

## **Appendix I**

# **Compliance with the Texas and Louisiana Coastal Management Programs**

## **Appendix I1**

# **Compliance with Texas Coastal Management Program**

## Appendix I1

### **Compliance with Goals and Policies – Section 501.25(a)–(f) Dredging and Dredged Material Disposal and Placement Sabine-Neches Waterway Channel Improvement Project Environmental Impact Statement Texas Coastal Zone Management Program Consistency Determination**

#### **INTRODUCTION**

The U.S. Army Corps of Engineers (USACE), Galveston District proposes to modify the navigation channels servicing the Ports of Beaumont, Port Neches, Port Arthur, and Orange, Texas, in the interests of commercial navigation. These channels are collectively referred to as the Sabine-Neches Waterway (SNWW), and the project to modify the SNWW is referred to as the Channel Improvement Project (CIP). The purpose of the CIP is to improve the transportation efficiency of the SNWW's deep-draft navigation system, while protecting the quality of the area's coastal and estuarine resources.

The existing 40-foot inshore SNWW project is a federally authorized and maintained waterway located in Jefferson and Orange counties, Texas, and Cameron and Calcasieu parishes, Louisiana. The existing SNWW consists of the following channel reaches, as listed from offshore to inshore: (1) Sabine Bank Channel; (2) Sabine Pass Outer Bar Channel; (3) Sabine Pass Jetty Channel; (4) Sabine Pass Channel; (5) Port Arthur Channel; (6) Sabine-Neches Channel; and (7) Neches River Channel.

The authorized depth of the channel in the Preferred Alternative would be deepened by 8 feet along the entire existing channel and the offshore Entrance Channel would extend 13.2 miles farther into the Gulf of Mexico (Gulf). The Sabine Pass Jetty Channel, Sabine Pass Channel, Port Arthur and Sabine-Neches canals, and the Neches River Channel would be deepened from 40 feet to 48 feet. The authorized depth of the existing offshore Entrance Channel (Sabine Pass Outer Bar Channel and Sabine Bank Channel) is currently 42 feet; the additional depth is needed to accommodate fluctuations in offshore surface water elevation. These channels and the proposed Sabine Bank Extension Channel would be deepened from 42 to 50 feet. This would increase the SNWW from 64 miles to approximately 77 miles in length. No modifications to the existing Sabine Pass Jetties would be required as part of the Preferred Alternative.

The Sabine Pass Jetty Channel and the majority of the inshore channels (Sabine Pass Channel, Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel) would remain at their existing widths. With the exception of wider sections at anchorages or channel intersections, these channels transition from 500 feet wide between the jetties to 400 feet wide upstream of the Martin Luther King Bridge on the Sabine-Neches Canal and Neches River Channel. The Taylor Bayou Channels and Basins would also be widened and deepened to 48 foot. Although the Sabine-Neches Canal and Neches River Channel would

---

not be widened, navigation efficiency would be improved with short stretches of selective widening and bend easings in both reaches, and the addition or enlargement of one anchorage and two turning/anchorage basins on the Neches River Channel. Up to five additional anchorage/turning basins could also be added on the Neches River.

Environmental affects addressed in the SNWW CIP Final Environmental Impact Statement (FEIS), particularly pertaining to coastal resources, have been analyzed in a large surrounding area that includes Sabine Lake and adjacent marshes in Texas and Louisiana, the Neches River channel up to the new Neches River Saltwater Barrier, the Sabine River Channel to the Sabine Island Wildlife Management Area (WMA), the Gulf Intracoastal Waterway (GIWW) west to Star Bayou, the GIWW east to Gum Cove Ridge, the Gulf shoreline extending to 10 miles either side of Sabine Pass, and offshore in the Gulf to 13.2 miles beyond the end of the current navigation channel.

