496	5,557	145	104	133	4,077
Off-Highway	26,585	23,114	1,173	1,077	3,323	4,714
SUBTOTAL	**93,435**	**54,105**	**16,390**	**5,669**	**14,231**	**19,806**

3.8 WATER QUALITY

The Texas Commission on Environmental Quality (TCEQ) has designated certain larger streams, or segments thereof, as "classified" segments for the purpose of developing water quality criteria (WQC) specific to each segment. Three of these segments are adjacent to the project area: Taylor Bayou, Gulf Intracoastal Water Way (GIWW), and Sabine Lake (USACE 2008).

Table 3-2. Water Quality

		Segment		
		Taylor Bayou	GIWW	Sabine Lake
Us	Recreation	CR	CR	A, B
	Aquatic Life	I	H	C, E

	Domestic Water Supply	N/A	N/A	N/A
Criteria	CI (mg/l)	400	N/A	N/A
	SO (mg/l)	100	N/A	N/A
	TDS (mg/l)	1,100	N/A	N/A
	D.O. (mg/l)	4.0	4.0	4.0
	pH Range (SU)	6.5-9.0	6.5-9.0	6.0-8.5
	Fecal Coliform #100/ml	200	200	200
	Temp.	95° F	95° F	95° F

A – Primary Contact Recreation
B – Secondary Contact Recreation
C – Propagation of fish and wildlife
CR – Contact recreation
E – Oyster propagation
H – High aquatic life use
I – Intermediate aquatic life use

3.9 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

A Hazardous, Toxic, and Radioactive Waste (HTRW) preliminary assessment was conducted for the proposed project. The assessment methodology is designed to identify known and potentially unknown HTRW sites that could cause a release to the environment, endanger human health, and impact project costs and schedules. Methodology included a database search, and a review of aerial photos and maps. Databases included in the research included the Superfund, National Pollutant Discharge Elimination System, Resource Conservation and Recovery Act report from the Hazardous Waste database, and the Toxic Release Inventory (http://134.67.99.122/enviro). Investigations indicate there are no known HTRW sites in the proposed project area or adjacent to the proposed project.

3.10 SOCIOECONOMICS

As of the census of 2000, there were 57,755 people, 21,839 households, and 14,675 families residing in the city. The population density was 696.5 people per square mile (268.9/km²). There were 24,713 housing units at an average density of 298.0/sq mi (115.1/km²).

There were 21,839 households out of which 33.2% had children under the age of 18 living with them, 42.6% were married couples living together, 19.7% had a female householder with no husband present, and 32.8% were non-families. 29.4% of all households were made up of individuals and 13.6% had someone living alone who was 65 years of age or older. The average household size was 2.61 and the average family size was 3.25.

The median income for a household in the city was $26,455, and the median income for a family was $32,143. Males had a median income of $30,915 versus $21,063 for females. The per capita income for the city was $14,183. About 22.9% of families and 25.2% of the population were below the poverty line, including 35.2% of those under age 18 and 14.4% of those ages 65 or over (USACE 2008).

After decades of stagnation and neglect in the area economy, Port Arthur is in the early stages of an economic boom. Several large projects involving the energy infrastructure are underway or proposed. The Sabine Pass LNG terminal has been constructed and has begun operations. The Golden Pass LNG is nearing completion. These projects have brought cumulative initial investments of $2 billion, and will employ thousands at peak construction (USACE 2008).

Port Arthur is home to a large portion of United States refining capacity; Port Arthur is now seeing renewed investment in several key installations. Motiva Enterprises is undertaking a major addition to its western Port Arthur refinery, expanding capacity to 600,000 barrels per day. This $6.7 billion project is the largest US refinery expansion to occur in 30 years. Premcor Refining (Now Valero) recently completed a $775 million expansion of its petrochemical plant, and BASF/FINA commenced operations of a new $1.75 billion gasification and cogeneration unit on premises of its current installation, which had just completed its own $1 billion upgrade (USACE 2008).

Table 3-3. Demographic Trends

		Port Arthur	Jefferson County	Texas
Population	1980	63,053	250,938	14,229,191
	1990	58,274	239,397	16,986,510
	2000	57,755	252,051	20,851,820

Table 3-4. Educational Attainment

	High School	Bachelor's Degree	Graduate or Professional Degree
Port Arthur	69.7%	9.3%	2.5%
Jefferson County	78.5%	11.5%	4.8%
Texas	75.7%	15.6%	7.6%

3.11 ENVIRONMENTAL JUSTICE

The proposed repairs are located within the footprint of the Port Arthur and Vicinity HFPP. The project is in Jefferson County, which has a population of 252,051, based on the 2000 census. The population of Port Arthur was 57,755 according to the 2000 census. As shown in Table 3-5, the City of Port Arthur has a higher percentage of minorities than either Jefferson County or the state of Texas. Port Arthur also has a lower median income and a higher percentage of families living below the poverty level than Jefferson County or the state of Texas (USACE 2008).

Table 3-5. Comparison of Ethnic Demographics

	Port Arthur	**Jefferson County**	**State of Texas**
Ethnicity			
White	31.8%	51.8%	71.0%

African American	43.7%	33.7%	11.5%
Native American	0.8%	0.7%	0.6%
Asian	5.3%	1.7%	2.7%
Other	8.9%	4.3%	11.7%
Two or more races	2.1%	1.5%	2.5%
Hispanic or Latino Origin	17.5%	10.5%	32.0%
Median Income, 1999	$26,455	$34,522	$39,927
Families below Poverty, 1999	22.9%	16.3%	12.0%

3.12 PRIME AND 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. There is no prime or unique farmland within the Port Arthur and Vicinity HFPP project footprint.

3.13 RECREATIONAL RESOURCES

There are several recreational areas in Port Arthur, including: Babe Zaharias Golf Course, Pleasure Island RV Park, Port Arthur Yacht Club, Patch Golf Club, and Rose Hill Park. Rose Hill Park is adjacent to the proposed T-Wall repairs.

4.0 ENVIRONMENTAL CONSEQUENCES OF SELECTED ALTERNATIVE

4.1 IMPACTS ON PROJECT AREA

An Environmental Statement was completed for the authorized project in July 1974 (USACE, 1974). The locations of the proposed repairs have been highly disturbed by previous construction activities. The currently proposed work activities will impact regularly maintained upland grasses and existing rock riprap.

4.2 IMPACTS ON WETLANDS

No wetlands will be impacted by the proposed repairs. The proposed repair will occur within the authorized alignment and footprint of the Port Arthur and Vicinity HFPP to restore the project to its pre-storm conditions. All equipment and materials will be brought to the site via existing roads by vehicles. All work will occur along the unvegetated rock riprap or on the levee slopes of the project which are dominated by upland grasses that are routinely mowed. The upland vegetation along the levee system should recover to near-present conditions after the repairs are completed.

4.3 IMPACTS ON WILDLIFE

The project would result in temporary, minor disturbances to wildlife in the project area during construction. The proposed repair work would occur within the footprint of the existing project which has been previously disturbed and undergoes routine inspection and maintenance activities. These activities produce disturbances similar to those expected from the proposed repair work. Species that do not tolerate disturbances resulting from the repair could avoid the area during this time. The habitat at the sites proposed repair sites is similar to the habitat found extensively along the Texas coast in the immediate vicinity of the project area. Temporarily displaced wildlife will have suitable habitat immediately available to them.

4.4 IMPACTS ON FISHERIES AND ESSENTIAL FISH HABITAT

The USACE has determined that no permanent effects to EFH will occur as a result of the project. Temporary impacts to estuarine water column and estuarine mud, sand, shell and rock substrates will result from the project. However, it is anticipated that these impacts will be minor and temporary in nature. Therefore, no EFH mitigation is required for the project. No habitat areas of particular concern are located in the project area.

4.5 IMPACTS ON THREATENED AND ENDANGERED SPECIES

The proposed repair work is minor, short-term, and will occur within the footprint of the existing project. This footprint has been previously disturbed and undergoes routine inspection and maintenance. These activities produce disturbances similar to those expected from the proposed repair work. For these reasons, the proposed action is expected to have no effect on any federally-listed threatened or endangered species or their critical habitat (see Appendix B. Biological Assessment and Endangered Species Consultation).

4.6 IMPACTS ON CULTURAL RESOURCES

The project was reviewed by a Staff Archeologist and it was determined that the project footprint has been so extensively modified that there is little potential for a historic property to be present and that the repairs are of such limited nature that little likelihood exists for the repairs to impinge upon a historic property, even if present within the affected area.

