

**Freeport Harbor Channel Improvement Project,
Brazoria County, Texas
Final Integrated General Reevaluation Report and
Environmental Assessment**

Appendix I

**FISH AND WILDLIFE COORDINATION ACT
COORDINATION ACTION REPORT**

November 2017



In Reply Refer To:
FWS/R2/
02ETTX00-
2016-CPA-0048

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office

17629 El Camino Real, Ste 211

Houston, Texas 77058

281/286-8282/ (FAX) 281/488-5882



October 31, 2016

Colonel Lars Zetterstrom
Attention: Janelle Stokes, Environmental Section
U.S. Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

Dear Colonel Zetterstrom:

The Fish and Wildlife Coordination Act (FWCA) (Public Law 85-624; 16 U.S.C. 661 - 666) requires that the U.S. Army Corps of Engineers (Corps) coordinate with the Department of Interior U.S. Fish and Wildlife Service (Service) where waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted...or otherwise controlled or modified to consult for the purpose of "preventing loss of and damage to wildlife resources." This Fish and Wildlife Coordination Act Report (CAR) provides the Service's analysis of impacts and mitigation for important fish and wildlife resources related to the proposed widening and dredged material disposal activities for the Freeport Harbor Channel Improvement Project located in Brazoria County, Texas. It is in fulfillment of our joint Scope of Work on this project, dated June 06, 2016 that this CAR is presented. Procedurally, project construction is authorized; however, attached is the report from the Secretary of the Interior as required by Section 2(b) of the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.). The FWCA requires that the Section 2 (b) report be made an integral part of any report supporting further project authorization or administrative approval.

Previous Service involvement with the Freeport Harbor Deepening and Widening Channel Improvement Project occurred by way of a Planning Aid Letter, submitted April 5, 2007, and CAR, submitted March 20, 2008. Both documents provided an initial analysis of important native fish and wildlife resources potentially affected by the proposed land disposal plans and furnished a draft mitigation plan based on a Habitat Evaluation Procedures analysis conducted by our office. The attached CAR evaluates environmental impacts as part of the proposed selective widening and dredge material disposal plan for the Freeport Harbor Channel and recommends mitigation alternatives should the project impacts warrant this. Additionally, the Service has the following recommendations regarding the Freeport Harbor Channel Improvement Project:

1. The Service urges the Corps to adopt a policy/standard operating procedure to use at least 75% of maintenance dredge and new work material responsibly over the 50-year time period of this federal project. As such, we recommend the Corps reevaluate the dredged material management plan to include beneficial use opportunities in lieu of sending the material offshore and to confined upland disposal sites. Additionally, we urge the Corps to evaluate

transporting new work and maintenance material to areas outside of the typical 6-mile pump distance to other areas along the Gulf Inter-coastal Waterway (GIWW) as cost alternatives to Placement Area (PA) construction and levee rising. This material is needed to combat changes in water levels, erosion, and subsidence in most marsh habitats found along the entire GIWW.

2. Work with resource agencies to develop suitable plans and construct a 2 to 12-acre colonial waterbird nesting island, approximately 8ft above mean high water or flood stage and at least one half mile (preferably one mile) offshore in a nearby bay. The island should include a sloping sand beach, preferably protected by a rock breakwater structure similar in design to Evia Island in Galveston Bay. The Service can assist with location, final design, and management of the new island.
3. The Corps should work with Freeport Harbor Channel tenants, operators, and the natural resource community to beneficially use dredged material in lieu of upland and offshore placement.
4. The Service does not anticipate any negative impacts to terrestrial or avian wildlife during the course of the dredging and staging portions of the project if the Corps incorporates best management practices into their construction strategies. These best management practices should include: avoiding contact with any wildlife species; removal of trash daily; incorporate slower transportation speeds within the project area (on land and in the water); and educating construction staff about the presence of wildlife species within the project area.
5. The Corps initiate coordination with NMFS regarding EFH impacts and mitigation issues within the project area.
6. All new work and maintenance material should be thoroughly tested for contaminants using the standards outlined in the Environmental Protection Agency's Inland Testing and Ocean Dumping Manuals prior to being used in any beneficial use projects, placement in upland confinement, or offshore disposal sites. Should data suggest toxic levels of contaminants are present, the Service recommends disposal of the material within an approved landfill site.
7. While no wetland impacts are anticipated within the current scope of the project, the Service recommends the Corps fully compensate for any unavoidable losses of wetland habitats should the scope of the project change during the final design phase.
8. If the proposed project features change, the status of species change, or the project is not implemented within three years of the date of our Endangered Species Act (Act) coordination, we recommend that the Corps reevaluate the project's effects and species status and initiate any necessary consultation procedures pursuant to Section 7 of the Act.