The SNWW study area contains a high concentration of significant coastal wetlands. The USACE, in coordination with an Interagency Coordination Team (ICT) comprised of numerous State and Federal agencies, including the Texas General Land Office, developed a dredged material management plan (DMMP) that uses dredged material from the proposed SNWW CIP in an environmentally acceptable and economically practical manner. The ICT identified, within the proposed study area, 109,175 acres (171 square miles) in Texas and 197,530 acres (309 square miles) in Louisiana of coastal marsh, bottomland hardwood, and cypress-tupelo swamp habitats.

No net loss of coastal wetlands was a specific goal of the SNWW CIP ICT and alternatives evaluation. Several components of the DMMP and mitigation plan involve restoration, protection, and enhancement of coastal wetlands. Beneficial Use (BU) features of the DMMP that would offset project-induced impacts within Texas, as well as mitigation features that would offset project-induced impacts in Louisiana, are described further below.

Neches River BU Feature – Rose City would restore 345 acres of fresh marsh, 72 acres of shallow water, and nourish 151 acres of existing marsh. New Work material (approximately 2.1 million cubic yards) would be used to restore a 225-acre marsh, including the construction of hydraulic containment levees and higher-elevation features. Maintenance material (approximately 540,000 cubic yards) from the first maintenance cycle would be used to restore an additional 120 acres of marsh. Topographic relief would be created by varying the final elevation of material placement, and each elevation would subsequently be planted with appropriate native flora. Tidal creek channels would be constructed in the marsh creation area after the dredged material has settled.

Neches River BU Feature – Bessie Heights East would restore 679 of brackish and 1,190 acres of intermediate marsh, 660 acres of shallow-water habitat, and nourish 651 acres of existing marsh. The Bessie Heights East site is located within the much larger Bessie Heights Marsh. This was a natural emergent marsh that over time has seen the majority of its marsh acreage convert to open water. The site is located on Texas Parks and Wildlife Department (TPWD) property and privately owned land. Bessie

---

Heights East totals 3,180 acres. Topographic relief would be created by varying the final elevation of material placement, and each elevation would subsequently be planted with appropriate native flora. Tidal creek channels would be constructed in the marsh creation area after the dredged material has settled.

Neches River BU Feature – Old River Cove is located north of the Neches River on property owned by TPWD and would involve and restoration of 639 acres of brackish marsh, enhancement of 139 acres of shallow water habitat, and nourishment of 432 acres of existing marsh, as suspended fine-grained sediments disperse beyond restored emergent marsh areas. Topographic relief would be created by varying the final elevation of material placement, and each elevation would subsequently be planted with appropriate native flora.

Gulf Shore BU Feature (Texas and Louisiana Points – TX 8-11 and LA 5-2/6-2) are located on the east and west sides of the Sabine Pass jetties. Each area begins approximately 0.5 mile from the respective jetty and extends about 3.5 miles away. The land on the Texas side is part of the Texas Point National Wildlife Refuge (NWR), while the land on the Louisiana side is privately owned. The conceptual plan calls for placing maintenance material at the shoreline in an unconfined manner. Placement would alternate between the Louisiana and Texas shorelines with each complete maintenance cycle, so that each side receives material every 6 years for the 50-year period of analysis, or eight placement episodes. The plan anticipates that much of the material would be redistributed into the littoral system.

All CIP impacts in Texas would be minimized and offset by beneficially using dredged material as described in the DMMP and therefore no mitigation is required; unavoidable impacts of the SNWW CIP remain only in Louisiana. Therefore, all of the mitigation measures would be located in Louisiana. The mitigation plan for Louisiana consists of restoring five degraded marsh areas east of Sabine Lake near Willow and Black bayous, Louisiana. The mitigation efforts would compensate for the Preferred Alternative's salinity increase and associated losses in marsh and productivity by marsh creation activities that would influence a total of 8,095 acres of marshes in the Willow and Black Bayou watersheds. The plan would restore 2,783 acres of emergent marsh in existing open-water areas within the marsh, improve 957 acres of shallow-water habitat by creating shallower, smaller ponds and channels within the restored marsh, and stabilize and nourish 4,355 acres of existing marsh located in and around the marsh restoration zone.