The only potential impacts from the proposed project to the two Historic Districts and the three Historic Properties would be noise. The noise from the proposed project would be minor and temporary (see Section 4.7); therefore, noise would not have the potential to affect the National Register of Historic Places eligibility of the Historic Districts or Properties.

4.7 IMPACTS ON AIR QUALITY AND NOISE

Air Quality: The Port Arthur and Vicinity HFPP project area is located in the Beaumont-Port Arthur Air Quality Control Region (BPA) (EPA, 2007), which is classified as "moderate" non-attainment with the 8-hour NAAQS for ozone but is in attainment with the NAAQS for all other criteria pollutants. General conformity under the Clean Air Act, Section 176 has been reviewed for this project. The requirements of this rule are not applicable to this project because it is exempt under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A) since it is impractical to prepare the conformity analysis which might otherwise be required and this project cannot be delayed due to the overriding concerns for pubic health and welfare, especially in view of the upcoming hurricane season. Furthermore, given the complexities of repair execution, a determination pursuant to 40 CFR 93.153(e)(2) and 30 TAC 1201.30(c)(5)(B) has been signed that extends this exemption an additional six months, through March 13, 2010. Signed determinations documenting these decisions are included in Appendix C.

Noise: Noise associated with earth-moving equipment presents a short-term impact during the construction phase. It may periodically and temporarily disturb wildlife in the immediate vicinity of the site, or cause movement of wildlife away from the site to other ecologically suitable areas. Similarly, recreating humans may avoid this area due to noise during repairs, but as with wildlife, such disruption will be limited to the repair phase, and there are several comparable substitute recreation sites readily available within the area. The residential area and the other noise sensitive receptors adjacent to the proposed T-wall repairs will be temporarily impacted by the noise. The construction activities would be limited to operating between 8 AM and 5 PM. No long-term impacts would occur as a result of noise.

4.8 IMPACTS ON WATER QUALITY

In the short term, during the period of construction, earth moving activities may result in minor increases in turbidity in the immediate vicinity of the repair site to some degree. After repairs are completed, the sediments should stabilize rapidly.

4.9 IMPACTS ON HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Based on the findings of the HTRW survey, the probability of increased project cost or lost time from discovery and remediation of any contaminated materials during activities to repair the hurricane flood protection system is considered low. Information compiled by this assessment indicates additional HTRW investigations are not warranted at this time.

4.10 IMPACTS ON SOCIOECONOMICS

The proposed rehabilitation and repair work to the HFPP will not adversely impact socioeconomic resources in the vicinity of the project area. Completion of the work

should return the levee system's hurricane protection for the surrounding area to the level which existed prior to landfall from Hurricane Ike.

4.11 IMPACTS ON ENVIRONMENTAL JUSTICE

The execution of the proposed repairs would result in temporary and minor negative impacts to a largely minority and low-income population. The make-up of people living adjacent to the proposed T-wall and cover stone repairs do constitute a minority and low-income population. All negative impacts from the proposed repairs would be minor and temporary. However, the proposed repairs would not be considered a significant adverse effect. Additionally, the proposed repairs to the Port Arthur and Vicinity HFPP would provide long term benefits equally to all ethnic and socioeconomic groups within the project area.

4.12 IMPACTS ON PRIME AND UNIQUE FARMLANDS

Due to the location of the project site and the lack of suitable land for farming activities, the project would not have any impacts on prime or unique farmland.

4.13 IMPACTS ON RECREATIONAL RESOURCES

The noise arising from earthmoving activities during project construction are expected to discourage and decrease recreational activities in the vicinity of the site during repairs. Any such affect would be limited to the period of construction and should be minor; however, there are many comparable substitute recreation sites readily available within the area.

4.14 IMPACTS ON ROADWAYS AND TRAFFIC

Traffic from land-based construction equipment and vehicles would occur or increase at the site during the period of repairs. There may be temporary disruptions to traffic in the residential areas. However, the disruptions would be temporary and once the repairs are complete, all associated land-based project equipment and vehicular traffic would end.

5.0 MITIGATION

The proposed project would not impact wetlands, seagrass beds, or other special aquatic sites. There would not be any significant impacts to other resources. Therefore, compensatory mitigation would not be required.

6.0 CUMULATIVE IMPACTS

Petroleum-related industries, most prominently refining and crude oil terminal operations, dominate the area. These and other shipping-dependent industries, alongside commercial and recreational fisheries, agricultural production, and recreation and

conservation area (National Wildlife Refuges, State Parks, State Historic Sites, and Wildlife Management Areas), have influenced this area's land use history, navigation channel development and maintenance, coastal transportation trends, and regional economic and ecological importance to Texas (USACE 2008).

Past and present actions in the study area that have influenced the natural and human environment include: the Sabine Neches Water Way 40-foot Channel, the Neches River Saltwater Barrier, the Salt Bayou/McFaddin Ranch Saltwater Control Project, the beneficial use sites for GIWW - Port Arthur to High Island, the Sabine Neches Waterway Marine Organism Access, numerous habitat restoration projects, and the Sabine Pass LNG and Pipeline (USACE 2008).

Reasonably foreseeable future actions include: the Golden Pass LNG and Pipeline, the Kinder Morgan Louisiana Pipeline, the Texas Chenier Plain Conservation Plan, and the Sabine Neches Waterway 48-foot Channel (USACE 2008). The Jefferson County Drainage District Number 7 (JCDD7) will continue to maintain an obstruction free right-of-way to allow access to project features for maintenance, repairs, and annual inspections of the project. The JCDD7 has discussed the possibility of installing a permanent fence along the right-of-way for the T-Wall. Any permanent fence would not be built as a part of the Federal Flood Control and Coastal Emergencies (FCCE) project nor would it be funded with FCCE money.

As discussed in Section 4.0, the impacts associated with the proposed repairs are both minor and temporary. Therefore, the impacts from the proposed repairs are not significant even when considered cumulatively with impacts from past, present, and reasonably foreseeable future projects.

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

This EA has been prepared to satisfy the requirement 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 EA 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 construction of the HFPP was coordinated in an Environmental Statement dated July, 1974 (USACE 1974). No additional coordination is required since the proposed repairs will stay within the original footprint. However both the U.S. Fish and Wildlife Service and Texas Parks & Wildlife Department will have the opportunity to comment on the proposed repairs. Comments provided by the USFWS and the TPWD on fish and wildlife resources will be taken into consideration.

National Historic Preservation Act of 1966, as amended: This project was determined to be of such limited nature that it does not have the potential to cause effect on historic properties. This project is in compliance with the National Historic Preservation Act pursuant to 36 CFR 800.3(a).

Magnuson-Stevens Fishery Conservation Management Act: No significant impacts to living marine resources or essential fish habitat would occur as a result of the project. The draft EA is being coordinated with NMFS and comments from NMFS regarding fisheries and EFH will be included in Appendix A.

Coastal Zone Management Act of 1972: The proposed work involves repairs to the Port Arthur and Vicinity HFPP to restore areas of the existing system that were damaged by Hurricane Ike to pre-storm conditions and will not result in impacts to any coastal natural resource areas (e.g. tidal waters or submerged lands). This EA will be coordinated with the Coastal Coordination Council for compliance with the Texas Coastal Management Program.

Endangered Species Act of 1973, as amended: The USACE has prepared a draft Biological Assessment (BA) addressing all Federally listed threatened or endangered species in Jefferson County (see Appendix B). This draft BA will be provided to the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) for review and comment. The BA concluded that the proposed project would have no effect on any federally-listed threatened or endangered species or critical habitat.

Clean Air Act of 1972, as amended: General conformity under the Clear Air Act, Section 176 has been evaluated for this project according to the requirements of 40 CFR 93, Subpart B. The Requirements of this rule are not applicable to this project because it is exempt under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A), since it is impractical to prepare the conformity analysis which might otherwise be required and this project cannot be delayed due to the overriding concerns for public health and welfare, especially in view of the upcoming hurricane season.

On February 24, 2009 a Clean Air Act General Conformity Record of Non-Applicability was issued by the Corps of Engineers, Galveston District that exempted this project. In light of the complexities of execution of the emergency repairs, this exemption has been extended for an additional six months, through March 13, 2010, pursuant to 40 CFR 93.153(e)(2) and 30 TAC 101.30(c)(5)(B). This project is not considered regionally significant under 40 CFR 93.153(i).

Clean Water Act of 1977, as amended: The District evaluated the proposed action pursuant to Section 404 of the Clean Water Act and project impacts are summarized in a Section 404(b)(1) analysis, which is included in Appendix D. The Texas Commission on Environmental Quality has issued a waiver for Section 401 of the Clean Water Act for the proposed project (see Appendix C).

