US Army Corps of Engineers
Galveston District

DRAFT
ENVIRONMENTAL ASSESSMENT
FOR
EMERGENCY REPAIRS TO GALVESTON SEAWALL AND GROINS SYSTEM
GALVESTON COUNTY, TEXAS

U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
GALVESTON, TEXAS
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1.0 PROPOSED ACTION

1.1 PROJECT DESCRIPTION

The Galveston Seawall and Groins System (Seawall and Groins) is a federally authorized project located in Galveston County, Texas. The Seawall and Groins provide hurricane and shore protection to portions of the City of Galveston beginning at the South Jetty located at Bolivar Roads and extending approximately 9.7 miles along Galveston Island's beach front on the Gulf of Mexico (Figure 1).

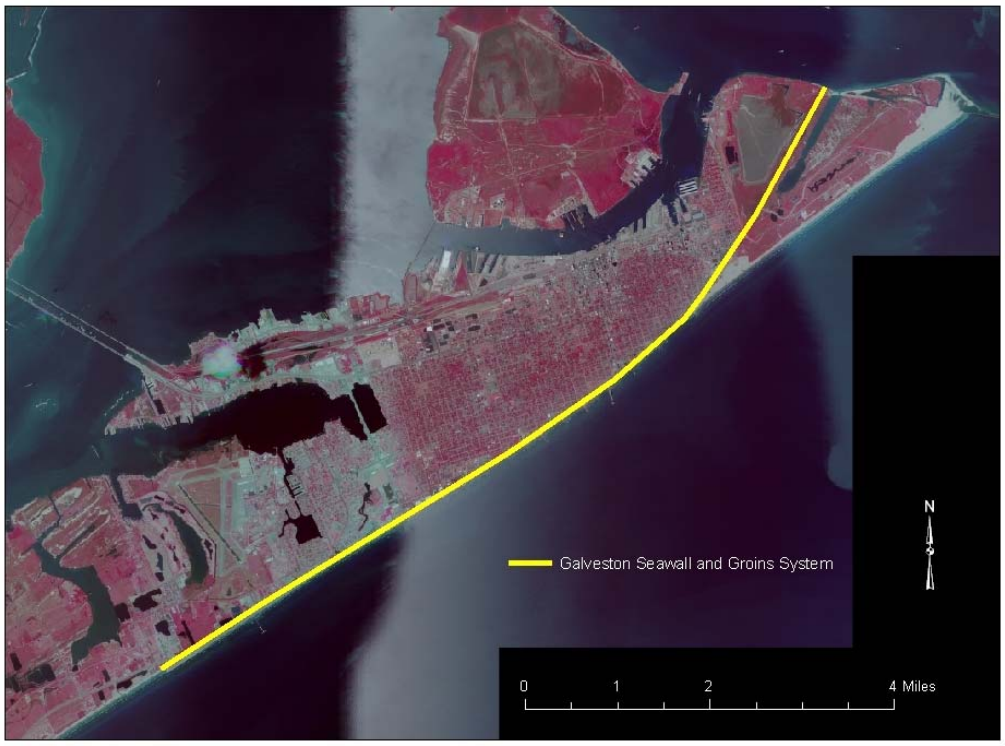

Figure 1. Galveston Island Seawall and Groins System.

The Seawall was designed and constructed to provide a high degree of protection for the City of Galveston against the destructive action of wind-driven tides and waves from the Gulf of Mexico. The original three miles of the Seawall, from 6th Street west to 39th Street, was completed in 1904. Five additions to the Seawall were constructed between 1904 and 1963 along with a system of groins between 10th and 61st Streets completed in 1939. The Seawall consists of a concrete gravity wall built on treated timber piles, a reinforced concrete sheetpile cutoff wall, and riprap toe protection backed by a landward sand-fill embankment with a sodded surface. While the original construction may have been characterized by a sodded surface on the landward side, this has been modified over time to paved surfaces in most locations. (USACE 1902, 1967, 1981). The modern Seawall is approximately 19.7 feet in elevation with a broad sidewalk and major

4-lane thoroughfare, Seawall Boulevard, on its crest. Sewall Boulevard is highly developed with commercial properties along most of its length. There are several access ramps along the Seawall that allow pedestrian and limited vehicular access to the Gulf beach, and a series of fifteen rubble groins that serve both project and recreational purposes, as described below. The four county constructed groins (Groins A-D, Section 2.2.9, below) are capped with pavement to facilitate recreational use. The remaining eleven Federally constructed groins are faced and finished with large granite riprap blocks. The City of Galveston maintains beaches through beach nourishment along the Seawall to promote tourism, a major industry on the island.

The current system of fifteen groins, four constructed by Galveston County and eleven constructed by the Corps, along the Gulf shore was also constructed between 12th and 61st Streets to trap sand and prevent exposure of the untreated wood pilings and sheetpile under the Seawall. In the 1930s, the Corps originally constructed 13 low-profile timber or steel sheetpile groins in an effort to protect the untreated timber components of the Seawall from marine borer damage by maintaining a small beach at the toe of the structure. Eleven of the original 13 Federal groins exist today. Between 1954 and 1962, Galveston County constructed an additional four rubble mound structures to serve the dual function of groins and fishing piers. In 1967 the Corps completed Design Memorandum 7 for the Rehabilitation of the Galveston Groins. The selected groin design consisted of ruble mound structures of similar height and length as the County groins (USACE 1981).

The purpose of this Environmental Assessment (EA) is to evaluate the potential impacts associated with the effort to repair the damage to the Seawall and Groins caused by the combined storm surge and wave action from Hurricane Ike, which made landfall in Galveston on September 13, 2008. PL 84-99, Flood Control and Coastal Emergencies (FCCE) authorizes the USACE to supplement state and local entities for emergency management activities including the protection or repair of federally authorized shore protective works threatened or damaged by coastal storm (USACE 1988). The Galveston County Commissioners Court is the Local Sponsor requesting assistance under PL84-99.

1.2 PURPOSE AND NEED FOR PROJECT

The purpose of the proposed project is to restore the Seawall and Groins to pre-Ike condition. The combined storm surge and wave action from Hurricane Ike, which made landfall in Galveston on September 13, 2008, was the primary cause of damage to the Galveston Seawall. Although the Seawall appears to remain structurally intact, the damage to toe scour protection and exposure of the sheet pile cutoff could have significant consequences for future Seawall stability. In addition, loss of integrity of the Groins appears to have reduced their sand trapping efficiency, which will result in increased erosion of scour protection and exposure of the timber sheet pile cutoffs of the Seawall. Flanking of the Seawall at the west end has exposed areas landward of the Seawall to erosion, and continued erosion is possible from future wave impacts. Lack of repair prior the next hurricane season, June 2009, increases the risk of failure and

potential damages during a significant storm event and threatens the protected community and property of Galveston.

1.3 PROPOSED PROJECT

The proposed project includes repairs that would restore the Seawall and Groins to pre-storm condition and authorized level of protection. Repairs to the Seawall and Groins are proposed at several locations between the West End Ramp at the west end of the Seawall, and the 10th Street Groin (Figure 2). A detailed description of the work proposed is found in Section 2.2, below.

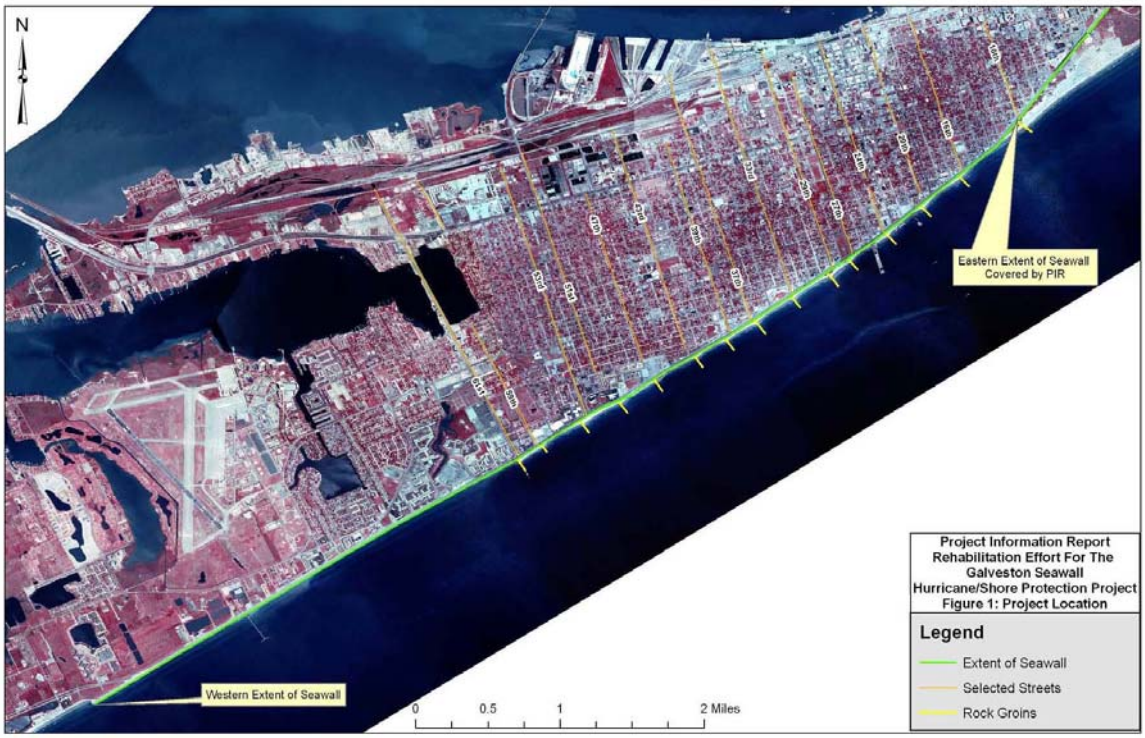

Figure 2. Galveston Island Seawall and Groins Repair Limits.

2.0 ALTERNATIVES

2.1 ALTERNATIVE 1 – NO ACTION

Under the No Action Alternative, the repairs would not be conducted and the stability and integrity of the Seawall and Groins would worsen and significantly decrease its effectiveness and ability to protect the City of Galveston during another storm.

2.2 ALTERNATIVE 2 – RECOMMENDED PLAN

Elements of the proposed repairs would include: 1) the construction of a wall at the Seawall West End Ramp; 2) repairs to the maintenance access ramp at 57th Street; 3) repairs to the maintenance access ramp at 35th Street; 4) repairs to the loss of subgrade

and sidewalk between 25th and 22nd Streets; 5) the repair of grade settling and toe protection in various locations; 6) void repair under the sidewalk in various locations; 7) sheet pile repair at the Seawall toe; 8) crack repair in various locations; and, 9) groin repair at 10th, 29th, 37th and 61st Streets.

2.2.1 Seawall West End Ramp.

The West End Ramp is the extreme west terminus of the Seawall. Prior to Hurricane Ike, the West End Ramp terminated at the beach, but erosion and scour has translated the shoreline significantly further inland than the original design. Review of aerial images before and after the storm indicate that the beach and dune system was completely washed away adjacent to the termination of the Seawall. The loss of the beach and dune system at the West End Ramp increases the chances of the wall being damaged during a subsequent storm.

The West End Ramp pavement was damaged by undermining of the existing base material by the storm surge and associated wave action. Also, portions of the pavement were damaged by being uplifted and displaced at the intersection where Seawall Boulevard becomes San Luis Pass Road. Because of shoreline recession, the West End Ramp can not be repaired as it originally existed, but would be replaced by a section of new Seawall that would extend 250 feet landward. The top elevation of the new Seawall section would match the existing Seawall in design, materials and elevation. Portions of the demolished and damaged West End Ramp material may be incorporated as riprap for toe protection.