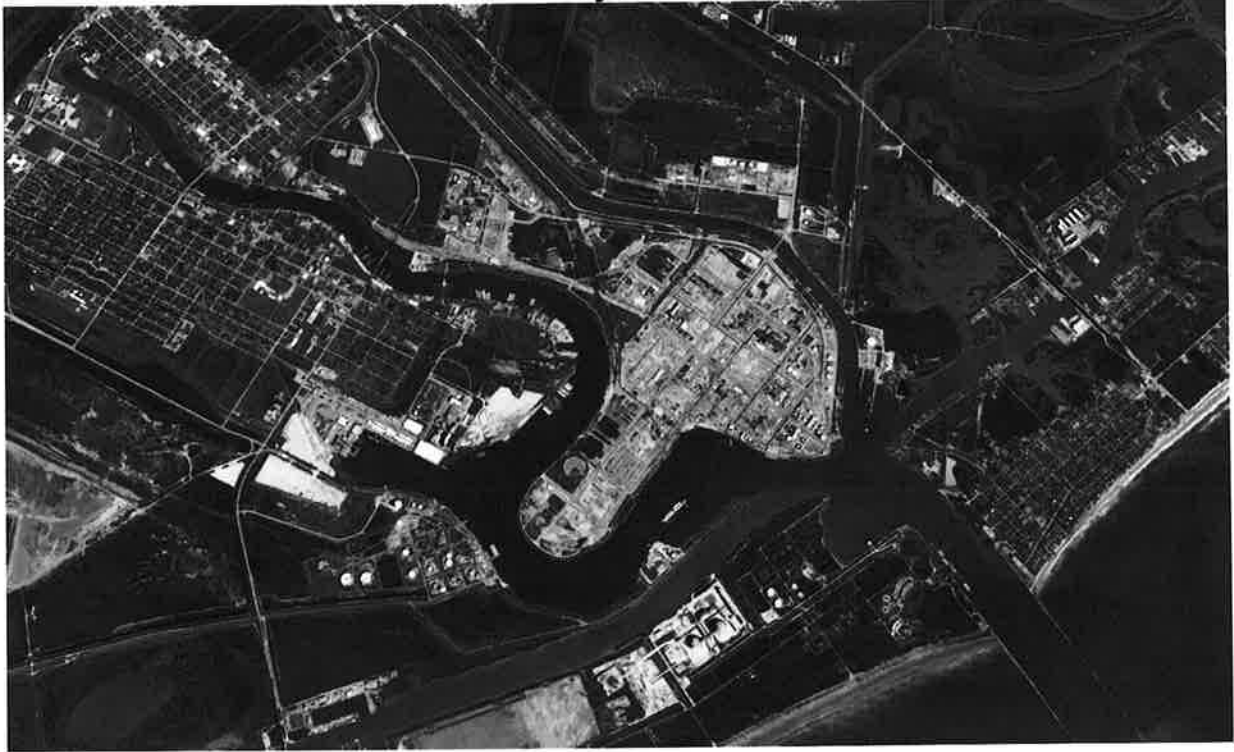
We appreciate the opportunity to participate in the planning of this project and look forward to working with your staff on this and future federal projects. If you have any questions or comments concerning this report, please contact staff biologist Donna Anderson at (281) 286-8282.

Sincerely,



Charles Ardizzone
Project Leader

Freeport Harbor Channel Improvement Project, Brazoria County, Texas



Submitted to:
Galveston District
U.S. Army Corps of Engineers

Prepared by:
Texas Coastal Ecological Services Field Office
Houston, Texas

Reviewed by:
Chuck Ardizzone
Project Leader

U.S. Fish and Wildlife Service
Region 2
Albuquerque, New Mexico
October 18, 2016



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Report Acronyms

Coordination Act Report	CAR
Dredged Material Management Plan	DMMP
Essential Fish Habitat	EFH
Fish and Wildlife Coordination Act	FWCA
General Reevaluation Report and Environmental Assessment	GRR-EA
Gulf Intercoastal Water Way	GIWW
Migratory Bird Treaty Act	MBTA
National Marine Fisheries	NMFS
Ocean Dredged Material Disposal Site	ODMDS
Operations and Maintenance	O&M
Placement Area	PA
Texas Park and Wildlife Department	TPWD
United States Corps of Engineers	USACE
United States Fish and Wildlife Service	USFWS
Water Resources Reform and Development Act	WRDA

Introduction

This final report provides planning assistance on the proposed Freeport Harbor Channel Improvement Project, located in Brazoria County, Texas. The project is authorized by Section 216 of the 1970 Flood Control Act and the Water Resources Reform and Development Act of 2014 (WRDA). As a result, the Corps will develop an Integrated General Reevaluation Report and Environmental Assessment (GRR-EA) focusing on revisions to the authorized plan where only a short segment of the interior channel will be affected. The current GRR-EA does not authorize any deepening features and the channel will remain at a 46-foot depth mean lower low water, however the GRR must reevaluate the WRDA authorized channel depth of 50-foot for economic benefits. The purposes of this report are to identify and describe existing fish and wildlife resources within the proposed study and project areas; evaluate and compare currently proposed alternatives; identify modifications or additional alternatives needed to address fish and wildlife related problems, opportunities, and planning objectives; and recommend any preliminary measures for resource protection during early project planning.

Procedurally, while project construction is authorized, the scope of the project has changed and attached is the report of the Secretary of the Interior that is required by Section 2(b) of the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.). The FWCA requires the Section 2(b) report be made an integral part of any documentation supporting further project authorization or administrative approval.

The Service bases our evaluation on the current data and analyses available from Corps sources and Service files. The Service understands the project may be subject to further Congressional approval and funding will occur sometime in the future with or without project modifications. Additional Service involvement for subsequent detailed planning, engineering, design, and construction phases of each planning effort is required to fulfill our responsibilities under the FWCA.

Background

Located along the upper Texas coast in Brazoria County and encompassing the communities of Surfside, Quintana, Oyster Creek City, and the City of Freeport, the Freeport Harbor Channel provides deepwater access from the Gulf of Mexico to the Port of Freeport. The jettied waterway extends up 0.83-miles to the Lower Turning Basin, then westerly 1.5 miles to and including the Brazosport Turing Basin, then westerly again almost 2.2 miles through the upper Turning Basin to and including the turning basin at Brazos Harbor. The Stauffer Channel extends 1.15 miles from the Upper Turning Basin to the Stauffer Turning Basin (Figure 1) where it dead-ends near State Highway 288. The existing Freeport Harbor Channel was authorized by the River and Harbors Act of May 1950 and July 1958 providing for an entrance channel of 38-foot depth and 300-foot width from the Gulf of Mexico. Channel relocation and deepening to 45-foot and a width of 400-foot was authorized by Congress in 1978. A depth of 50-foot was authorized by WRDA in 2014; however, for the purpose of the GRR-EA and this report, a 46-foot depth will be assumed for the entire channel.