Executive Order 11990 – Protection of Wetlands: The Port Arthur and Vicinity HFPP project footprint is entirely within the footprint of the previously existing, previously disturbed areas of the project footprint and will not result in new impacts to wetlands; therefore the project is in compliance with E.O. 11990.

Executive Order 12898 – Environmental Justice: The proposed project would not have a disproportionate adverse impact on minority or low-income population groups within the project area.

CEQ Memorandum Dated August 11, 1980 – Prime or Unique Farmlands: The proposed project will not impact any lands considered prime or unique.

Executive order 11988 – Floodplain Management: The proposed project would not induce increased flooding in developed areas and would not contribute to increased future flood damages.

8.0 CONCLUSIONS

As presented in Section 4.0 – Environmental Consequences of Selected Alternative, the proposed project could result in temporary and minor impacts to the environment. The following conclusions summarize the findings of the EA:

- Wetlands will not be impacted by this project.
- Wildlife may be temporarily affected by minor impacts during repairs.
- Fisheries and EFH would experience minor, temporary impacts. No mitigation is required for EFH as a result of the project. Consultation has been initiated with the NMFS.
- There would be no effect on federally-listed threatened or endangered species as a result of the proposed project.
- The proposed repairs have no potential to affect Historic Properties.
- Implementation of the proposed action would result in temporary noise impacts to local residents from construction equipment however the impacts would not be significant.
- Emissions from the proposed project would not be locally or regionally significant.
- There would be no long-term impact to water quality from the proposed repairs.
- There would be no hazardous, toxic, or radioactive waste impacts from the proposed project.

- The repairs would not impact socioeconomic resources either locally or regionally.
- There are no prime or unique farmlands in the project area.
- Recreational resources may be temporarily affected by minor noise impacts during repairs.
- Roadways and traffic may be temporarily impacted during repairs.
- 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.

9.0 LITERATURE CITED

USACE. 1974. Final Environmental Statement: Port Arthur Hurricane Flood Protection, Port Arthur and Vicinity, Texas.

USACE. 2006. Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System. Performance Evaluation Plan and Interim Status Series.

USACE. 2008. Unreleased Draft Environmental Impact Statement for Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana, Volume II and Appendices A-B Volume III.

Appendix A - Project Coordination

PUBLIC SCOPING MEETING SCHEDULED TO PRESENT INFORMATION REGARDING PROPOSED EMERGENCY REPAIRS TO THE PORT ARTHUR & VICINITY FEDERAL HURRICANE FLOOD PROTECTION PROJECT

WEDNESDAY, MARCH 18, 2009 – Port Arthur City Hall

Storm surge and wave action from Hurricane Ike caused severe damage to the levee system of the Port Arthur Federal Hurricane Flood Protection Project. Emergency repairs are proposed. The Galveston District of the U. S. Army Corps of Engineers (USACE) will hold a public scoping meeting in accordance with requirements of the National Environmental Policy Act (NEPA) to present information and accept written comments from stakeholders regarding proposed repair activities. The scoping meeting will begin as an "open house" at 6 PM. Information on the project will be displayed and staff will be available to answer questions. At 7 PM, a formal presentation will be given by USACE staff, the local sponsor (Jefferson County Drainage District #7), and engineering consultants. Following the presentations, the open house will resume and continue until 8:30 PM. Written comments will be accepted at the meeting or by mail.

The scoping meeting will be held on Wednesday, March 18, 2009 in the City Council Chambers at the Port Arthur City Hall. The location of the Port Arthur City Hall is *444 4th Street, Port Arthur, TX 77640.* Those unable to attend but wishing to submit comments may do so until April 16, 2009. Comments should be directed to Jerry L. Androy, at *Jerry.L.Androy@usace.army.mil* or *(409)-766-3821.* Written comments may be mailed to the following address:

Jerry Androy
U.S. Army Corps of Engineers Galveston District
P. O. Box 1229
Galveston, Texas 77553-1229

REUNIONES PÚBLICAS DE EVALUACIÓN PROGRAMADAS PARA PRESENTAR INFORMACIÓN SOBRE LAS REPARACIONES DE EMERGENCIA PROPUESTAS AL SISTEMA DE DIQUES DE PORT ARTHUR

MIÉRCOLES, 18 DE MARZO DE 2009 – Ayuntamiento de la Ciudad de Port Arthur

Las oleadas de la tempestad y la acción de las olas provocada por el huracán Ike causaron daños graves al sistema de diques del Proyecto Federal de Protección contra Inundaciones de Huracanes de Port Arthur. Por lo mismo, se proponen reparaciones de emergencia. El Distrito de Galveston y el Cuerpo de Ingenieros del Ejército de los Estados Unidos (USACE, por sus siglas en inglés) llevarán a cabo una reunión pública de evaluación, de acuerdo con los requisitos de la Ley Nacional de la Política del Medio Ambiente (NEPA, por sus siglas en inglés), con el fin de presentar información y recibir comentarios por escrito de las personas interesadas, con respecto a las obras de reparación propuestas. La reunión de evaluación comenzará como "casa abierta" alas 6:00 p. m. La información sobre el proyecto será puesta a exhibición y habrá personal disponible para responder preguntas. A las 7:00 p.m., el personal de USACE, el patrocinador local (El Distrito del Drenaje # 7 del Condado de Jefferson) y los asesores de ingeniería llevarán a cabo una presentación formal. Después de las presentaciones, se reanudará la casa abierta, la cual continuará para terminar a las 8:30 p.m. Se aceptarán comentarios por escritos durante la reunión o por correo.

La reunión de evaluación se llevará a cabo el miércoles 18 de marzo de 2009, en los salones del Concejo de la Ciudad en el Ayuntamiento de Port Arthur. El Ayuntamiento de la Ciudad de Port Arthur se encuentra localizado en el 444 de la Calle 4ª, Port Arthur, Texas 77640. Quienes se vean imposibilitados de asistir pero deseen presentar sus comentarios, pueden hacerlo antes del 16 de abril de 2009. Los comentarios deberán dirigirse a la atención del Sr. Jerry L. Androy, en *Jerry.L.Androy@usace.army.mil* o al *(409)-766-3821.* Asimismo, se invita al público a enviar sus comentarios por escrito a la dirección siguiente:

Jerry Androy
Cuerpo de Ingenieros del Ejército de los Estados Unidos
Distrito de Galveston
P. O. Box 1229
Galveston, Texas 77553-1229

BUỔI HỌP THẨM TRA CÔNG KHAI ĐƯỢC ẤN ĐỊNH ĐỂ TƯỜNG TRÌNH THÔNG TIN VỀ NHỮNG SỰ SỬA CHỮA KHẨN CẤP HỆ THỐNG ĐÊ ĐIỀU CỦA PORT ARTHUR

THỨ TƯ, THÁNG BA 18, 2009 – Port Arthur City Hall

Tác động của sóng và giông bão do Cơn Bão Ike đã gây ra thiệt hại nghiêm trọng cho đê điều của Dự Án Liên Bang Phòng Chống Bão Lụt của Port Arthur. Những sửa chữa khẩn cấp được đề ra. The Galveston District of the U.S. Army Corps of Engineers (USACE) sẽ tổ chức một buổi họp công khai thẩm tra theo đúng những qui định của the National Environment Policy Act (NEPA) để trình bày thông tin và tiếp nhận những góp ý viết từ những người có lợi ích về những hoạt động sửa chữa được đề nghị. Buổi họp thẩm tra sẽ bắt đầu như một "sự thăm viếng dành cho công chúng" lúc 6 giờ chiều. Thông tin về dự án sẽ được trưng bày và nhân viên sẽ sẵn sàng giải đáp các thắc mắc. Lúc 7 giờ chiều, sự tường trình chính thức sẽ được diễn đạt bởi nhân viên USACE, nhà bảo trợ địa phương (Jefferson County Drainage District # 7), và những kỹ sư tư vấn. Tiếp theo những tường trình, sự thăm viếng dành cho công chúng sẽ tái tục và kéo dài tới 8 giờ 30 tối. Những góp ý viết sẽ được tiếp nhận tại buổi họp hoặc qua thư tín.