## **IMPACTS ON COASTAL NATURAL RESOURCE AREAS**

Several of the Coastal Natural Resource Areas (CNRAs) listed in 31 TAC §501.3 are found reasonably close to the areas discussed in the FEIS. A short description of each CNRA near the project and of attempts to minimize or avoid potential impacts is provided below.

### **Waters of the Open Gulf of Mexico**

New work and future dredged material generated from within the Sabine Bank Channel, Sabine Pass Outer Bar Channel, and the Sabine Pass Jetty Channel would be placed in four open Gulf existing Ocean,

---

Dredged Material Disposal Sites (ODMDSs), where only two occur in Texas waters (i.e., portion of Placement Area [PA] 3 and all of PA 4) and were designated in 1987 (52 FR 34218). All other project ODMDSs occur beyond Texas waters. The areas within the existing maintenance ODMDSs' footprint (i.e., portion of PA 3 and all of PA 4) would be disturbed during construction and intermittently for the life of the project, as it has since designation in 1987. Impacts to these areas are minimized by placement of dredged material into either historically used and/or dispersive offshore PAs. The overall footprint of these offshore PAs would be minimized by mounding the dredged material vertically to the maximum extent practical. These offshore PAs are dispersive by nature and would likely revert to the in situ topography prior to the next maintenance dredged material disposal sequence.

### **Waters Under Tidal Influence**

The entire project is located in a tidally influenced region. Dredging and placement activities represent a minimal impact because the localized and temporary release of suspended solids is minimized by refraining from open-bay placement and using existing, confined upland PAs. Additionally, beneficial use of dredged material would restore subsided, tidal wetlands.

### **Submerged Lands**

The areas within the channel alignment and Neches River BU Feature (restoration areas located at Rose City East [TX 3-1E], Bessie Heights East [TX 5-2], and Old River Cove [TX 6-1A]) are characterized as submerged lands. These submerged lands are PAs for dredged material generated from the Neches River reach. Dredged material placement within the Neches River BU Feature would result in a net increase in several CNRAs from restoration and enhancement efforts, as noted below. The DMMP (Appendix D) and Chapter 5 of the FEIS provide more information regarding project impacts and coastal wetlands.

### **Coastal Wetlands**

No net loss of coastal wetlands was a specific goal of the SNWW CIP ICT and alternatives evaluation. Several components of the DMMP and mitigation plan for Louisiana involve restoration, protection, and enhancement of coastal wetlands. All impacts within Texas are offset by the DMMP and BU features. The Neches River BU Feature would restore 2,853 acres of emergent marsh, nourish 1,234 acres of existing marsh, and improve 871 acres of shallow-water habitat. Impacts within Louisiana would be mitigated by restoring five degraded marsh areas east of Sabine Lake near Willow and Black bayous, Louisiana. This mitigation measure would restore 2,783 acres of emergent marsh in existing open-water areas within the marsh, improve 957 acres of shallow-water habitat by creating shallower, smaller ponds and channels within the restored marsh, and stabilize and nourish 4,355 acres of existing, adjacent marsh.

---

## **Submerged Aquatic Vegetation**

The Preferred Alternative is located near areas not characterized as having large expanses of seagrasses. There would be negligible, if any, direct or indirect adverse impacts to seagrass beds as result of the Preferred Alternative.

## **Tidal Sand and Mudflats**

The only potential impacts to tidal sand would be from the nourishment of the shoreline at both Texas and Louisiana Points to provide shoreline protection; this effort would be considered a long-term positive effect as these areas are eroding. Similarly, mudflats may occur within subsided marshes receiving material. Several subsided marshes would receive material for restoration and enhancement, as outlined in the DMMP (Appendix D) and Chapter 5 of the FEIS.