2.2.2 57th Street Maintenance Access Ramp.

Significant undermining of the 57th Street Maintenance Access Ramp occurred along the bottom edge of the ramp during Hurricane Ike. The asphalt pavement between the vehicle ramp and the street was also damaged.

The remains of the 57th Street Maintenance Access Ramp would be demolished, rebuilt to its original design specifications and repaved with asphalt. The demolished and damaged 57th Street Maintenance Access Ramp material may be incorporated into the rebuilt ramp.

2.2.3 35th Street Maintenance Access Ramp.

The concrete deck of the 35th Street Maintenance Access Ramp was damaged by undermining of the base material from the storm surge and associated wave action. Large voids also formed in the ramp as a result of material being lost to the wave action. The asphalt pavement between the vehicle ramp and the street was also damaged.

Repairs to the 35th Street Maintenance Access Ramp would include the demolition of the concrete deck, the depositing of suitable base material to fill and level the voids, and the placement of concrete pavement on top of the base material. Damaged

portions of asphalt would be removed and replaced between the newly repaired ramp and Seawall Boulevard.

2.2.4 Loss of Subgrade/Sidewalk damage from 25th Street east to 22nd Street.

Sections of sidewalk between 25th and 22nd Streets were damaged by undermining of existing base material, typically around concrete culverts between the curb inlets along Seawall Boulevard.

Visibly damaged sections of sidewalk would be removed to the nearest joint to expose the voids, which would be filled with suitable base material. Any culverts in the repair site would be examined and replaced if damaged and new sections of sidewalk would be positioned.

2.2.5 Grade Settling and Toe Protection.

Settlement of scour protection stones was observed in several areas along the Seawall. Surveying has been conducted to locate all settled areas along the entire length of the Seawall. Settlement at the toe scour protection and loss of sand has resulted in the exposure of the timber pilings. Over time, these pilings may suffer deterioration from exposure to the marine environment. Also, the increased water depths at the toe allow larger waves to impact the structure. Inspections will be performed to determine the condition of the piling at the exposed areas.

In order to repair the damage, existing toe protection stones would be removed and set aside, concrete or other suitable base material would be added to raise the settled grade to its original level, and the set-aside toe protection stones would be placed back in their original location.

2.2.6 Void Repair under Sidewalk.

A Ground Penetrating Radar (GPR) survey has been performed to locate voids beneath the sidewalk behind the Seawall. While the sidewalk scour protection appears to remain structurally intact, additional sand migration could increase the voids and lead to collapse of the Seawall scour protection. GPR Survey results can be found in Appendix K of the Project Information Report (USACE, 2009). The voids may be a result of cracks that have developed along the face of the Seawall and/or deteriorated timber sheet piles at the toe of the Seawall. Either condition could allow seepage of sand fill material, which would undermine and cause further damage to the infrastructure along the Seawall.

In order to repair the voids identified in the GPR survey, sections of the sidewalk would be removed to the nearest joint, voids would be filled with suitable base material and new sections of sidewalk would be positioned.

2.2.7 Sheet Pile Repair at Seawall Toe.

There are several sections along the toe of the Seawall where timber sheet piling is exposed. Sheet Pile Repair at Seawall Toe would be accomplished by removing and setting aside the existing toe protection stones, connecting new sheet pile to the existing sheet pile and cast concrete wall, and then placing the set-aside toe protection stones back in their original location.

2.2.8 Crack Repair.

In areas deemed necessary, cracks in the Seawall would be repaired with epoxy grout or similar material capable of withstanding the marine environment.

2.2.9 Groin Repair at 10th, 29th, 37th and 61st Streets.

The four groins constructed by Galveston County would be repaired to restore their ability to trap and retain sand for the protection of the Seawall. Damaged portions of the pavement topping these groins would be removed, core stones added or leveled, and additional rock riprap added to the existing structures.

2.2.9.1 Groin A – Rubble Groin at 10th Street

Approximately 630 feet of paved pathway and surrounding riprap, and two maintenance access ramps were damaged at Groin A. The material was displaced by wave action. Handrails on access stairways were damaged or removed completely by the hurricane between 10th and 29th Streets.

In order to restore Groin A's ability to trap and retain sand for the protection of the seawall, the 630 linear feet of paved pathway, associated riprap and two maintenance ramps would be demolished and incorporated into the groin as core stones. Additional core stones would be added to stabilize the slopes and to provide a level surface for the concrete cap. Geotextile fabric would be placed over the core stones and will act as the form for the proposed concrete cap. The two maintenance ramps would be restored and damaged and missing handrails between 10th and 29th Streets would be replaced to provide safe access to the beach.

2.2.9.2 Groin B – Rubble Groin at 29th Street

Approximately 720 feet of paved pathway and surrounding riprap, and two maintenance ramps were damaged at Groin B. The material was displaced by wave action. Handrails on access stairways were damaged or removed completely by the hurricane between 29th and 37th Streets.

In order to restore Groin B's ability to trap and retain sand for the protection of the seawall, the 720 linear feet of paved pathway, associated riprap and two maintenance ramps would be demolished and incorporated into the groin as core stones. Additional core stones would be added to stabilize the slopes and to provide a level surface for the concrete cap. Geotextile fabric would be placed over the core stones and would act as the

form for the proposed concrete cap. The two maintenance ramps would be restored and damaged and missing handrails between 29th and 37th Streets would be replaced to provide safe access to the beach.

2.2.9.3 Groin C – Rubble Groin at 37th Street

Approximately 670 feet of paved pathway and surrounding riprap, and two maintenance ramps were damaged at Groin C. The material was displaced by wave action. Handrails on access stairways were damaged or removed completely by the hurricane between 37th and 61st Streets.

In order to restore Groin C's ability to trap and retain sand for the protection of the seawall, the 670 linear feet of paved pathway, associated riprap and two maintenance ramps would be demolished and incorporated into the groin as core stones. Additional core stones would be added to stabilize the slopes and to provide a level surface for the concrete cap. Geotextile fabric would be placed over the core stones and will act as the form for the proposed concrete cap. The two maintenance ramps would be restored and damaged and missing handrails between 37th and 61st Streets would be replaced to provide safe access to the beach.

2.2.9.4 Groin D – Rubble Groin at 61st Street (with fishing pier)

Approximately 550 feet of paved pathway and surrounding riprap, and two maintenance ramps were damaged at Groin D. The material was displaced by wave action. Handrails on access stairways were damaged or removed completely by the hurricane between 61st Street and the west end terminus of the Seawall. The fishing pier and the electrical conduits running alongside the paved jetty were destroyed by the hurricane; repairs to these items would be undertaken by Galveston County or the pier operator. Repair of Groin D would not include rebuilding the fishing pier unless undertaken and paid for by the local sponsor.

In order to restore Groin D's ability to trap and retain sand for the protection of the seawall, the 550 feet of paved pathway, associated riprap and two maintenance ramps would be demolished and incorporated into the groin as core stones. Existing concrete encased electrical conduit and other utilities located along the length of the groin will be removed. Additional core stones would be added to stabilize the slopes and to provide a level surface for the concrete cap. Geotextile fabric would be placed over the core stones and will act as the form for the proposed concrete cap. The two maintenance ramps would be restored and damaged and missing handrails from 61st Street to the west end terminus of Seawall to provide safe access to the beach.

2.3 COMPARISON AND EVALUATION OF ALTERNATIVES

It has been determined that without the repairs to the Seawall and Groins, the structures would degrade and lose stability and structural integrity. The system would be compromised and a significant amount of life and property would be at risk; thus, the

alternative of No Action was not considered to be acceptable. Therefore, the Recommended Plan is to repair the damaged Seawall and Groins (see Section 2.2).

3.0 AFFECTED ENVIRONMENT

3.1 PROJECT AREA

The project area is located on Galveston, a barrier island two miles off the Texas coast approximately 40 miles south of Houston, Texas. The island is approximately three miles wide at its greatest width and approximately 28 miles long. The Galveston Seawall and Groins System extend approximately 10 miles along the Galveston's oceanfront, protecting life and property against the destructive natural forces of hurricanes and tropical storms. The proposed repairs would be conducted on the Seawall and Groins between 10th Street and the west end of the Seawall, within the authorized footprint of the existing project area as shown in Figure 2.

3.2 VEGETATION

The project area is located in the Gulf Coast Prairies and Marshes Region that borders the Gulf of Mexico from the Sabine River to Corpus Christi Bay (Gould et al, 1960). The project area is located in an area that has been previously heavily disturbed by construction activities associated with the existing authorized project; however, there is vegetation in the vicinity of some portions of the project area. There are sparse beach and sand ridge vegetation including *Panicum amarum, Spartina patens, Ipomoea pescapre, Croton punctatus, Heterotheca subaxillaris,* and *Machaeranthera philoxeroides* in several areas east of the proposed repairs.

3.3 WILDLIFE

The project area provides food and shelter for wintering and migrating grassland songbirds. Although there is not sufficient vegetation to support year-round nesting populations, birds occasionally found in the area include a variety of waterfowl, shorebirds and wading birds, and a variety of gulls and terns (*Laridae* family). Piping plover (*Charadrius melodus*) are also known to winter along the Texas Gulf Coast on beaches and bayside mud or sand flats.

Mammals which may be found in the project area include opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), coyote (*Canis latrans*) (The Nature Conservancy of Texas, 2009), and feral dogs and cats.

Several varieties of sea turtles, including the loggerhead sea turtle (*Caretta caretta*), Kemp's ridley sea turtle (*Lepidochelys kempi*), leather back sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricata*), and the green sea turtle (*Chelonia mydas*), have also been reported occasionally in the project area.

3.4 FISHERIES AND ESSENTIAL FISH HABITAT

Congress enacted amendments to the Magnuson-Stevens Fishery Conservation and Management Act (PL 94-265) in 1996 that established procedures for identifying Essential Fish Habitat (EFH) and required interagency coordination to further the conservation of federally managed fisheries. Rules published by the NMFS (50 CFR Sections 600.805–600.930) specify that any Federal agency that authorizes, funds or undertakes, or proposes to authorize, fund, or undertake an activity that could adversely affect EFH is subject to the consultation provisions of the above-mentioned act and identifies consultation requirements. This EA will serve to initiate EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act.

The Gulf of Mexico and Galveston Bay support extensive commercial and recreational fisheries, including menhaden (*Brevoortia patronus*) and shrimp fisheries. The Galveston Bay area ranks first among all Texas bays and estuaries in shellfish catches and is a major contributor to the total volume and value of catches along the Texas Coast. Dominant fish species vary from year to year, but western Gulf coastal waters are typically dominated by members of the croaker family (*Sciaenidae*). The benthic community near the project area is described as a nearshore assemblage inhabiting a substrate comprised predominantly of sand. Characteristic species include Mollusca (*Tellina versicolor, Natica pusilla, Nassarius acutus*), Polychaeta (*Onuphis eremite oculata, Spioshanes bombyx, Loimia medusa, Mediomastus californiensis*), and Crustacea (*Oxyurostylis salinoi*) (USACE 1992, NMFS/NOAA website 2009).

3.5 THREATENED AND ENDANGERED SPECIES

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) considered the threatened or endangered species in Table 1 as possibly occurring in Galveston County. The bald eagle has been recently delisted but the protections provided by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act remain in effect.