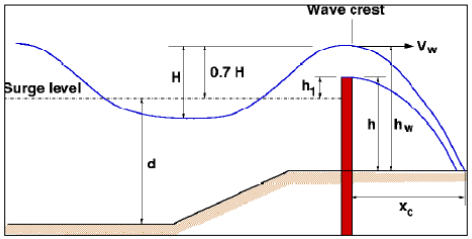
Buổi họp thẩm tra sẽ được tổ chức vào Thứ Tư, Tháng Ba 18, 2009 ở City Council Chambers tại Port Arthur City Hall. Địa điểm của Port Arthur City Hall là 444 4th Street, Port Arthur, Texas 77640. Những người không thể tham dự nhưng muốn nộp góp ý có thể làm như vậy cho tới Tháng Tư 16, 2009. Những góp ý nên gởi thẳng cho Jerry L. Androy, tại *Jerry.L.Androy@usace.army.mil* hoặc *(409)-766-3821.* Những góp ý viết có thể gởi về địa chỉ sau:

Jerry Androy
U. S. Army Corps of Engineers Galveston District
P. O. Box 1229
Galveston, Texas 77553-1229

Emergency Repairs to
Hurricane/Shore Protection Project
Port Arthur and Vicinity

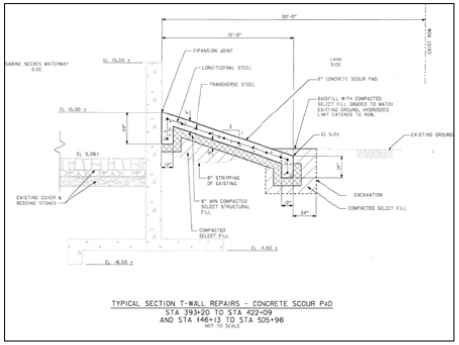
JEFFERSON COUNTY DRAINAGE DISTRICT 7

US Army Corps of Engineers ®
Galveston District



Floodwall of Industrial Canal Levee, Post-Hurricane Katrina, New Orleans

T-Wall Repairs Site Location, Port Arthur, Texas



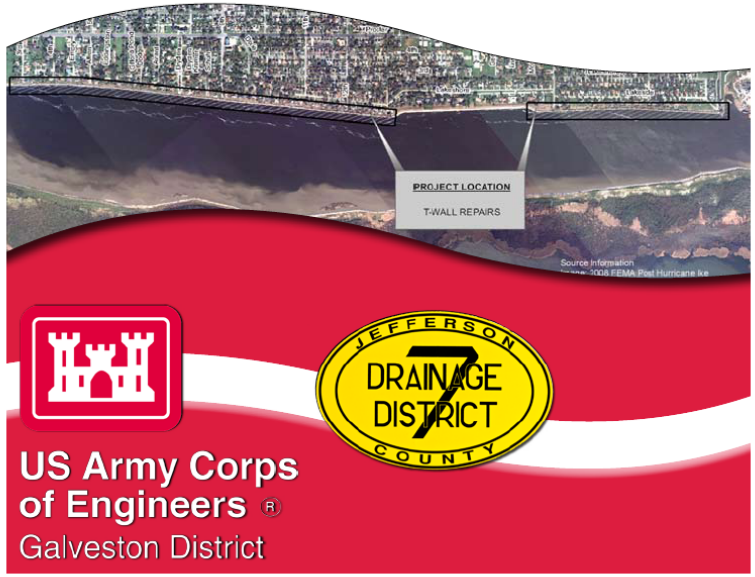
Emergency Repairs to Hurricane/Shore Protection Project

Port Arthur and Vicinity

PUBLIC SCOPING MEETING

The History of the Port Arthur Hurricane Flood Protection Project

The Port Arthur and Vicinity Hurricane Flood Protection Project ("the Project") dates back to 1962, when the 87th United States Congress approved measures to protect areas from hurricane storm surge and flooding damage. This protection included raising existing floodwalls and levees, constructing new floodwalls and new levees, improving highway and street ramps, providing roadway and rail closure structures, building new gravity drainage structures, modifying existing pumping stations and creating new ones as well. These measures were constructed to protect Port Arthur and Vicinity, including the Cities of Groves, Lakeview, Pear Ride, Port Acres and Griffing Park from a hurricane surge up to 14 feet above sea level. Now, 34.4 miles of levees and floodwalls protect an area encompassing approximately 60 square miles.



Why Emergency Repairs are needed now….

On September 13, 2008, Hurricane Ike made landfall in the Port Arthur and East Texas coastal area. Storm surge greater than 12 feet above mean sea level was experienced, causing extensive damage over the entire region. Ike caused significant damage to the Project at several locations.

The Project protects not only the Port Arthur community, but also protects a significant amount of the nation's petrochemical production capacity. Because the 2009 hurricane season is rapidly approaching (beginning on June 1), immediate emergency repairs are required.

Planned Repairs

The U.S. Army Corps of Engineers—Galveston District and the Jefferson County Drainage District No. 7 propose several repairs to restore the Project to its pre-Ike condition, including:

- Prevention of further erosion along portions of the levee toe, using riprap and stabilizing vegetation
- Prevention of further erosion along the T-wall by replacing the eroded areas with a concrete "scour pad" in accordance with new guidance developed post-Hurricane Katrina
- Repairs of cover stone damage using various methods depending on the type of damage in each location – including use of riprap in place of cover stone
- Repair of the Taylors Bayou slope failure by removing and improving the soil at slope failure areas

See the figures on Page 4 of this brochure for T-wall construction location information.

What You Can Expect During the Construction Process…

These much needed repairs will be constructed as quickly and efficiently as possible. As with any construction project, residents and businesses in the area will experience temporary inconveniences, such as increased truck and heavy equipment traffic, noise during daylight hours, and dust. Some residents whose yards abut the levee will experience construction activities in the county-owned easement immediately adjacent to their yards. Structures that have been installed by homeowners within this easement may have already been removed by the Jefferson County Drainage District No. 7, and any additional structures remaining in the easement will be removed as construction proceeds. Homeowners must remove their belongings from these areas prior to construction start.

Please note that field adjustments may be made during the construction process.

We are listening and we are asking for your comments…..

The purpose of this public scoping meeting is to provide you with an opportunity to learn about the needed repairs and to give us your comments and tell us your concerns. Comments will be accepted at this meeting in writing, using the comment forms provided.

If you like, you can take the form home, complete it and return it by mail. Please feel free to take extra forms with you to share with your neighbors.

Written comments will be accepted until April 16, 2009. Please send your written comments to the address on the form, which is the address given here for Jerry Androy at the U.S. Army Corps of Engineers *(see address listed below)*.

What alternatives were considered……

There are only two alternatives to consider for this emergency repair project. Those are:

1. Complete the required repairs
   OR
2. Take no action and do not repair the Project.

What happens if "no action" is taken?
Without the needed repairs, the Project is compromised and a significant amount of life and property will be at risk during the next and subsequent hurricane seasons.

FEMA flood insurance rates *may be* affected for area residents if the Project is not restored using these post-Katrina guidelines.

Who to Contact for more information…..

The contact for the U. S. Army Corps of Engineers—Galveston District is:
Jerry Androy
U. S. Army Corps of Engineers—Galveston District
P. O. Box 1229
Galveston, Texas 77553-1229
Phone: 409-766-3821

For Jefferson County Drainage District No. 7:

Phil Kelley, General Manager
Jefferson County Drainage District No. 7
4401 Ninth Avenue
Port Arthur, Texas 77642
Phone: 409.985.4369

US Army Corps of Engineers®
Galveston District

Emergency Repairs to Hurricane/Shore Protection Project
Port Arthur and Vicinity
PUBLIC SCOPING MEETING

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

April 10, 2009

NOTICE OF AVAILABILITY

U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT ENVIRONMENTAL ASSESSMENT FOR EMERGENCY REPAIRS TO THE PORT ARTHUR AND VICINITY HURRICANE/SHORE FLOOD PROTECTION PROJECT

PURPOSE

This notice is being distributed to interested State, Federal, and local agencies, private organizations, news media, and individuals in order to assist in collecting facts and recommendations concerning proposed rehabilitation and repair work that will restore the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project to pre-storm conditions following damages sustained from Hurricane Ike, which made landfall in northern Galveston County on September 13, 2008. The proposed rehabilitation and repair work is necessary to restore the project to its pre-storm levels of protection and safety consistent with current designs and sound engineering principles. The proposed work will not result in an expansion of the existing project.

NEED FOR WORK

Hurricane Ike made landfall in northern Galveston County on September 13, 2008. Before making landfall the hurricane was a Category 4 storm, as measured on the Saffir-Simpson Scale. Wind speeds decreased as it approached land, and the storm was classified as a Category 2 storm when it reached land. The magnitude of the storm surge was more characteristic of a Category 3 or 4 storm than a Category 2 storm. According to the National Hurricane Center, Ike was a very large hurricane with hurricane force winds extending 120 miles from the center and tropical storm force winds extending 275 miles. Hurricane Ike's unprecedented size, which at one point was the largest Atlantic hurricane ever recorded, caused extensive damage. Ike ranks as the third costliest storm in U.S. history, causing approximately $27 billion in property damage. The proposed work would be conducted under authority of Public Law 84-99 for Flood Control and Coastal Emergencies. Engineer Regulation (ER) 500-1-1 eligibility requirements for the work are met under the criteria for extraordinary storm and significant amount of damage.