## **Oyster Reefs**

The majority of oyster reefs in the study area are located in the southern part of Sabine lake near Blue Buck Point, in Sabine Pass, and in Keith Lake. Oysters are not commercially harvested from Sabine Lake. Sabine Lake has not been classified or delineated by Texas and, therefore, the Texas Department of State Health Services (TDSHS) has prohibited the harvesting of molluscan shellfish from this system since the late 1970s. Louisiana has designated Sabine Lake as a “Public Oyster Area.” Commercial harvesting is prohibited and public harvesting methods are restricted to tonging; however, no harvesting is currently allowed due to water quality issues. There are no oyster reefs identified within the Preferred Alternative footprint. While no impacts to extant live oyster reefs are likely because salinities are too fresh for oyster development, prior to construction of the access channel and borrow trench, a full water-bottom assessment would be conducted by the USACE within Louisiana in accordance with Louisiana Department of Wildlife and Fisheries (LDWF) survey standards. This survey would be necessary in order for LDWF to consider a waiver of compensation for impacts to the water bottoms of the Sabine Lake public oyster area.

## **Hard-substrate Reefs**

There are no naturally occurring hard-substrate formations in the vicinity of the project. The closest serpulid worm reefs within Texas waters are located several hundred miles south in the Laguna Madre and Baffin Bay.

## **Coastal Barriers**

The coastal barrier downdrift of Sabine Pass primarily consists of state parks and NWR areas, which are undeveloped with marshes in the backshore and with narrow beaches and overwash terrace on the foreshore. The DMMP includes the placement of dredged material for beneficial use (Gulf Shoreline BU Feature) immediately downdrift of Sabine Pass on Texas and Louisiana Points to provide for shore

---

protection and marsh creation. Placement and placement operations are not expected to have any adverse impacts to the coastal barriers. Shoreline nourishment would yield ecological benefits to coastal barriers.

### **Coastal Shore Areas**

These resource areas function as buffers, protecting upland habitats from erosion and storm damage and adjacent marshes and waterways from water quality degradation. This type of area is located west of Sabine Pass, and protect against wetlands located behind these shores from McFaddin NWR, Texas Point NWR, and Sea Rim State Park. The Texas Point NWR coastal shore would be improved by shore nourishment; therefore, the Preferred Alternative would have a beneficial effect on the Texas Point coastal shore, and would not have adverse impacts to other coastal shore areas as a result of dredging and dredged material operations.

### **Gulf Beaches**

Sabine Pass forms the southern entrance of the Sabine-Neches Ship Channel from the Gulf into the area studied. In this area, on the Texas side (or west side) of Sabine Pass, is the Texas Point NWR. Farther west along the Gulf of Mexico coastline is Sea Rim State Park and McFadden NWR. This area is characterized by (mostly) undeveloped marshland and beaches, with numerous small lakes and wetland areas. It is predicted approximately 3,100 acres of shoreline west of Sabine Pass would erode over the next 50 years, under future conditions. However, a DMMP feature of the Preferred Alternative would use maintenance dredged material generated from the Sabine Pass Channel to nourish Texas and Louisiana Points.

### **Critical Dune Areas**

The Gulf beaches on the Texas side of the study area include dune systems at McFaddin NWR and Sea Rim State Park. Adverse impacts to the dune complexes are not expected to occur as a result of dredging and dredged material placement operations. Gulf Shoreline BU Features would not result in placement of material on critical dune areas.

### **Special Hazard Areas**

Special hazard areas are areas designated by the administrator of the Federal Insurance Administration under the National Flood Insurance Act as having special flood, mudslide, and/or flood-related erosion hazards. The SNWW and Sabine Lake area are covered under the Flood Insurance Studies for Jefferson and Orange counties in Texas and Cameron and Calcasieu parishes in Louisiana. The land along the SNWW within the area studied is predominantly located in, or adjacent to, the 100-year floodplain. Except from improvements caused by shore nourishment and shoreline protection measures in the DMMP, project dredging and placement activities do not affect these low-lying areas because dredging is within and adjacent to the existing channel and disposal is within contained PAs and sites in open waters.