The Corps documents shipping limitations including one-way traffic, daylight only operations for larger vessels, and restrictions when winds exceed 20 knots (USACE, 2012). Currently large crude carriers must be light-loaded offshore and cargo transferred to smaller crude tankers to enter the Freeport Harbor Channel and deliver product. The Port of Freeport anticipates future delays in shipping, congestion, and lightering operations as the market for crude imports and exports increases, as well as increases in the risk of collision and spills should the WRDA authorized project not be constructed.

Project Area

The larger project area is comprised of the City of Freeport to the north, the city of Surfside Beach to the east and city of Quintana to the west (Figure 1). The cities of Surfside and Quintana both have beach frontage comprised of beach, dunes, and wetland complexes. The immediate project area is highly industrialized with commercial petro-chemical, shipping, and fishing properties lining the channel.

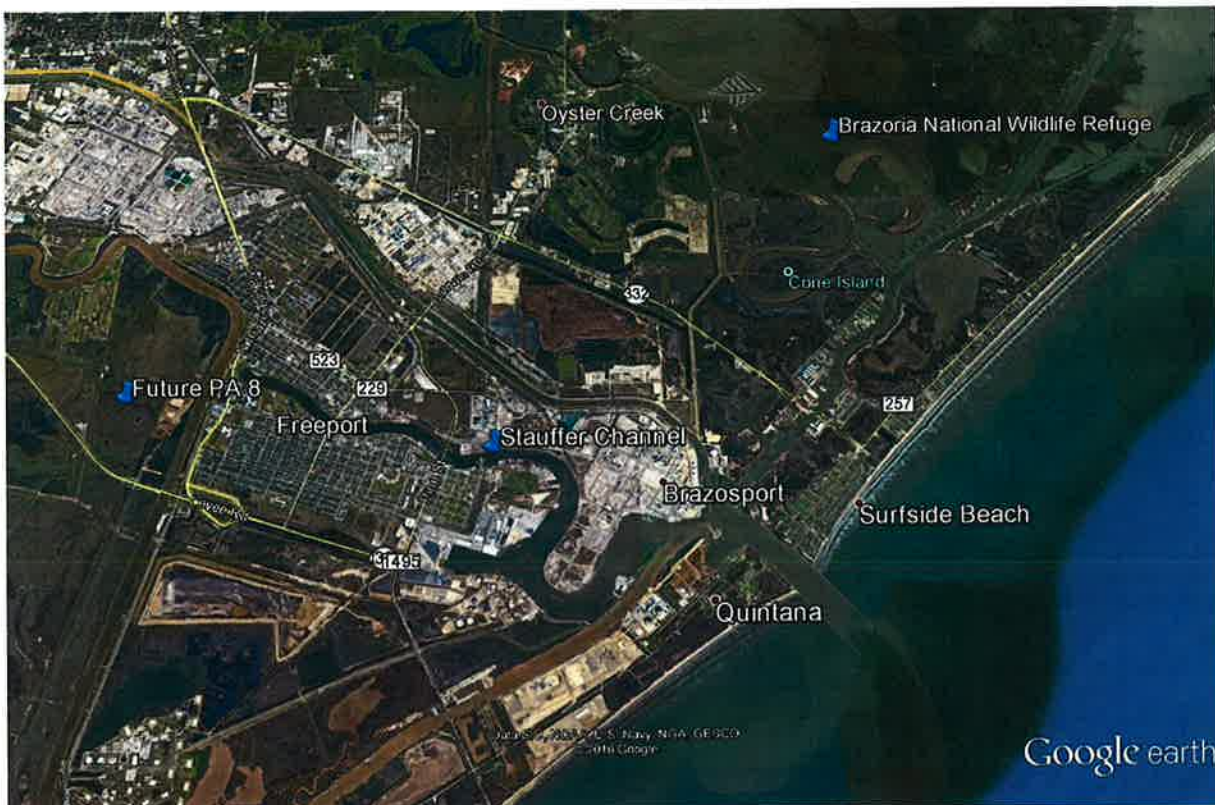


Figure 1 Freeport Harbor Channel and Surrounding Area Features

The shoreline on both the Surfside Beach (eastern) and Quintana Beach (western) areas has changed substantially over the last 150 years. Most of the Texas shoreline is now in retreat due to increases in water levels and a reduced sediment supply resulting from changes to the Mississippi and Atchafalaya river systems and from reservoirs built on Texas rivers. A major shoreline change factor for the Freeport area was the Brazos River diversion in 1929 to control

excessive dredging requirements in the Port Freeport. The relocation had the unanticipated side effect of moving the main sediment source away from the immediate project area beaches. The construction and development of reservoirs within the Brazos River watershed, while essential for water supply and flood control, has greatly reduced the sediment supply at the relocated Brazos River mouth. Additionally, the largest rate of shoreline change occurs with severe storms events. The Freeport area has experienced 16 tropical storms and hurricane events (some events may only include wind damage from nearby storms) since 1888. As a result of past hurricane events and the importance of the commercial and industrial import and exports of the Freeport Harbor Channel, the Corps has targeted the immediate project area as part of the larger Sabine to Galveston Coastal Storm Surge Risk Management study. This study will identify deficiencies in current protection measures and make recommendations for others that may be funded through Congressional actions at a later time. Current measures being recommended include a levee system (outlined in yellow in Figure 2).