A Biological Assessment (BA) has been prepared that addresses the proposed project's potential impact on federally listed threatened and endangered species and species of concern. This BA, which is included as Appendix B, includes information on the distribution and habitat requirements of these species. Of these species, the brown pelican, the piping plover, and sea turtles are known to occur in the vicinity of the project area. Although the Kemp's Ridley sea turtle is the rarest of the sea turtles, in recent years there has been an increase in the reported nesting of this turtle along the Texas coast. It is possible that this species, and the loggerhead sea turtle, could occur in or near the project site during nesting season (USACE 1992, NMFS/NOAA website 2009). The closest repair site (Groin A repair at 10th Street) is located approximately 2.5 miles southwest of proposed Critical Habitat Unit TX-35 at Big Reef, Galveston, Texas for the wintering population of piping plovers. Proposed Critical Habitat Unit TX-35 will not be directly impacted by the proposed repairs to the Seawall and Groins.

Table 1: Federally-Listed Threatened and Endangered Species for Galveston County

Common Name	Scientific Name	Listing Status	
		USFWS	NMFS
Fish			
Smalltooth sawfish	*Pristis pectinata*		Endangered
Reptiles			
Green sea turtle	*Chelonia mydas*	Threatened	Threatened
Hawksbill sea turtle	*Eretmochelys imbricata*	Endangered	Endangered
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered	Endangered
Leatherback sea turtle	*Dermochelys coriacea*	Endangered	Endangered
Loggerhead sea turtle	*Caretta caretta*	Threatened	Threatened
Birds			
Brown pelican	*Pelecanus occidentalis*	Endangered	
Piping plover	*Charadrius melodus*	Threatened	
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

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

Table 2. Potential State-Listed Rare, Threatened and Endangered Species for Galveston

Common Name	Scientific Name	Status
PLANTS		
Texas prairie dawn-flower	*Hymenoxys texana*	Endangered
FISH		
Creek chubsucker	*Erimyson oblongus*	Threatened
BIRDS		
American peregrine falcon	*Falco peregrius anatum*	Endangered
Arctic peregrine falcon	*Falco peregrinustundrius*	Threatened
Attwater's greater prairie-chicken	*Tympanuchus cupido attwateri*	Endangered
bald eagle	*Haliacetus leucocephalus*	Threatened
brown pelican	*Pelecanus occidentalis*	Endangered
Eskimo curlew	*Numenius borealis*	Endangered
piping plover	*Charadrius melodus*	Threatened
reddish egret	*Egretta rufescens*	Threatened
white-faced ibis	*Plegadis chihi*	Threatened
white-tailed hawk	*Buteo albicaudatua*	Threatened
whooping crane	*Grus Americana*	Endangered
wood stork	*Mycteria Americana*	Threatened
REPTILES		
alligator snapping turtle	*Macrochelys temminckii*	Threatened
green sea turtle	*Chelonia mydas*	Threatened
hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
leatherback sea turtle	*Dermochelys coriacea*	Endangered
loggerhead sea turtle	*Caretta caretta*	Threatened
smooth greensnake	*Opheodrys vernalis*	Threatened
Texas horned lizard	*Phyrnosoma cornutum*	Threatened
timber rattlesnake	*Crotalus horridus*	Threatened
MARINE MAMMALS		
West Indian manatee	*Trichechus manatus*	Endangered
TERRESTRIAL MAMMALS		
jaguarundi	*Herpailurus jaguarondi*	Endangered
Lousiana black bear	*Ursus americanus luteolus*	Threatened
ocelot	*Leopardus pardalis*	Endangered
Rafinesque's big-eared bat	*Corynorhihus rafinesquii*	Threatened
red wolf	*Canis rufus*	Endangered

[1]Texas Parks and Wildlife Department (2009).

3.6 CULTURAL RESOURCES

The Galveston Seawall was constructed in response to the great loss of life and property caused by the 1900 Storm. The original three mile Seawall from 6th Street west to 39th Street is listed on the National Register of Historic Places (NRHP) (Reference

number 77001443; listed August 18, 1977). Five additions to the Galveston Seawall were constructed between 1904 and 1963 along with a system of groins between 12th and 61st Streets completed in 1939. These structures and all associated features are considered eligible for listing in the NRHP.

3.7 AIR QUALITY AND NOISE

3.7.1 Air

The project is located in Galveston County, Texas. This county is within an area designated as the Houston-Galveston-Brazoria Intrastate Air Quality Control Region (HGB) (Environmental Protection Agency (EPA) website, 2009). The HGB is in attainment or unclassified with the NAAQS for all criteria pollutants except ozone and was classified as having "moderate" nonattainment with the 8-hour NAAQS for ozone until 2008, when the EPA reclassified the area to "severe" nonattainment, with an attainment deadline of 2019. Thus by 2019, the area is expected to achieve and maintain attainment with the NAAQS for ozone. The planning and implementation of these SIP requirements incorporate the effects of population and industrial growth, technology changes, and national or statewide control measures. Counties in the HGB Nonattainment Area affected under this status are Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller.

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. Table 3 is a summary of emissions for Galveston County for 2001 (EPA website, 2009).

Table 3. Summary of 2001 Air Emissions Inventory for Galveston, County by Source Category

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**

3.7.2 Noise

Federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Federal Interagency Committee on Urban Noise developed land-use compatibility

guidelines for noise in terms of day-night average sound level (DNL) (U.S. Department of Transportation, 1980). It is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks, be located where the noise is expected to exceed a DNL of 65 decibels (dBA). The DNL is the energy average A-weighted acoustical level for a 24-hour period with a 10-decible upward industrial uses area considered acceptable where the noise level exceeds DNL of 65 dBA. For outdoor activities, the EPA recommends DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any of the effects of noise (EPA, 1974). Noise-sensitive receptors are facilities or areas where excessive noise may disrupt normal activity, cause annoyance, or loss of business. Land uses such as residential, religious, educational, recreational, and medical facilities are more sensitive to increased noise levels than are commercial and industrial land uses. There are numerous sensitive receptors in the vicinity of the project area including hotels, private residences, restaurants, private businesses and recreational facilities.

3.8 WATER QUALITY

Existing water resources data for the project area indicate no known adverse water quality concerns. Proposed repairs to the Groins may affect water quality within the project area by temporarily increasing turbidity and suspended sediment load in the estuarine water column. However, these temporary conditions are not expected to adversely impact marine mammals, EFH or other aquatic resources in the project area.

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

Prior to Hurricane Ike, economic activities for the City of Galveston were highly dependent on the Port of Galveston, The University of Texas Medical Branch (UTMB), American National Insurance Company Headquarters, Federal governmental agencies, the tourist industry. Since the storm and its catastrophic impacts, the primary attraction to Galveston Island is its natural features and more specifically, its 28 miles of beaches. The repairs to the Seawall and Groins will provide safe access to recreational beaches, restaurants, hotels and other businesses along Seawall Boulevard, and provide continued storm protection to the people and City of Galveston.

3.11 ENVIRONMENTAL JUSTICE

In compliance with Executive Order (EO) 12898, Federal Action to Address Environmental Justice in Minority and Low-Income Populations, an analysis was performed to determine whether the proposed project will have a disproportionately adverse impact on minority or low-income population groups in the vicinity of the project area. Low-income persons are defined as "a person whose household income is at or below the Department of Health and Human Services (HHS) poverty guidelines." The 2008 HHS poverty guideline for a family of four is $21,200. This analysis consisted of determining characteristics of residential populations in the project area.

Galveston County has a population of 283,551 living in 128,453 households, based on the 2006 Census (USCB, 2006). The racial makeup of the county is 80.8% White, 14.8% African American, 0.5% Native American, 2.8% Asian, 0.1%, Pacific Islander, 20.3% of Hispanic or Latino origin, and 2.22% from two or more races (USCB, 2006). The repairs will be conducted within the zip codes of 77550, 77551 and 77554. Information from the 2000 Census (USCB, 2000) shows 9.2% of families and 12.4% of individuals are under the poverty level.

3.12 PRIME AND UNIQUE FARMLANDS

Prime farmland soils are defined by the Secretary of Agriculture in 7 CFR, Part 657 (Federal Register, Vol. 43, No. 21) as those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The soil quality, growing season, and moisture supply are available to economically produce sustained high yield of crops when treated and managed, including water management, according to acceptable farming methods. Some soils are considered prime farmland in their native state, and others are considered prime farmland only if they are drained or watered well enough to grow the main crops in the area.

The project area consists of beach and urban development. The project footprint does not include land or soil suitable for agricultural activities.

3.13 RECREATIONAL RESOURCES

The economy of Galveston depends, for the most part, upon tourism. One of the amenities that attracts this tourism is the Gulf beaches. Safe and effective access to Galveston beaches and groins has been limited by the damages caused by Hurricane Ike, and has impacted tourism.

3.14 ROADWAYS AND TRAFFIC

Major roadways within the project area include Seawall Boulevard and Broadway. Seawall Boulevard is a four-lane highway that follows the top of the Seawall along the Gulf of Mexico (FM 3005). The Seawall is lined with hotels, convention

centers, restaurants, condominiums, amusement areas and local businesses. Seawall Boulevard is used by commercial, tourist, and local traffic. Broadway parallels Seawall Boulevard through the middle of the city, linking it to I-45 and the mainland.

4.0 ENVIRONMENTAL CONSEQUENCES OF PREFERRED ALTERNATIVE

4.1 IMPACTS ON PROJECT AREA

The Seawall and Groins were constructed prior to NEPA; therefore, there is no existing environmental documentation for the structures. The proposed repairs would impact the Seawall sidewalk, maintenance access ramps, regularly maintained beaches and existing rock riprap groins.

4.2 IMPACTS ON VEGETATION

No wetlands or areas of submerged aquatic vegetation would be impacted by the proposed rehabilitation and repairs. The proposed repair activities would occur within the authorized alignment and footprint of the Seawall and Groins to restore the project to its pre-storm conditions. To the extent practicable, materials and equipment required for the project will be staged in upland areas, not on the beach, and transported as needed to the work sites. All work would occur along the unvegetated rock riprap or on the beach.

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, beach renourishment and maintenance activities. These activities produce disturbances similar to those expected from the repair work being proposed. For these reasons, the proposed action is not expected to adversely affect any listed species. Most species that do not tolerate disturbances resulting from the repair could avoid the area during this time. The habitat at the sites proposed for repair work 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 would occur as a result of the project. Temporary impacts to estuarine water column and estuarine mud, sand, shell and rock substrates would result from the project. However, it is anticipated that these impacts would be minor in nature. Therefore, no EFH mitigation is required for the project.

4.5 IMPACTS ON THREATENED AND ENDANGERED SPECIES

Brown pelicans, sea turtles, and piping plover might be found near the project area. The proposed repairs may effect, but not likely to adversely affect these species. The proposed repairs are not expected to result in the taking of any of the above listed species.

Construction activities would be monitored to minimize interference with, and disturbance or damage to, fish and wildlife. Trained and qualified monitors would monitor all construction activities, escort construction vehicles to and from work sites, and monitor for the presence of threatened and endangered species. The monitors would survey the beach daily for piping plovers, sea turtles, sea turtle tracks, and sea turtle nests prior to the initiation of any construction activity, and periodically throughout the day. Monitors would ensure that no piping plovers are affected by work activities and ensure loafing and/or resting birds are not in the project area during construction. Monitors would also stop work in the event sea turtles, their nests or their eggs are found on the beach, and would safeguard any turtle eggs until they can be relocated by the appropriate, permitted individuals.