---

## **Critical Erosion Areas**

These areas are those Gulf and bay shorelines that are undergoing erosion and are designated by the Commissioner of the General Land Office under Texas Natural Resources Code, §33.601(b). The shoreline from downdrift of Sabine Pass, including the Texas Point NWR and Sea Rim State Park, are classified as critical erosion areas. Erosion in these areas threatens wetlands at McFaddin NWR, Texas Point NWR, and Sea Rim State Park. The Texas Point NWR shoreline would be nourished by the Gulf Shoreline BU Feature; therefore, the Preferred Alternative would have a beneficial effect for critical erosion areas on Texas Point.

## **Coastal Historic Areas**

Sites listed or eligible for listing in the National Register of Historic Places or for designation as State Archeological Landmarks are present in the project area. Compliance with the Texas Coastal Management Program (TCMP) regarding coastal historic areas is accomplished through procedures established by Section 106 of the National Historic Preservation Act of 1965, as amended. These coastal historic sites, as well as noncoastal historic sites, are discussed in Section 4.14 of the FEIS. Coordination with the Texas Historic Commission is ongoing, but it is expected that impacts to significant sites would be avoided.

While no specific impacts to historic resources have been identified at this time, the Preferred Alternative has the potential to adversely affect significant historic properties because numerous prehistoric and historic sites, structures, and shipwrecks are present in the project vicinity. A Historic Properties Programmatic Agreement has been negotiated and executed with the Texas and Louisiana State Historic Preservation Officers to ensure that significant historic properties are identified and mitigation, if necessary, is completed prior to construction. It is attached to the FEIS as Appendix H.

## **Coastal Preserves**

This CNRA includes state parks and NWRs. There are several preserves within the vicinity of the coastal shoreline that include the Texas Point NWR, Sea Rim State Park, McFadden NWR, J.D. Murphree WMA, Sabine Pass Battleground State Park and Historic Site, Lower Neches WMA (Nelda Stark Unit), and Lower Neches WMA (Old River Unit). Direct placement of dredged material would occur within Texas Point NWR, Sabine NWR, and the Lower Neches WMA (Nelda Stark and Old River units) for restoration, enhancement, and creation of coastal wetlands in specific BU features and mitigation areas. Appendix D and Chapter 5 of the FEIS provides more information about project impacts and coastal preserves.

## **COMPLIANCE WITH GOALS AND POLICIES**

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

- 
- §501.25 – Dredging and Dredged Material Disposal and Placement
  - §501.15 – Policy for Major Actions

### **Compliance with §501.15 – Policy for Major Actions**

This project involves action subject to §506.12 and constitutes a major action. Therefore, a Federal Environmental Impact Statement (EIS) is required under the National Environmental Policy Act (NEPA), 42 USC, §4321, et seq. Both State and Federal agencies involved with the SNWW CIP have met and coordinated on the identification and mitigation of project impacts and beneficial uses of dredged material. The purpose of this appendix to the FEIS is to demonstrate that the Preferred Alternative is consistent with the TCMP.

#### Section 501.25 Dredging and Dredged Material Disposal and Placement

- (a) *Dredging and the disposal and placement of dredged material shall avoid and otherwise minimize adverse effects to coastal waters, submerged lands, critical areas, coastal shore areas, and Gulf beaches to the greatest extent practicable. The policies of this section are supplemental to any further restrictions or requirements relating to the beach access and use rights of the public. In implementing this section, cumulative and secondary adverse effects of dredging and the disposal and placement of dredged material and the unique characteristics of affected sites shall be considered.*