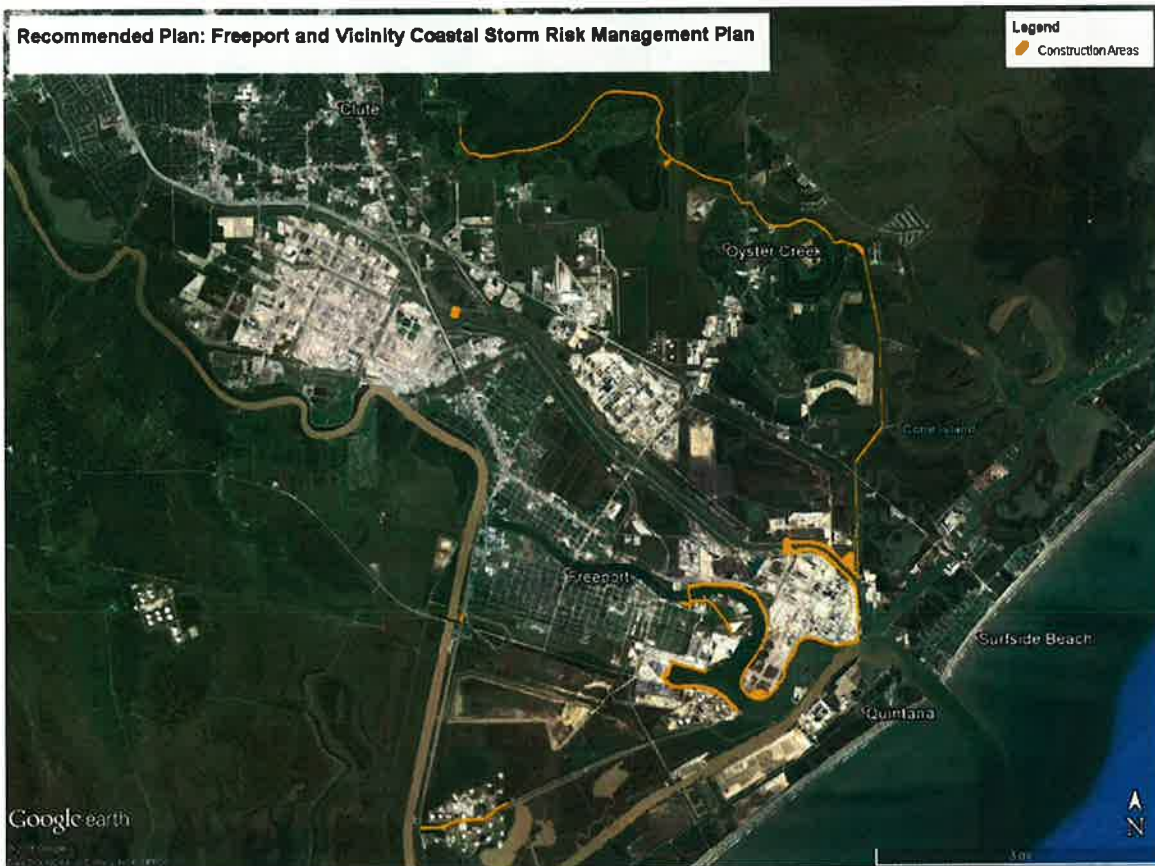


Figure 2 Proposed Freeport and Vicinity Tentatively Selected Plan for Coastal Storm Surge Reduction
Source: USACE, 2015

Alternatives under Consideration

The GRR Study will evaluate the previously authorized 2014 WRDA project and recommend modifications to that plan based on current economic and physical conditions. The Alternatives under consideration for the GRR-EA include selective widening at what is known as the Dow

Thumb, dredging out a portion of land to create bend easing, and dredging the “notch” at the Upper Turning Basin. All the above alternatives include a depth of 46 feet mean lower low water depth. All features are necessary to meet the Port of Freeport’s goal to ease ship traffic constraints and promote safer passing within the Freeport Harbor Channel and are outlined below and in Figure 3.

- Alternative 1 – No Action or Future Without-Project Condition
- Alternative 2 – Widening at Dow Thumb (375 feet), bend easing, and notch at Upper Turning Basin
- Alternative 3 – Widening at Dow Thumb (400 feet), bend easing, and notch at Upper Turning Basin
- Alternative 4 – Widening at Dow Thumb (425 feet), bend easing, and notch at Upper Turning Basin



Figure 3 Freeport Harbor Channel Improvement Project Map

Source: USACE, 2016

Dredge Material Placement Plan (DMMP)

Texas ports rank first in the nation in waterborne commerce and handle nearly 43 percent of the nation’s crude imports and 24 percent of the nation’s exports (USACE, 2013). The Corps must ensure that all Federal harbor dredge projects are performed in an environmentally acceptable manner, use current engineering techniques, are economically justified, and determine long term capacity needs for a 50-year period (USACE, 2016). To accomplish this task, the Corps is required to develop a dredge material management plan that identifies quantities, types of dredge material, and locations for placement of material during the new work and subsequent maintenance dredge phases. New work dredging removes sediments never previously dredged

(virgin materials) such as in channel deepening and widening and usually consist of a firm clay material. Maintenance dredging is the removal of sediments accumulated in the channel, usually done on a consistent cycle of 1-3 years depending on the amount of ship traffic and storm events and usually consists of small amounts of sand combined with fine silts with some clay.

The Corps updated the dredge material assumptions made in the authorized 2014 WRDA (2012 Feasibility Study) (United States Government). The 2016 GRR-EA proposes to alter the dredge management plan again with all new work materials placed into PA 1 (an existing dredge material placement area), and all maintenance materials for the entire channel placed in the Maintenance Ocean Dredged Material Disposal Site (ODMDS) (in accordance with O&M current operations) resulting in no additional or new placement area construction. The ODMDS is located approximately 2.5 miles from the mouth of the Jetty Channel and almost three miles from shore. The site is believed to be located in a dispersive offshore environment encompassing almost 1,129 acres of bottom area and is considered by the Corps to have unlimited placement potential (Figure 4).