The combined storm surge and wave action from Hurricane Ike caused extensive damage to the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project. The proposed rehabilitation work will include repairs that will restore this project to pre-storm conditions. If this project is left in its current condition, the risk of structural failure and potential damages the project may sustain during future significant storm events could threaten the communities and properties they protect.

PROJECT DESCRIPTION AND LOCATION

The Port Arthur and Vicinity, Texas, Hurricane-Flood Protection Project is located at Port Arthur, Jefferson County, in the extreme southeastern part of Texas, on the west side of Sabine Lake. The project, which consists of levees and floodwalls surrounding a 60 square mile area, was designed to protect Port Arthur and other communities in the vicinity, including the cities of Groves, Lakeview, Pear Ride, Port Acres, and Griffing Park, from a hurricane with a storm surge up to 14 feet.

DESCRIPTION OF REHABILITATION AND REPAIR WORK

Storm surge and wave action from Hurricane Ike, which was recorded at 12 feet in the project area, caused significant damage from erosion to four main areas of the Port Arthur and Vicinity HFPP. The Port Arthur and Vicinity HFPP will be restored the pre-storm cross-sections and/or conditions by making repairs to the following areas that were damaged by erosion (Figure 1):

- Erosion at the Levee Toe - Station 262+00 to 270+00, where significant shoreline erosion ranged from 15 to 25 feet
- Erosion at the T-Wall - Stations 380+00 to 410+00 and 430+00 to 490+00, where the concrete floodwall (T-Wall) structure protecting residential sections of the Port Arthur area sustained over-splash causing erosion of one to two feet along the protected side at the base of the structure.
- Cover Stone Damage - Stations 410+00 to 430+00 and 490+00 to 610+00, where the waterway's cover stone is damaged in twelve locations from subgrade erosion or toe failure of the slope.
- Taylor Bayou Slope Failure - The Taylor Bayou area has multiple instances of slope failure along its levee which are reported to have occurred during the storm surge. Along the interior of the levee, there are multiple slope failures occurring from Sections 1110+00 to 1120+00 and 1250+00 to 1260+00. The exterior levee has a slope failure between Sections 1105+00 and 1140+00.

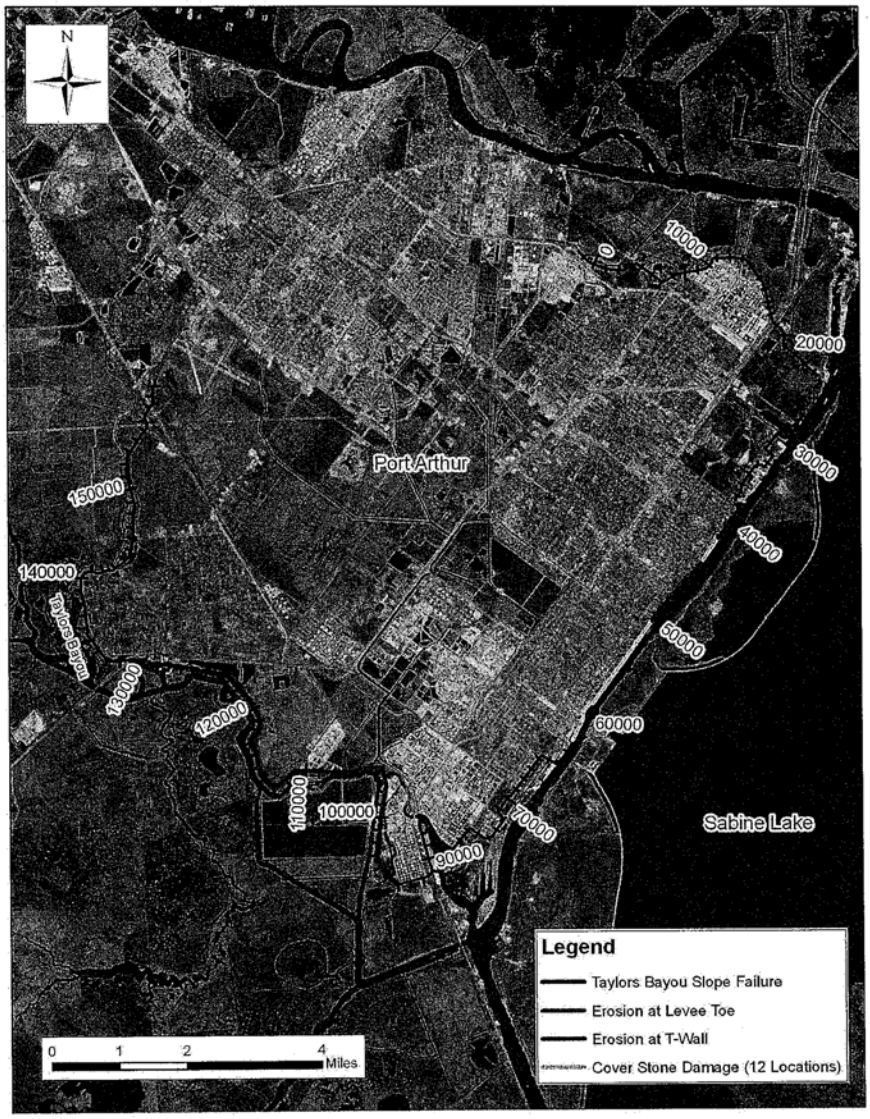


Figure 1. Port Arthur Levee Stationing and Proposed Repair Work

COMPLIANCE WITH LAWS AND REGULATIONS

A Draft Environmental Assessment (EA) is being coordinated with the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and other Federal, state, and local agencies. Consultation has been initiated with the USFWS and NMFS in compliance with the

Endangered Species Act. The Biological Assessment (Appendix B of the Draft EA) concludes that the project is not likely to adversely affect the threatened or endangered species in the project area.

The EA also initiates Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The initial determination is that the proposed actions will not have adverse impacts on EFH or federally-managed fisheries in the Gulf of Mexico. The final determinations relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

The proposed rehabilitation and repair work will also be evaluated, as appropriate, with regard to the requirements of Section 404(b)(1) of the Clean Water Act (CWA). The Texas Council on Environmental Quality (TCEQ) has waived Clean Water Act Section 401 Certification for this project in recognition that impacts from the proposed work are minor and temporary in nature, and to expedite Hurricane Ike recovery efforts. It should be noted that this project would qualify under Corps of Engineers Nation Wide Permit 3, and as such, would require no further CWA coordination.

It is also our preliminary determination that the proposed action is consistent with the Texas Coastal Management Program (TCMP) to the maximum extent practicable.

A record of non-applicability has been issued for general conformity under the Clean Air Act (CAA), Section 176 according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project because the project is an exempt action under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A) and 40 CFR 93.153(e)(2) and 30 TAC 101.30(c)(5)(B).

The proposed activity will be coordinated with the State Historic Preservation Officer (SHPO). Our initial determination is that the proposed action does not have the potential to effect historic properties.

The following is a partial list of Federal, State, and local agencies with which this activity is being coordinated:

U.S. Environmental Protection Agency, Region 6
U.S. Department of Commerce
U.S. Department of the Interior
Texas Historical Commission
Texas Parks and Wildlife Department
Texas Commission on Environmental Quality
Texas General Land Office
Coastal Coordination Council

Texas Department of Transportation
Texas Water Development Board

EVALUATION FACTORS

The decision whether to proceed with this repair project will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for protection and utilization of important resources as well as public and environmental safety and economic concerns. The benefit, which reasonably may be expected to accrue from the proposals, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal, will be considered. The proposed repair project will proceed unless found contrary to the overall public interest.

ENVIRONMENTAL DOCUMENTATION

It is anticipated that Environmental Assessment and Finding of No Significant Impact will fulfill the requirements of the National Environmental Policy Act. Single copies of these documents will be available by written request to the address below. The draft EA is also available online for review in the "Hot Topics" section at: http://www.swg.usace.army.mil/.

PUBLIC COMMENT

Persons desiring to express their views or provide information to be considered in evaluating the impact of this work and the future maintenance and operations are requested to mail their comments within 30 days of the date of this notice to:

District Engineer
U.S. Army Engineer District, Galveston
ATTN: CESWG-PE-PR, Ms. Carolyn Murphy
P.O. Box 1229
Galveston, Texas 77553-1229

or email at: Carolyn.e.murphy@usace.army.mil; or phone 409-766-3044.