**Compliance: Dredged material would be placed on a variety of areas and would have some effects on coastal waters and submerged lands such as temporarily burying benthic organisms and increasing turbidity in the area. One beneficial use, shore nourishment, would result in temporary restrictions to specific shore areas. Habitat losses and gains would result from measures outlined in the Wetland Value Assessment (WVA) (Appendix C to the FEIS). In some instances, impacts include loss of submerged lands. Although these measures would result in reducing the amount of submerged lands, fresh, intermediate, and brackish marsh would be created, restored, or enhanced, to mitigate this loss. In other instances, losses in coastal waters occur due to shore nourishment, but would result in providing shoreline protection at Texas and Louisiana Points and creating a new saline marsh along a 3-mile stretch of Gulf coastline. Other actions include placement of new work and maintenance dredged material in two ODMDs occurring within Texas waters (i.e., portion of PA 3 and PA 4); other ODMDs are associated with the Preferred Alternative’s DMMP but occur beyond Texas waters. These ODMDs are naturally dispersive; therefore, bottom impacts are expected to be temporary. Project features and measures as described in the WVA and DMMP are the result of coordination among agency personnel and other interested parties. All project induced impacts within Texas would be offset by the BU features and as described in the DMMP.**

- 
- (1) *Dredging and dredged material disposal and placement shall not cause or contribute, after consideration of dilution and dispersion, to violation of any applicable surface water quality standards established under §501.21 of this title.*

**Compliance: For all PAs, adequate dilution and dispersion occurs so that applicable surface water standards are not violated (FEIS Sections 4.4 and 4.6).**

- (2) *Except as otherwise provided in paragraph (4) of this subsection, adverse effects on critical areas from dredging and dredged material disposal or placement shall be avoided and otherwise minimized, and appropriate and practicable compensatory mitigation shall be required, in accordance with §501.23 of this title.*

**Compliance: CNRAs would be impacted by the Preferred Alternative, as discussed above; however, DMMP measures consisting of beneficially used dredged material would result in creation, enhancement, and restoration of critical areas. All impacts within Texas would be offset by the DMMP and BU features. For example, in the Neches River BU area, DMMP measures would have a direct impact on submerged lands or open water, but would create 2,853 acres of emergent marsh, nourish 1,234 acres of existing marsh, and improve 871 acres of shallow-water habitat. Additionally, protection of the shorelines and creation, restoration, and enhancement of saline marshes would result from placement of dredged material on a 6-mile stretch of Gulf beach at Texas and Louisiana Points. The WVA (Appendix C) and sections 4.1, 4.2, and 5.0 of the FEIS discuss ecological impacts and benefits, modeling approaches, and mitigation.**

- (3) *Except as provided in paragraph (4) of this subsection, dredging and the disposal and placement of dredged material shall not be authorized if:*
- (A) *there is a practicable alternative that would have fewer adverse effects on coastal waters, submerged lands, critical areas, coastal shore areas, and Gulf beaches, so long as that alternative does not have other significant adverse effects;*

**Compliance: Channel construction and placement of new work and maintenance material have been designed to minimize adverse impacts to the environment. Placement of new work and maintenance material only in existing PAs was not an available option for this project due to the size and 50-year time frame. Sufficient upland sites are not available. The DMMP (Appendix D of the FEIS) provides a detailed description of all PAs and alternatives that were evaluated. The WVA (Appendix C of the FEIS) provides descriptions of the features that would offset all project-induced impacts within Texas.**

- (B) *all appropriate and practicable steps have not been taken to minimize adverse effects on coastal waters, submerged lands, critical areas, coastal shore areas, and Gulf beaches; or*

---

**Compliance:** All practicable steps (including use of confined upland PAs, existing PAs, selection of minimum channel size to meet the project needs, extensive beneficial uses, mitigation, and interagency coordination) have been taken to minimize adverse affects on these resources. For a discussion of all PAs that were evaluated, refer to the DMMP (Appendix D) and Chapter 2 of the FEIS. Associated minimization of adverse effects is described in the WVA (Appendix C) and Chapter 5 of the FEIS. All impacts within Texas would be offset by the BU features and as described in the DMMP.