Current revisions to 40 CFR Part 228.14 now allows material from the entire channel to be placed offshore in the ODMDS where prior restrictions limited placement to only certain reaches of the channel (USACE, 2016). While this plan satisfies the Corps' immediate and long term goals of dredge material management, it is the Service's position that the Corps adopt a standard operating procedure incorporating beneficial use of dredge material (new work and maintenance) as a first priority for all dredge material management plans along the entire Texas coast. The continued acquisition of land for construction of confined upland placement areas combined with the use of ODMDS sites provide little hope of returning sediment to the near-shore littoral system. The

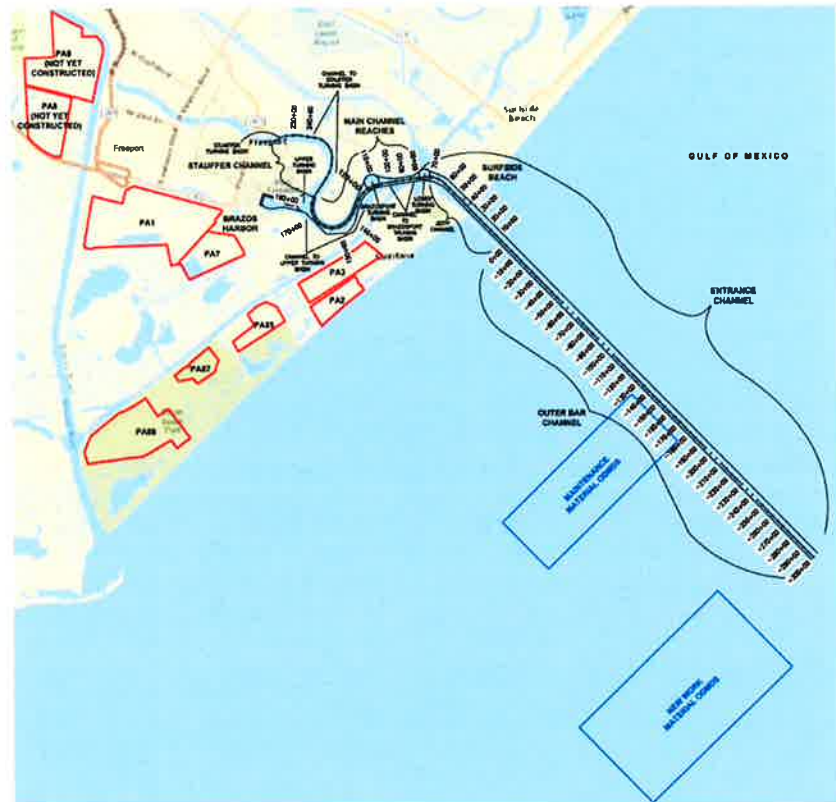


Figure 4 New Work and Maintenance Disposal Sites for Freeport Harbor Channel Improvement Project
Source: USACE 2016

The

Corps too easily disqualifies beneficial use leaving current sediment starved marsh habitat doomed to degradation. While the Service understand the Corps constraints are tied to current regulations and Corps guidance, we will continue to challenge the Corps to creatively support the beneficially use of dredge material along the Texas coast.

For the Freeport Harbor Channel Improvement Project, the Corps developed the following new-work quantities and disposal site (Table 1) assuming the 400-foot alternative. This DMMP also considers the availability of an additional 2.0 million cubic yards (mcy) of new work material will be available from the Stauffer Channel deepening and is considered part of the Freeport Harbor Channel Improvement Project. The Corps anticipates an estimated 15 mcy of maintenance material to be removed over the 50-year life of the project assuming a constant 46-foot depth.

Table 1 New Work Dredged Material Volumes and Placement at Freeport Harbor Channel

Reach	Stations		In-place Volume (cy)	Bulk Factor	Bulk Volume (cy)	Disposal Site
	From	To				
Bend Easing	147+00	159+85	1,556,000	1.1	1,711,600	PA1
Turning Notch	175+77	181+41	132,000	1.1	145,200	PA1
Channel Widening	142+28	185+26	262,000	1.1	288,200	PA1
Stauffer Channel	185+26	260+00	2,000,000	1.1	2,200,000	PA1
Total New Work Dredged Material	142+28	260+00	3,950,000	1.1	4,345,000	PA1

Source: USACE 2016

Table 2 below illustrates the Corps' plan for maintenance material over the life of the project and dredging times are based on a three-year cycle resulting in a dredged volume average of almost one mcy per cycle. All of the maintenance material is destined for the Maintenance ODMDS.

Table 2 Maintenance Material Volumes over the 50-year Project

Reach	Stations		Annual Vol. (cy)	Cycle Length (year)	Vol. per Cycle (cy)	No. of Cycles	Total Vol. (cy)	Disposal Site
	From	To						
Bend Easing	147+00	159+8 5	30,900	3	92,700	16	1,483,200	Maintenance ODMDS
Turning Notch	175+77	181+4 1	10,800	3	32,400	16	518,400	Maintenance ODMDS
Channel Widening	142+28	185+2 6	12,900	3	38,700	16	619,200	Maintenance ODMDS
Existing Harbor Channel	71+52	185+2 6	261,000	3	783,000	16	12,528,000	Maintenance ODMDS
Total Maintenance Dredged Material	71+52	185+2 6	315,600	3	946,800	16	15,148,800	Maintenance ODMDS

Source: USACE 2016

The DMMP did briefly discuss beneficial use of dredged material and quickly dismissed the alternative due to cost limitations and the presence of oysters at two previously identified beneficial use sites. The Service is not aware of the Corps previously identified beneficial use sites mentioned in the DMMP and welcomes the opportunity to revisit this issue again in hopes of using the material beneficially. The presence of oysters should not be the determining factor for beneficial use projects. While oysters are a valuable coastal resource, the Service and other federal and state resource agencies would appreciate the opportunity to vet each potential beneficial use project.