To the extent practicable, materials and equipment required for the project would be staged in upland areas, not on the beach, and transported as needed to the work sites. There shall be no overnight storage of equipment or vehicles on the beach. For any materials staged on the beach, a fence would be erected to prevent sea turtles from entering the staging areas. A more detailed description of the avoidance, minimization and conservation measures to be implemented during repair activities is found in Appendix B, Section 3 of the BA.

The proposed repair work is minor, short-term and would occur within the footprint of the existing project which has been previously disturbed and undergoes routine inspection and maintenance. These activities produce disturbances similar to those expected from the repair work being proposed. For these reasons, the proposed action may affect, but is not likely to adversely affect any listed species or their critical habitat.

4.6 IMPACTS ON CULTURAL RESOURCES

Restoration activities would be confined within the limits of the existing Federal project. None of the repair work proposed would alter any of the characteristics of the Seawall that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association.

4.7 IMPACTS ON AIR QUALITY AND NOISE

4.7.1 Air

The project area is located in the HGB which is in "severe" nonattainment status with the 8-hour NAAQS for ozone. 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 public health and welfare, especially in view of the upcoming hurricane season. A signed determination documenting this decision is included in Appendix F.

4.7.2 Noise

Noise associated with earth-moving equipment presents a short-term impact during the construction phase; however, the noise generated from this type of activity is similar in nature to the current noise levels generated by daily vehicle traffic along Seawall Boulevard. While there are numerous sensitive receptors in the vicinity of each of the repair sites, the noise that would be generated by the repair activities would be similar to seasonal beach maintenance and renourishment activities. 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 would be limited to the repair phase, and there are several comparable substitute recreation sites readily available within the area. No long-term affects would occur as a result of noise during construction.

4.8 IMPACTS ON WATER QUALITY

During construction, activities such as the placement of stone and riprap at the Seawall toe and along the Groins may increase turbidity in the immediate vicinity of the repair site. After repairs are completed, the shoreline and 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 Seawall and Groins 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 Seawall and Groins would not adversely impact socioeconomic resources in the vicinity of the project area. Completion of the work should return the Seawall and Groins to the level which existed prior to landfall from Hurricane Ike.

4.11 IMPACTS ON ENVIRONMENTAL JUSTICE

Given the limited nature of the proposed repairs, and overall minimal environmental impact of the project it is concluded that the proposed project would not create an adverse environmental impact on any person or group of people. Any impacts from the proposed project would be minor, temporary, and distributed among all groups equally.

4.12 IMPACTS ON PRIME AND UNIQUE FARMLANDS

The project would not impact prime and unique farmlands as these resources do not occur in the project area.

4.13 IMPACTS ON RECREATIONAL RESOURCES

Noise from heavy equipment and vehicles used during construction of the project may discourage recreational activities in the immediate vicinity of the project site. However, these affects would be limited to the period of construction and should be minor.

4.14 IMPACTS ON ROADWAYS AND TRAFFIC

Minor delays and possible detours may be expected on Seawall Boulevard during certain portions of the proposed repairs. These impacts would be temporary and are not expected to adversely impact commercial or residential access.

5.0 MITIGATION

The restoration work would be confined within the limits of the existing Federal project and would not impact any significant environmental impacts; therefore, mitigation is not necessary.

6.0 CUMULATIVE IMPACTS

Cumulative impacts of the proposed action consist of minor temporary impacts to the natural and human environment, with overall positive benefits to the socioeconomic environment. The project is not expected to induce development since this plan would result in restoring the existing Seawall and Groins and surrounding environment to its

pre-hurricane condition. Implementation of the project would involve minor temporary impacts to vegetation, shoreline substrates, wildlife resources, recreation, traffic and the human environment as a result of construction.

Historically, the study area has experienced increased development and growth which resulted in decreased quality of some environmental resources such as air and water. Cumulative impacts from past, existing, and reasonably foreseeable future projects in the vicinity of the Galveston Seawall and Groins, along with the proposed project, are not expected to have significant adverse effects within the study area. Although the effect of many assessed projects are unknown, it is assumed that many projects would adhere to state and federal regulations which require no significant effect to resources or mitigation of those affected resources, while other major projects may negatively affect an environmental resource. The Galveston Seawall and Groins repair work is expected to have minor temporary local impacts to recreation and wildlife from construction related noise, EFH, water quality from increased turbidity, and traffic due to increased construction equipment. These 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.

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:

7.1 NATIONAL ENVIRONMENTAL POLICY ACT

This EA has been prepared in accordance with Council on Environmental Quality (CEQ) 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.

7.2 FISH AND WILDLIFE COORDINATION ACT OF 1958, AS AMENDED

The Seawall and Groins were constructed prior to NEPA; therefore, there is no existing environmental documentation for the structures. The proposed work involves repairs to the Seawall and Groins to restore areas that were damaged by erosion during Hurricane Ike to pre-storm cross-sections and/or conditions and would not result in modifications or expansion of the existing project. Therefore, Fish and Wildlife

Coordination Act coordination is not required. The USFWS and NMFS will have opportunity to review and comment on this draft EA.

7.3 NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED

Coordination with the Texas SHPO has been conducted for the proposed project and it has been found to be in compliance with the National Historic Preservation Act. Historic properties would not be adversely affected by this project and the SHPO has concurred that no further work or coordination is required for this project.

7.4 MAGNUSON-STEVENS FISHERY CONSERVATION MANAGEMENT ACT

Congress enacted amendments to the Magnuson-Stevens Fishery Conservation and Management Act in 1996 that established procedures for identifying EFH and required interagency coordination to further the conservation of federally-managed fisheries. Rules published by the NMFS (50 CFR 600.805 through 600.930) specify that any Federal agency that authorizes, funds or undertakes, or proposes to authorize, fund or undertake an activity that could adversely affect EFH be subject to the consultation provisions of the act. No permanent impacts to living marine resources or EFH would occur as a result of the project, therefore no mitigation is required.

7.5 COASTAL ZONE MANAGEMENT ACT OF 1972

This Act requires that all land-use changes in the project area be conducted in accordance with approved state coastal zone management programs. Any project that is located in or that may affect land and water resources in the Texas coastal zone and that requires a Federal license or permit, or is a direct activity of a Federal agency, or is federally funded must be reviewed for consistency with the Texas Coastal Management Program (TCMP), which can be found in Appendix A. The proposed work involves repairs to the Seawall and Groins to restore areas that were damaged by erosion during Hurricane Ike to pre-storm cross-sections and/or conditions and would 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 TCMP.

7.6 ENDANGERED SPECIES ACT, AS AMENDED

The District prepared a BA (Appendix B) of potential impacts to federally listed species within the project area. The BA concluded that the proposed project may affect, but is not likely to adversely affect any federally-listed threatened or endangered species. The BA will be provided to the USFWS and NMFS for review and comment along with this EA.

7.7 CLEAN AIR ACT OF 1972, AS AMENDED

The Environmental Protection Agency established nationwide air quality standards to protect public health and welfare. The State of Texas has adopted the National Ambient Air Quality Standards as the state's air quality criteria. The project is located in Galveston County, which is located within the HGB which in attainment or unclassified with the NAAQS for all criteria pollutants except ozone for which it has a "severe" nonattainment status. 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. A signed determination documenting this decision is included in Appendix F.

7.8 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 D).

7.9 EXECUTIVE ORDER 11990 – PROTECTION OF WETLANDS

Consistent with the requirements of this order, it is Corps policy to avoid undertaking actions that affect wetlands identified as important based on wetland functions, unless there is no practicable alternative. There are no wetlands in the proposed project area; therefore, the proposed project will not impact wetlands.

7.10 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.

7.11 FARMLAND PROTECTION POLICY ACT OF 1981 AND THE CEQ MEMORANDUM PRIME OR UNIQUE FARMLANDS

The proposed project will not impact any farmland soils considered prime or unique.

7.12 EXECUTIVE ORDER 11988 FLOODPLAIN MANAGEMENT

This EO directs Federal agencies to evaluate the potential effects of proposed actions on floodplains. Such actions should not be undertaken that directly or indirectly induce growth in the floodplain unless there is no practical alternative. The proposed

project is not expected to induce growth within the floodplain as it is simply returning the existing project to pre-storm conditions.

7.13 COASTAL BARRIER RESOURCES ACT OF 1982 (CBRA)

This Act established a policy that coastal barriers in certain geographic areas are to be protected by restricting Federal expenditures which have the effect of encouraging development of coastal barriers. The act provided for a Coastal Barrier Resources System (CBRS) which identified undeveloped coastal barriers along the Atlantic and Gulf Coasts. Except for specific exempted projects, no new Federal expenditures or financial assistance are allowed for areas within the system. The purpose is to minimize loss of human life, wasteful expenditure of federal revenues, and damage to fish, wildlife and other natural resources associated with the development of coastal barriers.

The closest CBRS unit to the proposed project is TX-05P, located at the Galveston Island State Park, approximately 6 miles west of a the west end of the Seawall. As such, the proposed project will not impact CBRS lands.

8.0 CONCLUSIONS

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

- Wetlands and SAV would not be impacted by this project.
- Wildlife may be temporarily affected by minor impacts during construction.
- Fisheries and EFH would experience minor, temporary impacts. No mitigation is required for EFH as a result of the project.
- The proposed action may affect federally-listed threatened or endangered species, but is not likely to adversely affect these species.
- Historic Properties would not be affected by the project.
- Implementation of the proposed action would not result in significant noise impacts.
- The proposed project would temporarily impact water quality.
- There would be no hazardous, toxic, or radioactive waste impacts from the proposed project.
- The project would not adversely impact socioeconomics either locally or regionally.
- Any impacts from the proposed project would be minor, temporary, and distributed among all population groups equally.
- 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 CBRA zones would be impacted.

- 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.

9.0 LITERATURE CITED

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Appendix A - Project Coordination

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
JANUARY 22, 2009

Environmental Section

SUBJECT: Emergency Repair, Galveston Seawall, Galveston County, Texas

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

Dear Dr. Bruseth:

Reference is made to the enclosed draft document titled, *Project Information Report: Emergency Repairs to Hurricane/Shore Protection Project, Galveston Seawall* prepared by URS Group, Inc. for the US Army Corps of Engineers, Galveston District (USACE) and dated January 2009. The Project Information Report (PIR) was developed by the USACE upon receipt of a request for assistance from the local sponsor, Galveston County Commissioners Court, under PL 84-99, Flood Control and Coastal Emergencies (FCCE) (33 U.S.C. 701n) (69 Stat. 186). PL 84-99 authorizes the USACE to supplement state and local entities for emergency management activities including the protection or repair of federally authorized shore protective works threatened or damaged by coastal storm. We request your review of the referenced report and your concurrence in our conclusion that no historic properties will be affected by the proposed repairs in compliance with 36CFR800.5(b).

The Galveston Seawall was constructed in response to the great loss of life and property caused by the 1900 Storm. The original 3 mile seawall from 6th Street west to 39th Street is listed on the National Register of Historic Places (NRHP). Five additions to the Galveston Seawall were constructed between 1904 and 1963 along with a system of groins between 12th and 61st Street completed in 1939. These structures and all associated features are considered eligible for listing in the NRHP. None of the repair work proposed in the PIR will alter any of the characteristics of the Galveston Seawall that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association.