The comments should make specific reference to the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project. Any person who has an interest which may be affected by this action may request a public hearing. The request must be submitted in writing within 10 days of the date of this notice and must clearly set forth the interest which may be affected and the manner

in which the interest may be affected by this activity. Any questions concerning the proposed action may be directed to Ms. Carolyn Murphy at (409) 766-3044, or the email address above.

David C. Weston
Colonel, Corps of Engineers
District Engineer

Appendix B – Biological Assessment

DRAFT BIOLOGICAL ASSESSMENT FOR FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES FOR EMERGENCY REPAIRS TO THE PORT ARTHUR AND VICINITY HURRICANE/SHORE FLOOD PROTECTION PROJECT PORT ARTHUR, JEFFERSON COUNTY, TEXAS

1.0 INTRODUCTION

1.1 PURPOSE OF THE BIOLOGICAL ASSESSMENT

This Biological Assessment (BA) is being prepared for the purpose of fulfilling the U.S. Army Corps of Engineers (USACE) requirements as outlined under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. The proposed Federal action is the emergency repairs to the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project (HFPP), Jefferson County, Texas. This BA is being prepared to assist the U.S. Fish and Wildlife Service (USFWS) personnel in fulfilling their obligations under the ESA.

1.2 DESCRIPTION OF THE PROPOSED ACTION

The Port Arthur and Vicinity HFPP will include several repairs that will restore it to its pre-storm condition (Figure 1). The following describes the proposed work for all of the areas.

Erosion at Levee Toe: In order to prevent further erosion, riprap and vegetation would be provided from Station 262+00 to 270+00 along the scarp which has developed. Riprap would be placed along the damaged area in order to prevent further erosion and restore the area to pre-storm conditions. This improvement would be consistent with ER 500-1-1 as it would provide a system which is consistent with current designs and sound engineering principles. Along with the riprap placement, the vegetation and levee grade would be restored to pre-storm condition.

Erosion at T-Wall: Along the protected side of the concrete floodwall, the eroded topography would be replaced with a concrete scour pad, in accordance with the “New Orleans Hurricane Katrina Lessons Learned” and the “Performance Evaluation Status and Interim Results Report Series.” Along with the concrete placement, the remaining area

adjacent to the scour pad would be graded and vegetated to match existing adjacent ground elevations.

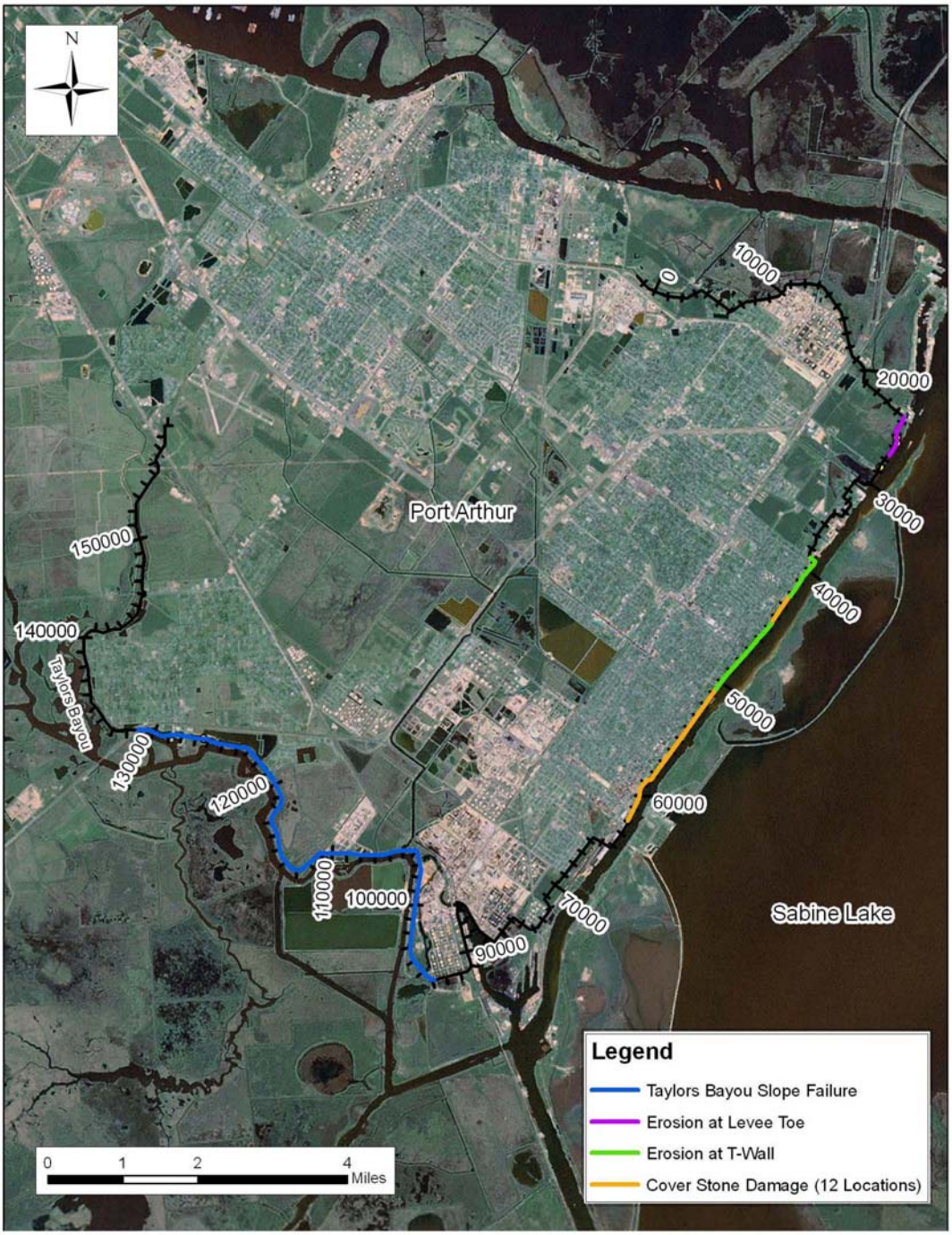


Figure 1. Port Arthur Levee Stationing and Proposed Repair Work.

<u>Cover Stone Damage:</u> At the damaged armor stone locations, the repairs would be based on the type of failure. If it is determined to be a localized erosion failure, then the cover stone or stones would be removed and the void would be filled with riprap. Once the void

is filled, the cover stone would be put back in place. If it is determined to be toe failure, then the toe of the slope would be stabilized by riprap to increase slope stability.

Taylor Bayou Slope Failure: The repairs would consist of removing and improving the soil within the failed section. This soil would be used to restore the failed section. The following steps are a potential sequence of construction:

1) Over excavate the failed section,
2) Improve the material from the failed section through cement or lime stabilization,
3) Compact material in-place, and
4) Plant and re-establish the vegetation.

2.0 FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES

The project area is in Jefferson County, Texas. The USFWS and National Marine Fisheries Service (NMFS) consider the threatened or endangered species contained in Table 1 as possibly occurring in the county. No other species, and no designated or proposed critical habitat under their jurisdiction were identified as possibly occurring in the project vicinity.

Table 1. Federally Listed Threatened and Endangered Species – Jefferson County, Texas

Common Name	Scientific Name	USFWS Status[1]	NMFS Status[2]
	Marine Mammals		
Blue whale	*Balaenoptera musculus*	Endangered	Endangered
Finback whale	*Balaenoptera physalus*	Endangered	Endangered
Humpback whale	*Megaptera novaengliae*	Endangered	Endangered
Sei whale	*Balaenoptera borealis*	Endangered	Endangered
Sperm whale	*Physeter macrocephalus*	Endangered	Endangered
	Fish		
Smalltooth sawfish	*Pristis pectinata*	Endangered	Endangered
	Reptiles		
Green Sea Turtle	*Chelonia mydas*	Threatened	Threatened
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered	Endangered
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Endangered	Endangered
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	Endangered	Endangered

Loggerhead Sea Turtle	*Caretta caretta*	Threatened	Threatened
	Birds		
Piping Plover	*Charadrius melodus*	Threatened	N/A

1 USFWS, 2009. www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm
2 NOAA/NMFS, 2009. http://sero.nmfs.noaa.gov/pr/pdf/Texas.pdf

Jefferson County does not contain designated critical habitat for any of these species.

2.1 GREEN SEA TURTLE

Adult green sea turtles are herbivores, feeding primarily on seagrasses and algae (NMFS 2009a). 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). It is unlikely that this species would occur in the project area.

2.2 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 (TDWP 2009a). It is rare along the Texas coast. Due to its rarity, it is not likely to occur in the project area.