Modeling

The Service was not provided with, reviewed, or analyzed any environmental impact modeling with regards to the 2016 GRR-EA. Should modeling be made available, the Service requests a minimum of 30 days to review and comment appropriately.

Fish and Wildlife Resources

The Freeport Harbor Channel is a highly industrialized area servicing the petro-chemical, fishing, commercial shipping industries, and the City of Freeport. Terrestrial wildlife better acclimated to more urban settings may be present in the upland areas. Highly mobile species such as coyotes *Canis latrans*, raccoons *Procyon lotor*, rabbits *Sylvilagus spp.*, opossums *Didelphis virginiana*, and rodents *Rodentia spp.* may be found year round in the project area. Avian species may be found flying or foraging within the immediate project area; however, the area lacks any suitable nesting, breeding, sheltering, and exposed tidal flat habitats that support many species of shorebirds commonly seen along the Texas coast throughout the year. The Service does not anticipate any negative impacts to terrestrial or avian wildlife during the course of the project if the Corps incorporates best management practices into their construction strategies. Best management practices include avoiding contact with any wildlife species, daily

trash removal, designating a slower transportation speeds within the project area for both land and water, and educating construction staff about the potential for wildlife species within the project area.

Various estuarine fish species may be present during construction in the FHC and are well documented in the *Final Freeport Harbor Channel Improvement Project, Brazoria County: Environmental Impact Study* (2012). We expect that fish may be temporarily disturbed by the noise and vibrations of construction equipment within the channel project area; however, because fish are easily mobile, they can quickly move out of the impact area to other portions of the Freeport Harbor Channel or Gulf Intercoastal Water Way.

Threatened and Endangered Species

The Service recommends the Corps conduct a review for threatened and endangered species two years prior to construction. In order to obtain information regarding fish and wildlife resources concerning a specific project or project area, we recommend that the Corps first utilize the Service developed Information, Planning, and Conservation (IPaC) System. The IPaC system is designed for easy, public access to information about the natural resources for which the Service has trust or regulatory responsibility. Examples include Threatened and Endangered species, migratory birds, National Refuge lands, and NWI Wetlands. One of the primary goals of the IPaC system is to provide this information in a manner that assists people in planning their activities within the context of natural resource conservation. The IPaC system also assists people through the various regulatory consultation, permitting and approval processes administered by the Fish and Wildlife Service, helping achieve more effective and efficient results for both the project proponents and natural resources. The IPaC system can be found at the following website address: <http://ecos.fws.gov/ipac/> . This website details the steps necessary to begin the Section 7 consultation process under the Act should the Corps choose to move forward with this evaluation.

Impact Analysis

The Service has reviewed all Corps supplied documents and Service files relevant to the widening of the Freeport Harbor Channel, bend easing, and removal of the notch at the Upper Turning Basin. Project construction and staging area will take place within current right-of-ways along the Freeport Harbor Channel. Due to the highly industrialized nature of this area, no suitable breeding, feeding, or sheltering habitat is located within the terrestrial land portions of the project area and therefore, no negative impacts to wildlife species are expected in the immediate project area. Review of Service and other federal and state natural resource agency publically available data suggest the aquatic environment within the immediate project area may support fish species of both commercial and recreation importance. Dredging and dredge material placement activities may result in exposure of fish to various stimuli that may result in positive, negative, or neutral behavioral response (ECORP, 2009). Germano and Cary (2005) believe the majority of fish behavioral effects from dredging activities are associated with the re-suspension of sediments and the resulting physical and chemical alterations within the water column. Migrating behaviors of fish can be disrupted when encountering dredging activity or localized dredge plumes; however, most migration patterns return to normal soon after. While

the majority of the construction will occur in the lower portions of the Freeport Harbor Channel, we believe any migratory or resident fish species will quickly move away from any dredging activities and will not be harmed. Once construction is complete within the channel, we expect fish to once again occupy this area.

Avian species frequent Texas coastal shorelines including the greater project area. Mueller and Glass (1988) documented the disturbance role of petroleum development activities in relation to nesting bird colonies. Others document complete abandonment of bird colonies due to human disturbance (Allen 1938, Majic & Mikuska 1970, Burger 1981, Safina & Burger, 1983). While there are no active colony locations within the immediate project area, the Service does acknowledge that any dredging or disposal operations could pose a potential harm to birds. As part of best management practices to be incorporated into the construction activities, the Corps should create awareness for commonly seen bird species, directing construction staff to yield to avian species should they appear in the immediate project area, removal of trash that may undesirably attract avian and mammal species to the construction site, and slowing speeds within the work area to protect slow moving birds. The Federal Register (United States Federal Government, 2013) documents all birds protected under the Migratory Bird Treaty Act of 1918 (MBTA). The MBTA prohibits the take, possession, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit.

Due to the transient nature of fish and wildlife more commonly found in the immediate project area and the extensive shipping activities, it does not appear that the dredging activities outlined in the GRR-EA will have a noticeable long-term negative impact on any fish or wildlife species if best management practices are implemented. Because the dredging impacts will remain the same for all alternatives and no noticeable long-term impacts to fish and wildlife is anticipated, the Service does not support one alternative over another.