The combined storm surge and wave action from Hurricane Ike, which made landfall in Galveston on September 13, 2008, was the primary cause of damage to the Galveston Seawall. Although the seawall appears to remain structurally intact, the damage to toe scour protection and exposure of the sheet pile cutoff could have significant consequences for future wall stability. In addition, loss of integrity of the groins appears to have reduced their trapping efficiency which will result in increased erosion of the scour protection and exposure of the timber sheet pile cutoffs. Flanking of the seawall at the west end has exposed areas landward of the seawall to erosion, and continued erosion is possible from future wave impacts. Lack of repair prior the next hurricane season, June 2009, increases the risk of failure and potential damages during a significant storm event and threatens the protected community and property. A detailed description of the damage is found beginning on Page 7 of the PIR and photos of the damage are found in Appendix I.

Elements of the Galveston Seawall proposed for repair include: 1) the Seawall West End Ramp; 2) the maintenance access ramp at 57th Street; 3) the maintenance access ramp at 35th Street; 4) the loss of subgrade and sidewalk between 25th and 22nd Street; 5) grade settling/toe protection in various locations; 6) void repair under sidewalk in various locations; 7) sheet pile repair at the seawall toe, 8) crack repair in various locations; and, 9) groin repair at 10th, 29th, 37th and 61st Streets. A brief report of the proposed repair work is provided below; however, a full account of the proposed repair work is found beginning on Page 12 of the PIR.

Seawall West End Ramp. Due to shoreline recession, the west end's termination point will not be a ramp as it existed originally but will be replaced with a wall that will follow the design of the existing Seawall. The Seawall section will extend 250 feet landward of the face of the Seawall to account for shoreline recession and the top elevation of the termination will match the existing Seawall elevation. The damaged ramp material may be incorporated as proposed riprap for toe protection.

57th Street Maintenance Access Ramp. Damaged portions of the ramp will be removed in order to repair the significant undermining along the bottom edge of the 57th street ramp. Once structural repairs are completed, new asphalt pavement will be poured and marked.

35th Street Maintenance Access Ramp. Damaged portions of the ramp will be removed to expose the voids, voids will be filled to provide a level base surface, and concrete pavement will be placed on top. Damaged portions of asphalt will be removed and replaced between the ramp and the street.

Loss of Subgrade/Sidewalk damage from 25th Street east to 22nd Street. Damaged sidewalk sections will be removed to the nearest joint to expose undermined base material. The voids will be filled with suitable base material, either cement stabilized sand or flowable fill. If a culvert is damaged it will be replaced. Once all repairs are complete the sidewalk will be replaced.

Grade Settling and Toe Protection. In areas deemed necessary, existing toe protection stones will be removed and set aside. Concrete or other suitable base material will be used to raise the settled grade back to the surrounding level and the toe protection stones will be replaced.

Void Repair under Sidewalk. In areas deemed necessary by GPR survey, sections of the sidewalk will be removed to the nearest joint, the void will be filled with suitable base material and the sidewalk will be replaced.

Sheet Pile Repair at Seawall Toe. In areas where timber sheet piling is exposed the toe scour protection will be removed and set aside to allow for the installation of a new sheet pile wall at the toe of the Seawall. The new sheet pile will be connected to the existing sheet pile and cast concrete wall and toe scour protection will be replaced.

Crack Repair. In areas deemed necessary, cracks in the Seawall will be repaired with epoxy grout or similar material capable of withstanding the marine environment.

Groin Repair at 10th, 29th, 37th and 61st Streets. Four groins will be repaired to restore their ability to trap and retain sand for the protection of the Seawall. Damaged portions of paved pathway will be removed, core stones will be added or leveled, and additional rock riprap will be added to the existing structures. Repairs specific to each groin are found on Pages 13 – 15 in the PIR.

We request your review of the referenced report and your concurrence in our conclusion that no historic properties will be affected by the proposed action in compliance with 36CFR800.5(b). If you have any questions, please contact Ms. Nicole Cooper Minnichbach at 409-766-3878.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

1 Enclosure – Draft PIR

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

February 20, 2009

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

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and The Antiquities Code of Texas, Emergency Repair, Galveston Seawall, Galveston, Galveston County, Texas (USACE/106, NR, SAL)

Dear Ms. Murphy,

Thank you for your correspondence describing the above-referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Rachel Leibowitz and Elizabeth Butman, has completed its review of the project documentation provided. As reflected in your letter, the initial three-mile segment of the Galveston Seawall, built between 1902 and 1904, is listed in the National Register of Historic Places under Criteria A and C at the national level of significance in the areas of Engineering, Politics/Government, Community Planning, and Conservation. The Seawall was expanded to its current length in five building campaigns between 1904 and 1962. A series of groins were constructed in 1939 to address beach erosion, supplemented with additional groins between 1954 and 1967. The remainder of the Seawall and the groins are **ELIGIBLE** for National Register listing under Criterion A at the state level of significance.

Based on the material provided, the proposed undertaking will involve repairs to the Seawall to address damage caused by Hurricane Ike on September 13, 2008. The scope of work includes replacing the severely damaged west end ramp with a 250' landward extension of the Seawall, repairing the maintenance access ramps at 57th and 35th Streets, filling voids under the sidewalk and replacing damaged sections of the sidewalk along the top of the Seawall, addressing grade settling at the toe of the Seawall, repairing areas of the sheet piling, repairing cracks in the Seawall, and repairing the groins at 10th, 29th, 37th and 61st Streets. We find that the undertaking will have **NO ADVERSE EFFECT** on this historic property.

In addition to coordination of this project under Section 106 of the National Historic Preservation Act, the original section of the Seawall is designated as a State Archeological Landmark, and an Antiquities Permit will be required before work may proceed. Enclosed with this letter is a permit application, which may be completed by your office or Galveston County. No additional documentation of the proposed work will be required, and the permit will be issued upon receipt of the application. Please note that a written Completion Report will be due upon conclusion of the project, as required by all historic structures permits. A recommended outline for such a report has been included for your reference.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Elizabeth Butman at 512/463-7687.**

Sincerely,

A. Elizabeth Butman

A. Elizabeth Butman, Forest Region Project Reviewer
For: F. Lawerence Oaks, State Historic Preservation Officer

FLO/eb

Cc: Mike Fitzgerald, Galveston County Engineer
Alecya Gallaway, Chair, Galveston County Historical Commission

February 25, 2009

NOTICE OF AVAILABILITY

U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
ENVIRONMENTAL ASSESSMENTS
FOR EMERGENCY REPAIRS TO

THE GALVESTON SEAWALL AND GROINS,
AND THE FREEPORT AND TEXAS CITY AND VICINITY
HURRICANE AND FLOOD PROTECTION PROJECTS

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 Galveston Seawall and Groins, and the Freeport and Texas City and Vicinity Hurricane Flood Protection Projects (HFPPs) 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 projects to their pre-storm levels of protection and safety. The proposed work will not result in improvements or expansion of existing projects.

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 Galveston Seawall and Groins, and the Freeport and Texas City and Vicinity HFPPs. The proposed rehabilitation work will include repairs that will restore these projects to pre-storm conditions. If these projects are left in their current conditions, the risk of structural failure and potential damages the projects may sustain during future significant storm events could threaten the communities and properties they protect.

PROJECT LOCATIONS

The locations of the Galveston Seawall and Groins, and the Freeport and Texas City and Vicinity HFPPs are shown in Figure 1.

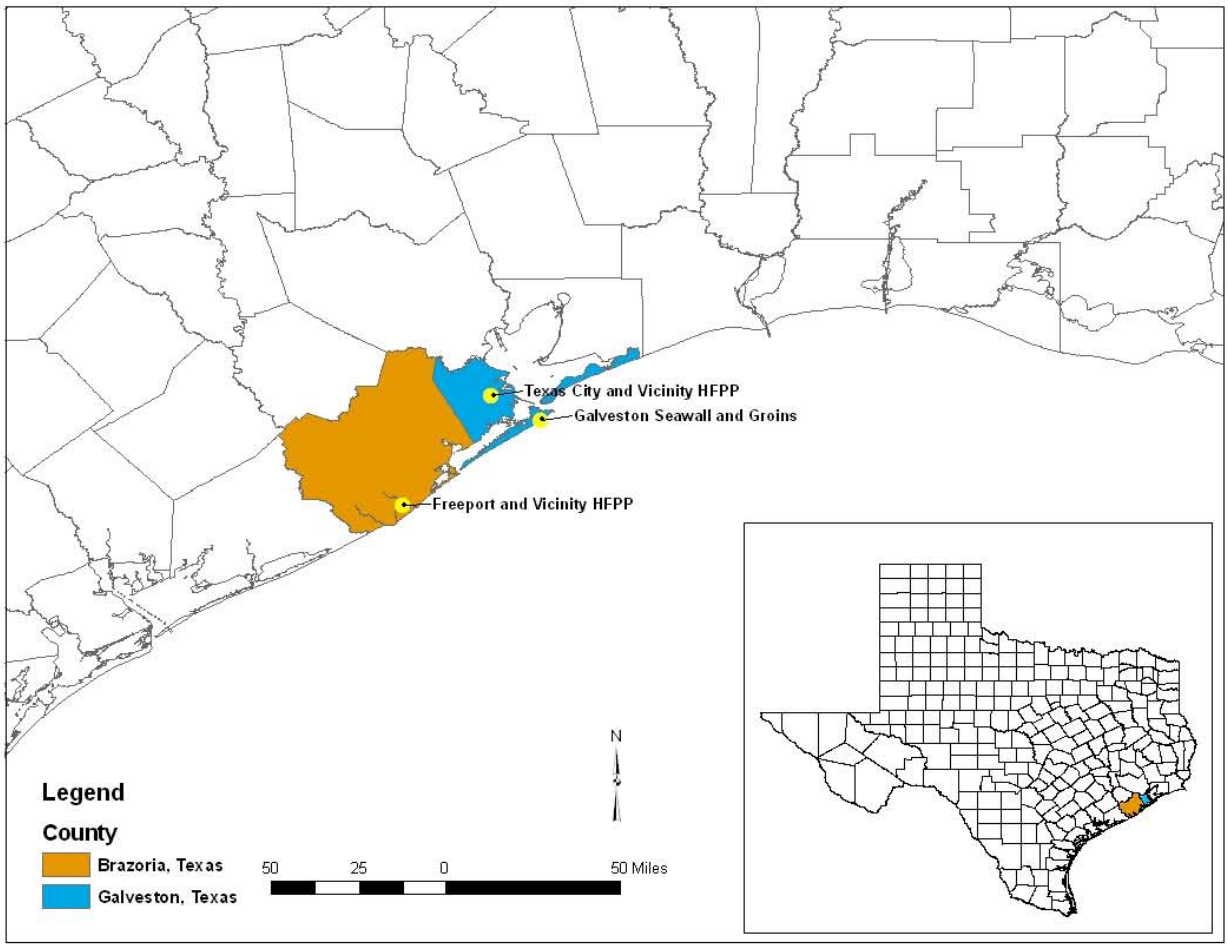

Figure 1. Locations of the Galveston Seawall and Groins, and the Freeport and Texas City and Vicinity HFPPs.

Galveston Seawall and Groins, Galveston County, Texas

The Galveston Seawall and Groins Project is located on Galveston Island, Galveston County, Texas. The Galveston Seawall and Groins Project protects portions of the City of Galveston beginning at the south jetty located at the entrance to the Houston Ship Channel and extending approximately 9.7 miles along Galveston Island's beach front on the Gulf of Mexico.