(C) *Significant degradation of critical areas under §501.23(a)(7)(E) of this title would result.*

**Compliance:** Some critical areas would be affected by the project, as noted above. However, impacts to critical areas have been minimized to the greatest extent practicable, and net environmental benefits would result from the Preferred Alternative as discussed above. For a discussion of all PAs that were evaluated, refer to the DMMP (Appendix D) and Chapter 2 of the FEIS. Associated minimization of adverse effects is described in the WVA (Appendix C) and Chapter 5 of the FEIS. All impacts within Texas would be offset by the BU features as described in the DMMP.

(4) *A dredging or dredged material disposal or placement project that would be prohibited solely by application of paragraph (3) of this subsection may be allowed if it is determined to be of overriding importance to the public and national interest in light of economic impacts on navigation and maintenance of commercially navigable waterways.*

**Compliance:** Dredging and placement is not precluded by paragraph (3), as noted above.

(b) *Adverse effects from dredging and dredged material disposal and placement shall be minimized as required in subsection (a) of this section. Adverse effects can be minimized by employing the techniques in this subsection where appropriate and practicable.*

**Compliance:** Adverse effects of dredging and disposal, as described in the FEIS and associated DMMP, have been minimized as described under “Compliance” for paragraph (1) of this subsection. For a discussion of all PAs that were evaluated, refer to the DMMP (Appendix D) and Chapter 2 of the FEIS. Associated minimization of adverse effects is described in the WVA (Appendix C) and Chapter 5 of the FEIS. All impacts within Texas would be offset by the BU features as described in the DMMP.

(1) *Adverse effects from dredging and dredged material disposal and placement can be minimized by controlling the location and dimensions of the activity. Some of the ways to accomplish this include:*

(A) *locating and confining discharges to minimize smothering of organisms;*

- 
- (B) *locating and designing projects to avoid adverse disruption of water inundation patterns, water circulation, erosion and accretion processes, and other hydrodynamic processes;*
  - (C) *using existing or natural channels and basins instead of dredging new channels or basins, and discharging materials in areas that have been previously disturbed or used for disposal or placement of dredged material;*
  - (D) *limiting the dimensions of channels, basins, and disposal and placement sites to the minimum reasonably required to serve the project purpose, including allowing for reasonable overdredging of channels and basins, and taking into account the need for capacity to accommodate future expansion without causing additional adverse effects;*
  - (E) *discharging materials at sites where the substrate is composed of material similar to that being discharged;*
  - (F) *locating and designing discharges to minimize the extent of any plume and otherwise control dispersion of material; and*
  - (G) *avoiding the impoundment or drainage of critical areas.*

**Compliance:** PAs have been designed to minimize open-water impacts by using vertical storage of dredged material to create marshes or uplands or using existing and expanded upland confined placement, wherever practical. Changes in water circulation and salinity were modeled extensively, and mitigation and BU measures were conceptually designed based on modeling results. Mitigation within Louisiana and BU efforts were designed to improve or maintain ecological functions of the area studied. Erosion would be slowed by shore nourishment, a BU feature of the Preferred Alternative, in critically eroding areas along Texas and Louisiana Points. Channel morphology would change by deepening the navigation channels' existing footprint, by easing bends within the Sabine-Neches Canal, and by adding and/or modifying turning and anchorage basins within the Neches River reach and the Taylor Bayou subreach; however, the extent of improvements to the SNWW navigation features are limited by the net benefits derived as a result of the project, and by constraining the improvements to stay within the existing channel and basin boundaries as much as practicable. Maximum use of existing active and inactive PAs would be employed. Material would be beneficially used to provide shoreline protection and creation, enhancement, and restoration of marshes, both along the Gulf Coast and upstream within the SNWW system. Discharges would be confined with reinforced levees where applicable. Only appropriate material would be used for certain substrates and uses. No impoundment or draining of critical areas would occur as a result of the Preferred Alternative.