However, as an alternative to the proposed dredged material disposal plan by the Corps (2016) the Service recommends the Corps adopt a policy or standard operating procedure aimed at using 75% of the dredge material beneficially. The Corps has supported numerous research projects aimed at identifying uses for dredge material in lieu of costly upland placement areas and boasts several projects where successful placement has restored or replaced lost wetland habitat and function. However the Corps fall short in beneficial use of dredge material when only 11 % (1.64 mcy) of the 14.58 mcy dredged in FY 15 were used beneficially (Frabrotta, 2016). We strongly urge the Corps to develop an adaptive management plan that identifies markets for commercial and other end users of dredge material products. Developing costly upland placement areas assures that sediment removed during initial construction and subsequent maintenance phases are permanently removed from the system ultimately starving local marsh habitats. Supporting local marsh habitats through beneficial use, ensures that economic and environmental benefits will be available to all those that rely on the Texas coast for many years.

Coastal marsh habitats play an integral part of the life cycle of many commercially and recreationally important species of fish and wildlife. While no coastal marsh habitat is located within the immediate project area, there are thousands of acres of marsh lining the Gulf Intercoastal Waterway most of which are in declining conditions. Marsh habitat deteriorates when the supply of sediment is interrupted, water levels are increased, and subsidence occurs from increased periods of inundation, inhibiting plant growth and resulting in the deterioration of the marsh. Artificially supplying sediments to compensate for declining sedimentation or reestablishing natural elevation levels has the potential to help restore damaged marshes as well as provide a beneficial use of dredged material (Ray, 2007).

Robert Randall (2000) reports thin layer placement of dredged material as a suitable alternative to upland confined placement and coarsely identified coastal marsh habitat near the Freeport Harbor Channel benefiting from thin layer placement. Thin layer placement of dredged material is accomplished by spraying a slurry mix of dredge material and water through a high pressure hose system (often the slurry will reach up to 200 feet from the barge) and spraying to depths between two and six inches across the landscape depending on the habitat needs. In his report, Randall (2000) further identified marsh habitat in Big Boggy and San Bernard National Wildlife Refuges that may benefit from thin layer placement. The Service is available to assist in identifying marsh areas in need of thin layer placement within its own boundaries, and is willing to work with partners to bring state and privately owned properties in need of material to the project.

The construction of bird islands using new work dredged material is well documented but it was not until the 1970s that the importance of this dredged material to nesting waterbirds was realized (Golder, Allen, Cameron, & Wilder, 2008). Construction of a bird island with new work and maintenance material from this and subsequent projects would positively contribute to the coastal colonial waterbird populations and may provide valuable habitat for several bird species that remain a focus of the Service and other governmental and non-governmental natural resource agencies. These islands provide a valuable resource for not only nesting colonial waterbird populations but ultimately increase opportunities for nature-tourism and anglers equating to additional revenue for coastal businesses in this portion of the coast.

While construction of a bird island within the Freeport Harbor Channel would not be productive for waterbirds or the shipping communities at large, the Service would like to see the Corps initiate a bird island construction project within one of the nearby bays using material from this project. The Service is available to assist in identifying island placement, final design, and management oversight.

Mitigation

The Corps is not proposing mitigation for the proposed Freeport Harbor Channel improvements. The Service concurs with the Corps mitigation determination due to the reduced footprint size, the extensive industrial and commercial shipping facilities present, and the lack of suitable foraging, nesting, and breeding habitats within the immediate project area. While Essential Fish Habitat (EFH) will be impacted within the Freeport Harbor Channel, the Service recommends

that the Corps coordinate with National Marine Fisheries Service (NMFS) to assess these impacts and develop appropriate mitigation measures should they be deemed necessary.

Mitigation for the GRR has been altered such that PA9 will not be constructed. All new work material from the Freeport Harbor Channel Improvement Projects alternatives will be placed into upland confinement within PA1. Should other features of the project previously considered under the Service's earlier CAR (such as deepening of the entire channel) occur, the Corps expects the material will be placed into what is identified as PA8 (not yet constructed). As a result of this modification, wetland impacts are greatly reduced within the project footprint and are not expected to exceed 1.0 AAHU. As a result, the Corps plans to relocate the mitigation area to just south of what will be PA8 and will be further described in the Corps' final FRR-EA report.

Final Recommendations

The Service does not object to the Corps providing greater accessibility for shipping traffic to access the Freeport Harbor Channel provided the following fish and wildlife recommendations are incorporated into future project planning and implementation:

1. The Service urges the Corps to adopt a policy/standard operating procedure to use at least 75% of maintenance dredge and new work material responsibly over the 50-year time period of this federal project. As such, we recommend the Corps reevaluate the dredged material management plan to include beneficial use opportunities in lieu of sending the material offshore and to confined upland disposal sites. Additionally, we urge the Corps to evaluate transporting new work and maintenance material to areas outside of the typical 6-mile pump distance to other areas along the Gulf Inter-coastal Waterway (GIWW) as cost alternatives to Placement Area (PA) construction and levee rising. This material is needed to combat changes in water levels, erosion, and subsidence in most marsh habitats found along the entire GIWW.
2. Work with resource agencies to develop suitable plans and construct a 2 to 12-acre colonial waterbird nesting island, approximately 8ft above mean high water or flood stage and at least one half mile (preferably one mile) offshore in a nearby bay. The island should include a sloping sand beach, preferably protected by a rock breakwater structure similar in design to Evia Island in Galveston Bay. The Service can assist with location, final design, and management of the new island.
3. The Corps should work with Freeport Harbor Channel tenants, operators, and the natural resource community to beneficially use dredged material in lieu of upland and offshore placement.
4. The Service does not anticipate any negative impacts to terrestrial or avian wildlife during the course of the dredging and staging portions of the project if the Corps incorporates best management practices into their construction strategies. These best management practices should include: avoiding contact

with any wildlife species; removal of trash daily; incorporate slower transportation speeds within the project area (on land and in the water); and educating construction staff about the presence of wildlife species within the project area.