The Texas City and Vicinity, Hurricane Flood Protection Project, Galveston County, Texas

The Texas City and Vicinity HFPP is located in Galveston County, Texas on the southwest shore of Galveston Bay, about 9 miles northwest of Galveston, Texas and encompasses the cities of Texas City, La Marque, and the surrounding vicinity. The Texas City HFPP consists of 17 miles of protective works, including earthen levees and concrete floodwalls. The system has numerous appurtenant structures, including a tide control and navigation structure for Moses Lake, vehicular and railroad closure gates, highway ramps, gated gravity drainage structures, and two pumping plants.

Freeport and Vicinity, Hurricane Flood Protection Project, Brazoria County, Texas

The Freeport and Vicinity HFPP is located in southern Brazoria County, about 48 miles southwest of Galveston, Texas. The project consists of 53 miles of earthen levees varying from 15 to 21 feet above MSL with concrete and steel pile floodwalls and removable panels, a flood control tide gate structure providing a horizontal navigation clearance of 75 feet and a vertical clearance of 70 feet above MSL, water intake structures, numerous gravity drainage structures and two new pumping stations having a combined capacity of 650,000 gallons per minute.

DESCRIPTION OF REHABILITATION AND REPAIR WORK

Galveston Seawall and Groins

Although the seawall appears to remain structurally intact, the damage to toe scour protection and exposure of the sheet pile cutoff could have significant consequences for future wall stability. In addition, loss of integrity of the groins appears to have reduced their trapping efficiency which will result in increased erosion of the scour protection and exposure of the timber sheet pile cutoffs. Flanking of the seawall at the west end has exposed areas landward of the seawall to erosion, and continued erosion is possible from future wave impacts.

Elements of the Galveston Seawall proposed for repair include: 1) the Seawall West End Ramp; 2) the maintenance access ramp at 57th Street; 3) the maintenance access ramp at 35th Street; 4) the loss of subgrade and sidewalk between 25th and 22nd Street; 5) grade settling/toe protection in various locations; 6) void repair under sidewalk in various locations; 7) sheet pile repair at the seawall toe, 8) crack repair in various locations; and, 9) groin repair at 10th, 29th, 37th and 61st Streets. The locations of the repair work are shown in Figure 2.

Figure 2. Galveston Island Seawall and Groins.

The Texas City and Vicinity Hurricane Flood Protection Project

Storm surge and wave action from Hurricane Ike caused severe damage to portions of the levee system of the Texas City and Vicinity HFPP, including riprap displacement and severe erosion of the levee slope and toe. Rehabilitation and repairs to the Texas City and Vicinity HFPP will include the use of geotextile, blanket stone and riprap to restore the pre-storm cross-sections and/or conditions to the following areas that were damaged by erosion (Figure 3):

- Interior Levee Repairs - Station 150+00 to 152+50 where 250 linear feet of interior levee slope located northwest of Moses Lake was eroded

- Moses Lake Floodgate Protection - Stations 192+00 to 197+00 and 200+00 to 205+00 where the riprap and armoring system was eroded or displaced
- Levee Erosion Section One - Stations 205+00 to 278+00, 303+00 to 311+00, and 313+00 to 320+00, where levee erosion ranged from 5 to 15 feet
- Levee Erosion Section Two - Station 356+00 to 370+00, where levee erosion ranged from 40 to 50 feet
- Riprap Displacement - Stations 370+00 to 448+00 and 457+00 to 464+00 where the levee toe protection was damaged and riprap was displaced along the length of the levee

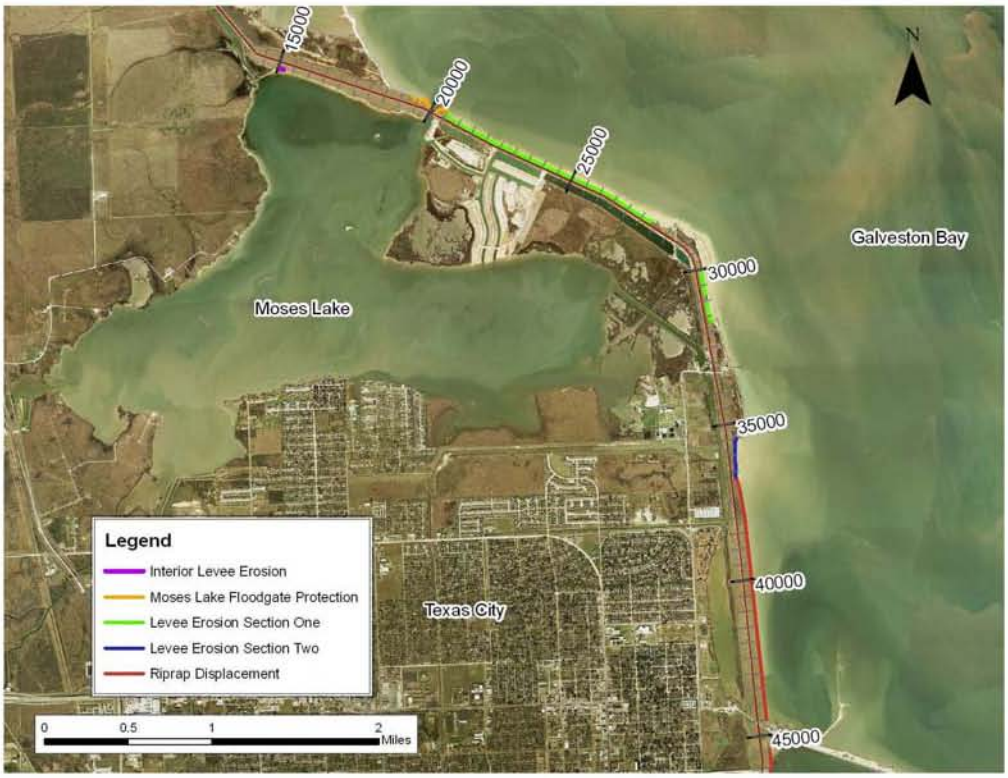

Figure 3: Texas City Levee Stationing and Proposed Repair Work

Freeport and Vicinity Hurricane Flood Protection Project

The Freeport and Vicinity HFPP will be restored to pre-storm conditions by making repairs to the following areas that sustained damage:

- -Velasco Memorial Tide Gate and the Port of Freeport
- -Sections of the removable panel wall from Station 197+00 to 224+24 at the Port of Freeport.

The Project will be repaired to provide the same level of flood protection as the pre-storm condition. The damaged emergency generator and associated system located within the Velasco Memorial Tide Gate house will be repaired or replaced to restore the pre-storm level of protection. In addition, the removable flood panel wall from Station 197+00 to 224+24 at the Port of Freeport which was damaged during Hurricane Ike will be replaced. Because the wall is within the Port of Freeport operating facilities, it must consider the operational constraints of the loading/unloading of ships. Two structural alternatives are under consideration (Figure 4):

- Option 1 - a removable flood panel wall
- Option 2 - permanent flood panel wall with removable gates that can be opened for Port of Freeport operations

Figure 4. Freeport and Vicinity HFPP flood panel wall repair work.

COMPLIANCE WITH LAWS AND REGULATIONS

Draft Environmental Assessments (EAs) are being coordinated with the US 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 to address potential impacts to piping plovers and sea turtles for the Galveston Seawall and Groins Project, and Attwaters prairie chicken for the Texas City and Vicinity Hurricane and Shore Protection Project. The Biological Assessments (Appendix B of

the Draft EAs) conclude that the projects may affect, but are not likely to adversely affect threatened or endangered species in the project areas.

The EAs also initiate Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The initial determination is that the proposed actions are minor and temporary in nature and 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 consultation 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 these projects 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 all projects 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 actions are 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 these projects because the projects are exempt actions under 40 CFR 93.153(e)(1) and 30 TAC 101.30(c)(5)(A).

The proposed activities will be coordinated with the State Historic Preservation Officer (SHPO). Our initial determination is that the proposed actions will not have any adverse impacts on historic or cultural resources. SHPO coordination of potential impacts to the Galveston Seawall, a National Register property has been initiated.

The following is a partial list of Federal, State, and local agencies with which these activities are 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 these repair projects will be based on an evaluation of the probable impact of the proposed activities on the public interest. That decision will reflect the national concern for both 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 projects will proceed unless found contrary to the overall public interest.

ENVIRONMENTAL DOCUMENTATION

It is anticipated that Environmental Assessments and Findings of No Significant Impact will fulfill the requirements of the National Environmental Policy Act. Single copies of these documents will be available by request to the address below. The draft EAs are 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 impacts of these proposed repair projects are requested to submit their comments within 10 days of the date of this notice, March 6, 2009 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.

Comments should make specific reference to the individual project to which they pertain. 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 the proposed work. Any questions concerning the proposed action may be directed to Ms. Carolyn Murphy at (409) 766-3044, or the email address above.

for Edward P. Pierz
David C. Weston
Colonel, Corps of Engineers
District Engineer

Appendix B – Biological Assessment and Endangered Species Coordination

BIOLOGICAL ASSESSMENT

FOR
EMERGENCY REPAIRS TO GALVESTON SEAWALL AND GROINS SYSTEM
GALVESTON COUNTY, TEXAS

February 2009

1.0 INTRODUCTION

1.1 PURPOSE OF THE BIOLOGICAL ASSESSMENT

This Biological Assessment (BA) has been 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 requiring the assessment is the Emergency Repairs to Galveston Seawall (Seawall) and Groins System (Groins), Galveston County, Texas (project). The proposed repairs would restore the project to its pre-storm conditions to provide the authorized and intended level of protection for the City of Galveston. This BA evaluates the potential impacts the proposed project may have on federally listed threatened and endangered species identified by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS; Services) from their websites.

The following species were identified by the Services as potentially occurring in Galveston County. The NMFS and FWS websites identified 13 species including smalltooth sawfish (*Pristis pectinata*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricate*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaengliae*), sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), brown pelican (*Pelecanus occidentalis*), and piping plover (*Charadrius melodus*).

The Texas Parks and Wildlife Department (TPWD) State Annotated County List includes a number of plants and animals in addition to the Federally recognized species, that are unlikely to occur in the project area and are not further addressed. This BA also describes the avoidance, minimization and conservation measures proposed for this project relative to the potentially impacted species covered in the BA, in order to assist the Services in fulfilling their obligations under the ESA. The draft EA to which this BA is appended includes a detailed project description and discussion of alternatives considered.

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND HABITAT IMPACTS

The project area is located on Galveston, a barrier island two miles off the Texas Coast approximately 40 miles south of Houston, Texas. The island is approximately three miles wide at its greatest width and approximately 28 miles long. The project extends approximately 10 miles along the Galveston's oceanfront, protecting life and property against the destructive natural forces of hurricanes and tropical storms. The proposed repairs would be conducted on the Seawall and Groins between 10th Street and the west end terminus of the Seawall, within the federally authorized footprint.

Brown pelicans, sea turtles, and piping plover may be found in the project area. Although the Kemp's Ridley sea turtle is the rarest of the sea turtles, in recent years there has been an increase in the reported nesting of this turtle along the Texas coast. It is possible that this species, and the loggerhead sea turtle, could occur in or near the project site during nesting season (USACE 1992, NMFS/NOAA website 2009). The closest repair site (groin repair at 10th Street) is located approximately 2.5 miles southwest of piping plover proposed Critical Habitat Unit TX-35 at Big Reef, Galveston, Texas for the wintering population of piping plovers. Proposed Critical Habitat Unit TX-35 will not be impacted by the proposed repairs to the Seawall and Groins, but piping plover habitat within the proposed project area would be impacted by proposed construction. Brown pelicans loaf and forage in the proposed project area.