2.3 HAWKSBILL SEA TURTLE

Hawksbill turtles are most commonly associated with coral reef habitats (NMFS 2009b). 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.

2.4 KEMP'S RIDLEY SEA TURTLE

The Kemp's Ridley sea turtle is the rarest sea turtle in the world. Only juveniles are expected in the bays, as adults seem confined to the Gulf. Their 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. A secondary nesting population has been established on Padre Island National Seashore (TPWD 2009b). In recent years, there has been an increase in the number of Kemp's Ridley nests reported

along the Texas coast. During the 2007 nesting season, there were reports of nesting at eleven localities, from Bolivar Peninsula to Boca Chica Beach. It is unlikely that this species would occur in the project area.

2.5 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 2009c). They are found worldwide. The major nesting beaches are located in the southeastern United State, primarily along the Atlantic coast of Florida, North Carolina, South Caroline, 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 and 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 2009). There is potential for this species to occur at the project site, however, it is very unlikely.

2.6 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 (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)). There is no beach zone in the project area; therefore, the presence of piping plovers in the project area is unlikely.

3.0 EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

3.1 EFFECTS ON SEA TURTLES

While sea turtles may occur in the project area, the proposed project would have no effect on any of these species.

3.2 EFFECTS ON PIPING PLOVER

The project would have no effect on the piping plover and no piping plover critical habitat is located near the proposed project area.

4.0 CONCLUSIONS

The overall conclusion is that the proposed project would have no effect on any federally-listed threatened or endangered species or critical habitat. Although several threatened or endangered species may occur in the project vicinity, no regularly used habitat is known to exist in the immediate project site. 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 repairs.

References Cited

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USFWS (U.S. Fish and Wildlife Service). 2009. "Loggerhead Sea Turtle (Caretta caretta)." Sea turtle fact sheets. North Florida Field Office. http://www.fws.gov/northflorida/Sea Turtles/Turtle%20Factsheets/loggerhead-sea-turtle.htm (10 February 2009).

Federal and State Listed Threatened or Endangered Species

Federal Species			
Taxon	**Common Name**	**Scientific Name**	**Federal Status**
Marine Mammals	Blue whale	*Balaenoptera musculus*	Endangered
	Finback whale	*Balaenoptera physalus*	Endangered
	Humpback whale	*Megaptera novaengliae*	Endangered
	Sei whale	*Balaenoptera borealis*	Endangered
	Sperm whale	*Physeter macrocephalus*	Endangered
Fish	Smalltooth sawfish	*Pristis pectinata*	Endangered
Bird	Piping plover	*Charadrius melodus*	Threatened
Reptiles	Loggerhead sea turtle	*Caretta caretta*	Threatened
	Green sea turtle	*Chelonia mydas*	Threatened
	Leatherback sea turtle	*Dermochelys coriacea*	Endangered
	Atlantic hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
	Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered
State Species			
Taxon	**Common Name**	**Scientific Name**	**State Status**
Birds	Piping Plover	*Charadrius melodus*	Threatened
	Reddish Egret	*Egretta rufescens*	Threatened
	Swallow-tailed Kite	*Elanoides forficatus*	Threatened
	American Peregrine Falcon	*Falco peregrinus anatum*	Endangered
	Arctic Peregrine Falcon	*Falco peregrinus tundrius*	Threatened
	Bald Eagle	*Haliaeetus leucocephalus*	Threatened
	Wood Stork	*Mycteria americana*	Threatened
	Brown Pelican	*Pelecanus occidentalis*	Endangered
	White-faced Ibis	*Plegadis chihi*	Threatened
Mammals	Red wolf	*Canis rufus*	Endangered
	Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	Threatened
	Black bear	*Ursus americanus*	Threatened
	Louisiana black bear	*Ursus americanus luteolus*	Threatened
Reptiles	Loggerhead sea turtle	*Caretta caretta*	Threatened
	Northern scarlet snake	*Cemophora coccinea copei*	Threatened
	Green sea turtle	*Chelonia mydas*	Threatened
	Timber/Canebrake rattlesnake	*Crotalus horridus*	Threatened
	Leatherback sea turtle	*Dermochelys coriacea*	Endangered
	Atlantic hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
	Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered
	Alligator snapping turtle	*Macrochelys temminckii*	Threatened
	Texas horned lizard	*Phrynosoma cornutum*	Threatened

Appendix C – Air Certification Waivers

ADDENDUM

GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY

Project/Action Name: Emergency Repairs under PL 84-99 (Flood Control and Coastal Emergency Act) to Galveston Seawall and Groins; Port Arthur, Freeport, and Texas City and Vicinity Hurricane and Flood Protection Projects; Clear Creek Second Outlet; White Oak Bayou; and North Padre Island Storm Damage Reduction and Environmental Restoration Project, Texas.

Project/Action Point of Contact: Carolyn Murphy
Chief, Environmental Section
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229, Galveston, TX 77553

General Conformity under the Clean Air Act, Section 176 has been evaluated for the seven projects described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to these projects because the projects are exempt actions under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A) since it is impractical to prepare the conformity analyses which might otherwise be required and the actions cannot be delayed due to overriding concerns for public health and welfare, especially in view of the upcoming hurricane season.

On February 24, 2009 I issued a Clean Air Act General Conformity Record of Non-Applicability which exempted the first four projects listed above, effective through September 13, 2009. In light of the complexities of execution of emergency repairs for these projects, I have now further determined for the reasons stated above that it is appropriate to extend this exemption pursuant to 40 CFR 93.153(e)(2) and 30 TAC 101.30(c)(5)(B) for an additional six months, through March 13, 2010. The extended exemption is also determined applicable to the last three projects listed above to likewise address complexities in repair execution.

The projects are not considered regionally significant under 40 CFR 93.153(i). Supporting documentation appears in the Project Information Reports and National Environmental Policy Act documentation for these actions.

4 APR 2009

David C. Weston
Colonel, Corps of Engineers
District Commander

Date

GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY

Project/Action Name: Emergency Repairs under PL 84-99 (Flood Control and Coastal Emergency Act) to Galveston Seawall and Groins, and the Port Arthur, Freeport, and Texas City and Vicinity Hurricane and Flood Protection Projects, Texas.

Project/Action Point of Contact: Carolyn Murphy
Chief, Environmental Section
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229, Galveston, TX 77553

General Conformity under the Clean Air Act, Section 176 has been evaluated for the projects described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to these projects because the projects are exempt actions under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A) since it is impractical to prepare the conformity analyses which might otherwise be required and the actions cannot be delayed due to overriding concerns for public health and welfare, especially in view of the upcoming hurricane season.

The projects are not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation appears in the Project Information Reports and National Environmental Policy Act documentation for these actions.

for Edward P. Rey 24 FEB 09

David C. Weston
Colonel, Corps of Engineers
District Commander

Date

Appendix D – 404(b)(1) Evaluation and 401 Certification Waiver

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

PROPOSED PROJECT: EMERGENCY REPAIRS TO THE PORT ARTHUR AND VICINITY HURRICANE/SHORE FLOOD PROTECTION PROJECT PORT ARTHUR, JEFFERSON COUNTY, TEXAS

	Yes	No*
1. Review of Compliance (230.10(a)-(d))		
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*
2. Technical Evaluation Factors (Subparts C-F) (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**	
	Not Applicable	**Not Significant**	**Significant***
2. Technical Evaluation Factors (Subparts C-F) (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
3. Evaluation of Dredged or Fill Material (Subpart G)	
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	**N/A**
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	**N/A**
6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	**N/A**
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	**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 dredged 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
4. Placement Site Delineation (230.11(f))	
a. The following factors as appropriate, have been considered in evaluating the placement site:	**N/A**
1) Depth of water at placement site	
2) Current velocity, direction, and variability at placement site	
3) Degree of turbulence	
4) Water column stratification	
5) Discharge vessel speed and direction	
6) Rate of discharge	
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	
8) Number of discharges per unit of time	
9) Other factors affecting rates and patterns of mixing (specify)	

List appropriate references:

	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.	**N/A**	

	Yes	No
5. Actions to Minimize Adverse Effects (Subpart H)		
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) Selecting a disposal site that has been used previously for dredged/fill material discharge; and

(2) Selecting a disposal site at which the substrate is composed of material similar to that being discharged, such as discharging sand on sand or rock on rock.

	Yes	No*
6. Factual Determination (230.11)		
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	

7. Evaluation Responsibility	
a. This evaluation was prepared by:	**Jerry Androy**
Position:	**Archeologist**

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

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	

Date	CAROLYN MURPHY Chief, Environmental Section

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.