5. The Corps initiate coordination with NMFS regarding EFH impacts and mitigation issues within the project area.
6. All new work and maintenance material should be thoroughly tested for contaminants using the standards outlined in the Environmental Protection Agency's Inland Testing and Ocean Dumping Manuals prior to being used in any beneficial use projects, placement in upland confinement, or offshore disposal sites. Should data suggest toxic levels of contaminants are present, the Service recommends disposal of the material within an approved landfill site.
7. While no wetland impacts are anticipated within the current scope of the project, the Service recommends the Corps fully compensate for any unavoidable losses of wetland habitats should the scope of the project change during the final design phase.
8. If the proposed project features change, the status of species change, or the project is not implemented within three years of the date of our Endangered Species Act (Act) coordination, we recommend that the Corps reevaluate the project's effects and species status and initiate any necessary consultation procedures pursuant to Section 7 of the Act.

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Appendix I

CAR Recommendations and USACE Responses

USFWS CAR Recommendations	Adopt, Partial Adopt or Non-Adopt	USACE Response
<p>1. Adopt a standard policy to use 75% of maintenance and new work material beneficially, and for this study, reevaluate the DMMP to include beneficial use.</p>	<p>Non-adopt</p>	<p>USFWS recommends that USACE adopt a standard policy to use 75% of maintenance and new work material beneficially, and to include the beneficial use of the dredge material in the TSP. Adoption of a standard policy regarding the beneficial use of new work and maintenance material is beyond the purview of this study. However, in accordance with existing policy and guidance, USACE has reviewed the potential for beneficial use of the limited quantity of new work material that will be generated by construction of the GRR features, and the additional maintenance material associated with these features. The amount of additional maintenance material associated with the GRR features is negligible; therefore, the BU analysis presented here is focused on the limited amount of new work material from the GRR features (1,730,000 cubic yards – primarily soft sandy clay). The GRR features would be constructed prior to the authorized deepening of the navigation channel; consequently, the analysis is limited to the quantity associated with the GRR features. Based on review of aerial photography, the nearest potential marsh restoration area is a small degraded marsh area in the southern Oyster Creek watershed, adjacent to the GIWW and just east of the project area. The pumping distance to this area from the Bend Easing feature is about 3.1 miles. The Bend Easing is the GRR feature closest to the BU area and contains the largest amount of new work material. It is possible that approximately 8 acres of marsh could be constructed with the available material. The pumping distance from the Bend Easing feature to PA 1 (the upland, confined placement area identified for material from this area) is about 2.3 miles. The PAs or BU areas selected in the DMMP are those which provide the needed</p>

		capacity at the lowest cost per cubic yard. Based solely on pumping distance, the least-cost disposal option would be PA 1 since the closest potential BU site is about 30 percent farther than the proposed upland site (PA 1). The National Economic Development (NED) placement area selection is based upon the least-cost option. However, the BU plan could be recommended if the non-Federal sponsor elects to fund the difference (increase) in placement cost.
2. Develop and construct a 2-12 acre bird island, located at least 0.5 mile offshore in a nearby bay.	Non-Adopt	Construction of a bird island as part of this project could only be accomplished as mitigation as the study authorization does not include ecosystem restoration. The USACE environmental impact analysis has determined that the project would result in no wildlife impacts requiring mitigation, and USFWS has concurred in this determination. Thus, construction of a bird island in conjunction with the TSP is not required nor is it authorized.
3. Work with Freeport Harbor Channel tenants and operators to beneficially use dredged material.	Partial Adopt	USACE has no direct relationship with the Port Freeport tenants or operators. USACE will encourage Port Freeport to work with tenants and operators to beneficially use dredged material where feasible.
4. Adopt specific best management practices to avoid inadvertent impacts to wildlife during construction (i.e. avoiding contact; daily trash removal; slower vessel speeds within the harbor, and education of construction staff on presence of wildlife in the project area).	Adopt	USACE will incorporate BMPs into construction strategies contracts as described in Appendix B, Section 5.
5. Initiate coordination with NMFS regarding EFH impacts and mitigation in the project area.	Adopt	Due to negligible anticipated impacts, USACE will initiate EFH coordination with NMFS with release of the DIFR-EIS.
6. Test all new work and maintenance material for contaminants; should toxic levels of contaminants be	Partial Adopt	Testing of Dow Thumb bench sediments has found no significant contamination and HTRW assessments have determined that the GRR features are unlikely to contain contaminated sediments; therefore, further sediment testing of

<p>identified, dispose material in an approved landfill site.</p>		<p>dredged material is not currently planned. Should contaminated materials be identified during construction, those materials would be placed in an approved landfill site in accordance with applicable regulations. Maintenance material is tested for contaminants, and results are coordinated with EPA.</p>
<p>7. While no wetland impacts are anticipated, the USFWS recommends that USACE fully compensate for any unavoidable losses should the project scope change in the final design phase.</p>	<p>Adopt</p>	<p>If the proposed project design changes such that impacts to wetlands could occur, USACE would initiate coordination and provide mitigation as appropriate.</p>
<p>8. Reevaluate project effects and initiate consultation pursuant to Section 7 of the ESA if the proposed project design changes during the final design phase or if status of species change within the next three years.</p>	<p>Adopt</p>	<p>If the proposed project design changes or the status of protected species change within three years of the CAR (October 31, 2016), USACE would reevaluate the project's effects to protected species pursuant to Section 7 of the ESA and initiate consultation as needed.</p>