2.0 IMPACT ASSESSMENT FOR LISTED SPECIES

The species identified in Table 1 are listed by FWS and NMFS as possibly occurring in Galveston County. Of the 13 listed species, four may be affected by the proposed project, including the piping plover, brown pelican, the loggerhead sea turtle and the Kemp's ridley sea turtle. A description of each species, identification of potential project impacts, and identification of conservation measures, if appropriate, are provided below.

Table 1: Federally Listed Threatened and Endangered Species for Galveston County

Common Name	**Scientific Name**	**Listing Status**	
		USFWS	**NMFS**
Fish			
Smalltooth sawfish	*Pristis pectinata*		Endangered
Reptiles			
Green sea turtle	*Chelonia mydas*	Threatened	Threatened
Hawksbill sea turtle	*Eretmochelys imbricata*	Endangered	Endangered
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered	Endangered
Leatherback sea turtle	*Dermochelys coriacea*	Endangered	Endangered
Loggerhead sea turtle	*Caretta caretta*	Threatened	Threatened

Common Name	Scientific Name	Listing Status	
		USFWS	**NMFS**
Birds			
Brown pelican	*Pelecanus occidentalis*	Endangered	
Piping plover	*Charadrius melodus*	Threatened	
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

*Critical Habitat

2.1 SMALLTOOTH SAWFISH

Smalltooth sawfish (*Pristis pectinata*) are generally slow growing, long lived (25-30 years), late-maturing fish. They produce a very small number of young, resulting in a very low rate of population growth for this species. Smalltooth sawfish species inhabit shallow coastal nearshore waters and estuaries throughout tropical regions of the world. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths.

The U.S. smalltooth sawfish population is found only in the Atlantic Ocean and Gulf of Mexico. Historically, the U.S. population was common throughout the Gulf of Mexico from Texas to Florida, and along the east coast from Florida to Cape Hatteras. Once common throughout its historic range, the smalltooth sawfish has declined dramatically in U.S. waters over the last century. Its current range has contracted to peninsular Florida, where they are relatively common only in the Everglades region of the extreme southern portion of the state (NMFS, 2006). Based on its present range, it is unlikely that this species occurs in the project vicinity.

2.2 GREEN SEA TURTLE

The green sea turtle (*Chelonia mydas*) inhabits shallow bays and estuaries in Texas where its principal foods, marine sea grasses, grow. Its population in Texas has suffered a decline similar to that of its world population. In the mid to late nineteenth century, Texas supported a green turtle fishery. Most of the turtles were caught in Galveston, Matagorda, and Aransas Bays, and the Laguna Madre, but by the early 1900's, this industry ceased because of the severe decline of the species. Green turtles still occur in these same bays today, but in much-reduced numbers. While green turtles prefer seagrass meadows, they may also be found in bays devoid of seagrasses. Green turtles in Texas bays are mainly small juveniles. Green turtle nests are rare in Texas, occurring primarily on Padre Island National Seashore (PINS). The project area is devoid of seagrasses, and does not possess an embayment, which may make it less attractive to this species.

2.3 HAWKSBILL SEA TURTLE

The hawksbill sea turtle (*Eretmochelys imbricate*), listed as endangered by the NMFS, is rare in Texas coastal waters. Hawksbills generally inhabit coastal reefs, bays, rocky areas, passes, estuaries, and lagoons. Along the Texas coast, this turtle may be attracted to stone jetties that provide foraging habitat. Adults are extremely rare, and Hildebrand (1983) believes that the hawksbills occurring in Texas waters are waifs, although Texas is the only state outside of Florida where hawksbills are sighted with any regularity. Most of the sightings involve posthatchlings and juveniles, and are primarily associated with stone jetties. In 1998 a hawksbill nest was recorded at PINS. No documented records of hawksbills exist from Galveston County, and it is unlikely that they will be found in this project area because of lack of foraging habitat.

2.4 KEMP'S RIDLEY SEA TURTLE

The Kemp's ridley sea turtle (*Lepidochelys kempii*) is the most critically endangered sea turtle. The primary range of the Kemp's ridley sea turtle is the Gulf of Mexico, but it also utilizes shallow water bays throughout its known distribution. Distribution appears closely related to the abundance of blue crabs, a favorite food item (Lutcavage and Musick, 1985). A favorite feeding ground is the crab-rich waters adjacent to the Mississippi Delta, east of Sabine Pass (Hildebrand, 1979). Adults are primarily restricted to the Gulf, although juveniles may range throughout the Atlantic Ocean. Although almost the entire population of Kemp's ridleys nests near Rancho Nuevo, Tamaulipas, Mexico, an increasing number of nests have been found along the Texas coast, with 128 nests recorded in 2007. The most current turtle nesting data from the National Park Service (NPS, 2008a, 2008b) indicates two Kemp's ridley nests at Surfside, approximately 10 miles northeast of the project area. In addition, there have been takes of Kemp's ridleys at Freeport in 2007 (USACE, 2008). The Kemp's ridley may be present in the project area.

2.5 LEATHERBACK SEA TURTLE

The leatherback sea turtle (*Dermochelys coriacea*) is rare along the Texas coast. This is not surprising because the leatherback is generally a pelagic species, tending to keep to deeper offshore waters, where it feeds primarily on jellyfish. Fritts *et al*. (1983), however, found this turtle more frequently in shallower waters in the Gulf than previously supposed. The last report of a leatherback nest in Texas was more than 70 years ago (NPS, 2007). There are no known aggregation sites or feeding areas in the project area. Therefore, this species is unlikely to occur in the project area.

2.6 LOGGERHEAD SEA TURTLE

The loggerhead sea turtle (*Caretta caretta*) frequents the temperate waters of the continental shelf along the Atlantic Ocean and Gulf of Mexico, where it forages around rocks, coral reefs, and shellfish beds. Sub-adults will also commonly enter bays, lagoons, and estuaries. The loggerhead is the most abundant turtle in Texas marine waters,

preferring shallow inner continental shelf waters and occurring only very infrequently in the bays. Although nests have been confirmed along the Texas coast in recent years, none have been found in the project vicinity. Therefore, this species may occur in the project area.

2.7 BROWN PELICAN

The brown pelican (*Pelecanus occidentalis*) almost completely disappeared from the Texas coast by the 1960's, largely due to the use of agricultural pesticides that bio-accumulate in the marine food chain and cause reproductive failure (King et al. 1977; Schreiber 1980). Since then, the use of chlorinated hydrocarbons for pest control has declined and the brown pelican has slowly recovered and spread through its original range. After years of unsuccessful nesting attempts, nesting activity has been on the increase since the late 1980's. This species is a common resident of the project area and forages along the beach. The closest nesting colony is Dressing Point Island in East Matagorda Bay, about 200 miles to the southwest of the project area.

2.8 PIPING PLOVER

The piping plover (*Charadrius melodus*) is threatened or endangered throughout its range. In Texas, the wintering piping plover is listed as threatened. An inhabitant of coastal beaches and tidal flats, the piping plover is a regular migrant along the Texas coast, where it overwinters (Oberholser 1974; Haig and Oring 1985, 1988; Haig et al. 1988). Piping plovers feed in moist sand along beaches and sand-mud flats around inlets and estuaries (Champman 1984). Two major populations of piping plover winter along North and South Padre Island and Bolivar Flats in Texas (50 FR 50726 (1985); Haig and Oring 1985). The closest repair site (groin repair at 10th Street) is located approximately 2.5 miles southwest of Critical Habitat Unit TX-35 at Big Reef, Galveston, Texas for the wintering population of piping plovers. Critical Habitat Unit TX-35 will not be directly impacted by the proposed repairs to the Seawall and Groins; however, piping plover habitat will be affected by the proposed work.

2.9 WHALE SPECIES

None of the five whale species listed by NMFS are expected to occur in the project area; therefore, no effects to the five whale species are anticipated from the proposed project.

3.0 EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

The following sections provide the findings of Galveston District and species-specific avoidance, minimization, and conservation measures that support the effect determinations presented. Effect determinations are presented using the language of the ESA:

- *No effect* – the proposed action will not affect a federally listed species or critical habitat;

- *May effect, but not likely to adversely affect* – the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial; or

- *Likely to adversely affect* – adverse effects to listed species and/or critical habitat may occur as a direct result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or completely beneficial. Under this determination, an additional determination is made whether the action is likely to jeopardize the continued survival and eventual recovery of the species.

3.1 EFFECTS ON SMALLTOOTH SAWFISH

This species is highly unlikely to occur in the project area; therefore, the proposed action will not affect the smalltooth sawfish.

3.2 EFFECTS ON SEA TURTLES

It is unlikely that leatherback, hawksbill, and green sea turtles would occur in the project area; therefore, no effect on these species is anticipated. It is possible that the Kemp's ridley turtle and Loggerhead sea turtle could occur in or near the project site during nesting season and monitors will be checking for the presence of these species; therefore, the proposed action may effect, but is not likely to adversely affect these species.

3.2.1 Avoidance, Minimization, and Conservation Measures

Management measure would be implemented during repair activities to avoid and minimize any adverse impacts to sea turtles:

- The Contractor shall have all construction workers trained by qualified personnel to recognize protected species, including sea turtles and their tracks. Workers shall also be trained on the avoidance and minimization measures required during project construction. Construction workers shall immediately notify the monitor of any sightings of sea turtles in the immediate project area.

- The Contractor shall hire and train an independent, qualified monitor or monitors to monitor all construction activities; escort construction vehicles to and from work sites, and monitor for the presence of threatened and endangered species. The trained monitor(s) shall survey the beach daily for sea turtles, sea turtle tracks, and sea turtle nests prior to the initiation of any construction activity, and periodically throughout the day. The monitor(s) shall also stop work in the event sea turtles, their nests or their eggs are found on the beach. The monitor(s) shall

safeguard any turtle eggs until they can be relocated by the appropriate, permitted individuals. The monitor(s) shall keep a daily log documenting all surveys conducted during the beach construction project. The Contractor shall designate and provide USACE with name of a monitor who will act as a single point of contact responsible for communicating, monitoring and reporting on endangered species issues during construction.

- A monitor shall be present at each location where Contractor places any material into the water and shall monitor for the presence of sea turtles whenever the Contractor is placing materials into the water. The monitor(s) shall ensure that materials are not placed into the water while any sea turtles are present

- To the extent practicable, materials and equipment required for the project shall be staged in upland areas, not on the beach, and transported as needed to the work sites. There shall be no overnight storage of equipment or vehicles on the beach. For any materials staged on the beach, the Contractor shall erect an exclusion fence to prevent sea turtles from entering the staging area(s).

- The number of vehicles transiting from staging areas to the project sites shall be kept to a minimum; all vehicles shall use the same pathway whenever possible, and vehicle access shall be confined to the immediate needs of the proposed project.

- Placed dredged or fill material shall be maintained at a gradual slope, and after project completion all mud or wind tidal flats and/or project sites seaward of the mean high tide line shall be restored to pre-construction slope or contours, and all ruts shall be removed.

- Contractor shall smooth out ruts in the beach at the end of each construction day.

- Use of night lights shall be minimized, directed toward the construction activity area, and shielded from view outside of the construction activity area.

3.3 BROWN PELICAN

Foraging brown pelicans are common along the Texas Coast and may be found in the project area. However, no nesting sites are located in the project area. Although the beach in the project area may be used for loafing, pelicans are highly mobile and are able to relocate to avoid disturbance from repair activities. Although there may be disturbance of feeding and displacement during construction, these are localized activities that would not negatively affect this species' feeding, nesting, or resting activities overall. We conclude that the proposed project will have no effect on the brown pelican.