Buddy Garcia, *Chairman* -
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

Ms. Carolyn Murphy
U.S. Army Corps of Engineers
Galveston District CESWG-PE-RE
P.O. Box 1229
Galveston, Texas 77553-1229

Re: USACE Emergency Repair and Restoration to Hurricane Ike Damaged Infrastructure.

Dear Ms. Murphy:

This letter is in response to the Texas Commission on Environmental Quality (TCEQ) review of preliminary information regarding the Emergency repairs to Clear Creek Federal Flood Control Project (FCP) Second Outlet Structure, White Oak Bayou FCP, The Galveston Seawall and Groins, and the Port Arthur, Freeport, and Texas City and Vicinity Hurricane and Shore Protection Projects. As currently proposed, the work will only restore the projects to pre-storm levels, with no improvements or expansion of the existing projects.

Recognizing that the impacts from the proposed work are minor and temporary, and in order to expedite these Hurricane Ike recovery efforts, the TCEQ waives the Clean Water Act Section 401 certification for these projects.

If you require additional information or further assistance, please contact Mr. Mark Fisher, Water Quality Assessment Section, Water Quality Division (MC-150), at (512) 239-4586.

Sincerely,

L'Oreal Stepney

L'Oreal W. Stepney P.E., Director
Water Quality Division

LWS/MF/sp

P.O. Box 13087 • Austin, Texas 78711-3087 • 512-239-1000 • Internet address: www.tceq.state.tx.us
printed on recycled paper using soy-based ink

Appendix E – TCMP Consistency Evaluation

COMPLIANCE WITH GOALS AND POLICIES - SECTION 501.34(a)-(b)
LEVEE AND FLOOD CONTROL PROJECTS
EMERGENCY REPAIRS TO THE
PORT ARTHUR AND VICINITY HURRICANE/SHORE
FLOOD PROTECTION PROJECT
PORT ARTHUR,
JEFFERSON COUNTY, TEXAS

Section 501.34 Levee and Flood Control Projects

(a) Drainage, reclamation, channelization, levee construction or modification, or flood- or floodwater-control infrastructure projects shall be designed, constructed, and maintained to avoid the impoundment and draining of coastal wetlands to the greatest extent practicable. If impoundment or draining of coastal wetlands cannot be avoided, adverse effects to the wetlands shall be mitigated in accordance with the sequencing requirements in §501.23 of this title.

Compliance: *The Port Arthur and Vicinity Hurricane/Shore Flood Protection Project (HFPP) is an existing federal levee/flood control project. The proposed work involves repairs to the Port Arthur and Vicinity HFPP to restore areas of the levee system that were damaged by erosion during Hurricane Ike to pre-storm cross-sections and/or conditions. The proposed repairs will not involve any new drainage, reclamation, channelization, levee construction or modification, or cause any new impoundment or draining of coastal wetlands.*

(b) TCEQ rules and approvals for the levee construction, modification, drainage, reclamation, channelization, or flood- or floodwater-control projects, pursuant to the Texas Water Code, §16.236, shall comply with the policies in this section.

Compliance: *The Port Arthur and Vicinity Hurricane Flood Protection Project (HFPP) is an existing federal levee/flood control project. The proposed work involves repairs to the Port Arthur and Vicinity HFPP to restore areas of the levee system that were damaged by erosion during Hurricane Ike to pre-storm cross-sections and/or conditions. The proposed repairs will not involve any new levee construction, modification, drainage, reclamation or channelization.*

STATEMENT OF FINDINGS
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR
EMERGENCY REPAIRS TO THE
PORT ARTHUR AND VICINITY HURRICANE/SHORE
FLOOD PROTECTION PROJECT
PORT ARTHUR,
JEFFERSON COUNTY, TEXAS
U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
GALVESTON, TEXAS

1. Purpose. This document addresses the proposed repairs to the levee system of the Port Arthur and Vicinity Hurricane/Shore Flood Protection Project (HFPP) that was damaged during Hurricane Ike. The project is located in Port Arthur, Jefferson County, Texas. Various sections of the Port Arthur and Vicinity HFPP suffered damage including erosion of the levee toe, erosion at the t-wall, damage to the cover stones, and slope failure along Taylor Bayou. Because the damage has contributed to several potential failure modes and any future storm could involve a unique combination of surge, duration and wave attack, it is nearly impossible to define a single remaining level of protection with the available data. The flooding could result from levee failure due loss of stability due to toe erosion or erosion under the cover stones, failure of the t-wall, or failure of the slope along Taylor Bayou. This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality (CEQ) regulations to document findings concerning the environmental impacts of the proposed action.

2. Proposed Action. Storm surge and wave action from Hurricane Ike caused severe damage to portions of the levee system of the Port Arthur and Vicinity HFPP. Rehabilitation and repairs to the Port Arthur and Vicinity HFPP will include the following actions:

- Erosion at Levee Toe: In order to prevent further erosion, riprap and vegetation would be provided from Station 262+00 to 270+00 along the scarp which has developed.
- Erosion at T-Wall: Along the protected side of the concrete floodwall, the eroded topography would be replaced with a concrete scour pad, in accordance with the "New Orleans Hurricane Katrina Lessons Learned" and the "Performance Evaluation Status and Interim Results Report Series."
- Cover Stone Damage: At the damaged armor stone locations, the repairs would be based on the type of failure. If it is determined to be a localized erosion failure, then the cover stone or stones would be removed and the

void would be filled with riprap. If it is determined to be toe failure, then the toe of the slope would be stabilized by riprap to increase slope stability.

- Taylor Bayou Slope Failure: The repairs would consist of removing and improving the soil within the failed section. This soil would be used to restore the failed section.

3. Coordination. A Public Notice and Notice of Availability was issued to interested parties including Federal and state agencies on April 9, 2009, which described the proposed action and announced the availability of the Draft EA. Comments on the public notice and Draft EA and the District's responses are included in Appendix A of the Final EA.

4. Environmental Effects. Galveston District has taken every reasonable measure to evaluate the environmental, social and economic impacts of the proposed project. Based on information provided in the EA and coordination with Federal, state, and local agencies, temporary and permanent effects resulting from the proposed project have been identified and can be found in Section 4 of the Final EA. The following resources and the effects of the repairs have been identified: wetlands will not be impacted by this project; wildlife may be temporarily affected by minor impacts during repairs; fisheries and EFH would experience minor, temporary impacts, however no mitigation is required for EFH as a result of the project; there would be no effect on federally-listed threatened or endangered species; the proposed repairs have no potential to affect Historic Properties; implementation of the proposed action would result in temporary noise impacts to local residents from construction equipment, however the impacts would not be significant; emissions from the proposed project would not be locally or regionally significant; there would be no long-term impact to water quality from the proposed repairs; there would be no hazardous, toxic, or radioactive waste impacts from the proposed project; the repairs would not impact socioeconomic resources either locally or regionally; there are no prime or unique farmlands in the project area; recreational resources may be temporarily affected by minor noise impacts during repairs; roadways and traffic may be temporarily impacted during repairs; no significant or adverse impacts to environmental resources are expected to occur as a result of implementation of the proposed project. All impacts to resources are expected to recover to pre-project conditions after the work is completed. The proposed project is expected to contribute beneficially to public health and safety and is not expected to contribute negative cumulative impacts to the area. It is the District's conclusion that the proposed project will not have a significant impact on the environment or to the surrounding human population.

5. Determinations. The proposed repairs to the Port Arthur and Vicinity HFPP were determined to be compliant with the following Federal legislation: the National Environmental Policy Act; Fish and Wildlife Coordination Act of 1958, as amended; National Historic Preservation Act of 1966, as amended; Magnuson-Stevens Fishery Conservation Management Act; Coastal Zone Management Act of 1972; Endangered Species Act of 1973, as amended; Clean Air Act of 1972, as amended; Clean Water Act of 1977, as amended; Executive Order 11990 – Protection of Wetlands; Executive Order

12898 – Environmental Justice; CEQ Memorandum Dated August 11, 1980 – Prime or Unique Farmlands; and Executive order 11988 – Floodplain Management.

6. Findings. Based on my analysis of the Final EA and other information pertaining to the proposed project, I find that the proposed repairs to the Port Arthur and Vicinity HFPP will not have a significant effect on the quality of the human environment. The Galveston District reviewed the project for consistency with the goals and policies of the TCMP. Based on this analysis, I find that the proposed plan is consistent with the goals and policies of the TCMP. After consideration of the information presented in the Final EA, I have determined that an environmental impact statement is not required under the provisions of NEPA, Section 102, and other applicable regulations of the U.S. Army Corps of Engineers, and that the proposed project may be constructed.

_____ (date)

_____
David C. Weston
Colonel, U.S. Army Corps of Engineers,
District Engineer