3.4 PIPING PLOVER

The closest repair site is located 2.5 miles southwest of designated wintering piping plover Critical Habitat Units TX-35. However, the repairs would impact piping plovers and their habitat along the beachfront where construction, access, and staging would occur. Noise disturbance is expected to be limited and temporary in nature. A number of measures to mitigate possible project impacts are proposed below, and based on these measures, we conclude that the proposed project may effect, but is not likely to adversely affect the piping plover.

3.4.1 Avoidance, Minimization, and Conservation Measures

Management measure would be implemented during repair activities to avoid and minimize any adverse impacts to piping plover:

- The Contractor shall have all construction workers trained by qualified personnel to recognize protected species, including piping plovers. Workers shall also be trained on the avoidance and minimization measures required during project construction. Construction workers shall immediately notify the monitor of any sightings of endangered species in the immediate project area.

- The Contractor shall hire and train an independent, qualified monitor or monitors to monitor all construction activities; escort construction vehicles to and from work sites, and monitor for the presence of threatened and endangered species. The trained monitor(s) shall survey the beach daily for piping plovers prior to the initiation of any construction activity, and periodically throughout the day. The monitor(s) shall ensure that no piping plovers are affected by work activities and ensure loafing and/or resting birds are not in the project area during construction. The monitor(s) shall keep a daily log documenting all surveys conducted during the project. The Contractor shall designate and provide USACE with name of a monitor who will act as a single point of contact responsible for communicating, monitoring and reporting on endangered species issues during construction.

- To the extent practicable, materials and equipment required for the project shall be staged in upland areas, not on the beach, and transported as needed to the work sites. There shall be no overnight storage of equipment or vehicles on the beach. For any materials staged on the beach, the Contractor shall erect an exclusion fence.

- The number of vehicles transiting from staging areas to the project sites shall be kept to a minimum; all vehicles shall use the same pathway whenever possible, and vehicle access shall be confined to the immediate needs of the proposed project.

- Placed dredged or fill material shall be maintained at a gradual slope, and after project completion all mud or wind tidal flats and/or project sites seaward of the

mean high tide line shall be restored to pre-construction slope or contours, and all ruts shall be removed.

- Contractor shall smooth out ruts in the beach at the end of each construction day.

- Use of night lights shall be minimized, directed toward the construction activity area, and shielded from view outside of the construction activity area.

3.5 EFFECTS ON WHALES

None of the five whale species are expected to occur in the project area; therefore, the proposed action will not affect the five whale species.

4.0 CONCLUSIONS

The proposed project may affect, but is not likely to adversely affect the brown pelican, piping plover, and Kemp's ridley and loggerhead turtles as a result of construction activities on the beach, Seawall, and Groins. Conservation measures have been proposed to avoid or minimize impacts to these species.

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

Texas

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

Designated Critical Habitat
None

Species Proposed for Listing
None

Proposed Critical Habitat
None

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

http://sero.nmfs.noaa.gov/pr/pdf/Texas.pdf

Texas

Candidate Species[2]	Scientific Name
none	

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

[2] The Candidate Species List has been renamed the Species of Concern List. The term "candidate species" is limited to species that are the subject of a petition to list and for which NOAA Fisheries Service has determined that listing may be warranted (69 FR 19975).
[3] Species of Concern are not protected under the Endangered Species Act, but concerns about their status indicate that they may warrant listing in the future. Federal agencies and the public are encouraged to consider these species during project planning so that future listings may be avoided.

http://sero.nmfs.noaa.gov/pr/pdf/Texas.pdf

U.S. Fish & Wildlife Service

Endangered Species List

Back to Start

List of species by county for Texas:

Counties Selected: Galveston

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Galveston County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
Attwater's greater prairie-chicken	*Tympanuchus cupido attwateri*	Birds	E				
bald eagle	*Haliaeetus leucocephalus*	Birds	DM				
brown pelican	*Pelecanus occidentalis*	Birds	DM, E				
Eskimo curlew	*Numenius borealis*	Birds	E				
green sea turtle	*Chelonia mydas*	Reptiles	E, T				
hawksbill sea turtle	*Eretmochelys imbricata*	Reptiles	E				
Kemp's ridley sea turtle	*Lepidochelys kempii*	Reptiles	E				
leatherback sea turtle	*Dermochelys coriacea*	Reptiles	E				
loggerhead sea turtle	*Caretta caretta*	Reptiles	T				
piping Plover	*Charadrius melodus*	Birds	E, T			Final	

Appendix C – 401 Certification Waiver

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 D – 404(b)(1) Evaluation

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

GALVESTON HARBOR AND CHANNEL, TEXAS: EMERGENCY REPAIRS TO GALVESTON SEAWALL AND GROIN SYSTEM GALVESTON 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/Tidal Marsh	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 *Restoration of the Seawall and Groins will provide direct and safe access to beaches and Seawall businesses.			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 * The repairs to the Seawall and Groins will ensure that the Seawall, which is listed on the NRHP, will be properly maintained and will halt further degradation.			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	X
3) Results from previous testing of the material or similar material in the vicinity of the project	X
4) Known, significant sources of persistent pesticides from land runoff or percolation	
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	X
6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	
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	

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:

	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:	**Nicole C, Minnichbach**
Position:	**Archeologist**

8. Findings	**Yes**
a. The proposed placement site for discharge of 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	

2/23/2009 Date	Carolyn Murphy CAROLYN MURPHY Chief, Environmental Section

Appendix E – TCMP Consistency Evaluation

COMPLIANCE WITH GOALS AND POLICIES - SECTION 501.30
ALTERATION OF COASTAL HISTORIC AREAS
EMERGENCY REPAIRS
TO
GALVESTON HARBOR AND CHANNEL, TEXAS
GALVESTON SEAWALL AND GROIN SYSTEM
GALVESTON COUNTY, TEXAS

Section 501.30 Alteration of Coastal Historic Areas

(a) Development affecting a coastal historic area shall avoid and otherwise minimize alteration or disturbance of the site unless the site's excavation will promote historical, archaeological, educational, or scientific understanding.

Compliance: *The Galveston Harbor and Channel, Texas: Emergency Repairs to the Galveston Seawall and Groin System, Galveston County, Texas is an existing Federal project. The original 3-mile segment of the Galveston Seawall is listed on the National Register of Historic Places under Criteria A and C at the national level of significance in the areas of Engineering, Politics/Government, Community Planning and Conservation. Five additional segments of the Seawall and a system of groins were constructed between 1904 and 1962, and are eligible for the National Register under Criterion A at the state level of significance. The proposed work involves repairs to the Galveston Seawall and Groin System to restore areas that were damaged by erosion during Hurricane Ike to pre-storm conditions. The proposed repairs will not adversely affect this historic property.*

(b) The Texas Historical Commission shall comply with the policies in this section when adopting rules and issuing permits under the Texas Natural Resources Code, Chapter 191, governing alteration of coastal historic areas. The THC shall comply with the policies in this section when issuing reviews under the National Historic Preservation Act, §106 (16 United States Code Annotated, §470f), and the regulations enacted pursuant thereto, Code of Federal Regulations, Title 36, Chapter 1, Part 63.

Compliance: *The Galveston Harbor and Channel, Texas: Emergency Repairs to the Galveston Seawall and Groin System, Galveston County, Texas is an existing Federal project. The proposed work involves repairs to the Galveston Seawall and Groin System to restore areas that were damaged by erosion during Hurricane Ike to pre-storm conditions. The proposed repairs have been coordinated with the Texas State Historic Preservation Officer, the Texas Historical Commission. The Texas Historical Commission has found that the repairs will have no adverse effect on the Galveston Seawall and Groin System.*

Appendix F – Air Conformity Determination

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 _____ 24 FEB 09

David C. Weston
Colonel, Corps of Engineers
District Commander

Date

DRAFT
STATEMENT OF FINDINGS
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR EMERGENCY REPAIRS
TO THE
GALVESTON SEAWALL AND GROINS SYSTEM
GALVESTON COUNTY, TEXAS

1. Purpose. This document addresses the proposed repairs to the Galveston Seawall (Seawall) and Groins System (Groins). The purpose of the proposed project is to restore the Seawall and Groins to their pre-Hurricane Ike condition. The combined storm surge and wave action from Hurricane Ike, which made landfall in Galveston on September 13, 2008, was the primary cause of damage to the Galveston Seawall. Although the Seawall appears to remain structurally intact, the damage to toe scour protection and exposure of the sheet pile cutoff could have significant consequences for future Seawall stability. In addition, loss of integrity of the Groins appears to have reduced their sand trapping efficiency which will result in increased erosion of the Seawall. Flanking of the Seawall at the west end has exposed areas landward of the Seawall to erosion, and continued erosion is possible from future wave impacts. Lack of repair prior the next hurricane season, June 2009, increases the risk of failure and potential new damages during a significant storm event and threatens the protected community and property of Galveston. 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 repair of this project.

2. Proposed Action. Two alternatives were evaluated including No Action, and the proposed repairs to the Seawall and Groins, which is the Recommended Plan. The proposed Federal action would consist of the construction of a new wall section at the Seawall West End Ramp, repairs to the maintenance access ramps at 57th and 35th Streets, repairs to the loss of subgrade and sidewalk between 25th and 22nd Streets, repair of grade settling and toe protection in various locations, void repair under the Seawall sidewalk in various locations, sheet pile repair at the Seawall toe, Seawall crack repair in various locations, and groin repair at 10th, 29th, 37th and 61st Streets.

3. Coordination. A Notice of Availability was issued to interested parties including Federal and state agencies, which described the proposed action and announced the availability of the Draft EA. Comments on the Notice of Availability 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 proposed project would result in temporary impacts to fish and

wildlife resources. No significant degradation of water quality would occur and no impacts to cultural resources would result from the proposed project. In consultation with the U.S. Fish and Wildlife Service, avoidance and conservation measures were identified to protect threatened and endangered species in the proposed project area, resulting in a finding of not likely to adversely affect piping plovers, brown pelicans, and sea turtles. The project has been found to be consistent with the Texas Coastal Management Plan, and compliant with Essential Fish Habitat (EFH). The Texas Commission on Environmental Quality has issued a waiver for Section 401 certification for the project. In addition, a Section 404(b)(1) Evaluation (short form) of project impacts to water quality indicates the project will not adversely affect water quality. 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 analysis of the environmental impacts of the proposed project is based on the accompanying Final EA. Factors considered in the review were impacts to vegetation, wildlife, aquatic resources including Essential Fish Habitat (EFH), threatened and endangered species, cultural resources, socioeconomic resources, Environmental Justice, Prime and Unique Farmlands, Hazardous, Toxic, and Radioactive Wastes, air, noise, water quality, recreational resources, roadways and traffic as well as cumulative impacts**.** The proposed project was found to compliant with the Endangered Species Act, Clean Air Act, Clean Water Act, EFH, and the Texas Coastal Management Plan (TCMP).

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 Seawall and Groins System will not have a significant effect on the quality of the human environment. Galveston District reviewed the project for consistency with the goals and policies of the TCMP. Coastal Natural Resource Areas in the project area were identified and evaluated for potential impacts from the proposed project and no adverse impacts were identified. Based on this analysis, I find that the proposed plan is consistent with the goals and policies of the TCMP to the maximum extent practicable. 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.

_____

_____

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