- (2) *Dredging and disposal and placement of material to be dredged shall comply with applicable standards for sediment toxicity. Adverse effects from constituents contained in materials*

---

*discharged can be minimized by treatment of or limitations on the material itself. Some ways to accomplish this include:*

- (A) disposal or placement of dredged material in a manner that maintains physiochemical conditions at discharge sites and limits or reduces the potency and availability of pollutants;*
- (B) limiting the solid, liquid, and gaseous components of material discharged;*
- (C) adding treatment substances to the discharged material; and*
- (D) adding chemical flocculants to enhance the deposition of suspended particulates in confined disposal areas.*

**Compliance: Sediments to be dredged from the SNWW have been tested for a variety of chemical parameters of concern. Samples yielded no cause for concern and sediments are safe for placement in the Gulf or beneficial use. A summary of these results is included in Section 3.4 of the FEIS.**

*(3) Adverse effects from dredging and dredged material disposal or placement can be minimized through control of the materials discharged. Some ways of accomplishing this include:*

- (A) use of containment levees and sediment basins designed, constructed, and maintained to resist breaches, erosion, slumping, or leaching;*
- (B) use of lined containment areas to reduce leaching where leaching of chemical constituents from the material is expected to be a problem;*
- (C) capping in-place contaminated material or, selectively discharging the most contaminated material first and then capping it with the remaining material;*
- (D) properly containing discharged material and maintaining discharge sites to prevent point and nonpoint pollution; and*
- (E) timing the discharge to minimize adverse effects from unusually high water flows, wind, wave, and tidal actions.*

**Compliance: Construction of reinforced containment levees would be used where necessary. PAs are confined with levees. Small, temporary levees may be created during marsh restoration efforts. Shore nourishment measures and placement in ODMDs may have some temporary and local impacts by increasing turbidity; however, material to be generated from construction activities has been tested and found not to contain harmful concentrations of pollutants. Future maintenance material is anticipated to mirror existing maintenance material, which also has been extensively**

---

tested and found to have no causes for concern (Section 3.4 of the FEIS). Discharges would not occur during conditions involving high water flows, waves, or tidal action.

- (4) *Adverse effects from dredging and dredged material disposal or placement can be minimized by controlling the manner in which material is dispersed. Some ways of accomplishing this include:*
- (A) *where environmentally desirable, distributing the material in a thin layer;*
  - (B) *orienting material to minimize undesirable obstruction of the water current or circulation patterns;*
  - (C) *using silt screens or other appropriate methods to confine suspended particulates or turbidity to a small area where settling or removal can occur;*
  - (D) *using currents and circulation patterns to mix, disperse, dilute, or otherwise control the discharge;*
  - (E) *minimizing turbidity by using a diffuser system or releasing material near the bottom;*
  - (F) *selecting sites or managing discharges to confine and minimize the release of suspended particulates and turbidity and maintain light penetration for organisms; and*
  - (G) *setting limits on the amount of material to be discharged per unit of time or volume of receiving waters.*

**Compliance: All of the sites minimize or avoid adverse dispersal effects to the greatest extent practicable and incorporated hydrodynamic and sedimentation modeling of the area of interest. Material to be used as shore nourishment would be hydraulically discharged into the nearshore zone, with some material expected to flow over the existing marsh while the remainder flows into the nearshore waters. Sequenced discharge points would be used to disperse material across the ODMDSs. There are no sediments of concern.**

- (5) *Adverse effects from dredging and dredged material disposal or placement operations can be minimized by adapting technology to the needs of each site. Some ways of accomplishing this include:*
- (A) *using appropriate equipment, machinery, and operating techniques for access to sites and transport of material, including those designed to reduce damage to critical areas;*
  - (B) *having personnel on site adequately trained in avoidance and minimization techniques and requirements; and*

- 
- (C) *designing temporary and permanent access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain circulation and faunal movement.*

**Compliance: Where applicable, all sites in this project would meet this requirement; contracts would be written to ensure compliance with all standards.**

- (6) *Adverse effects on plant and animal populations from dredging and dredged material disposal or placement can be minimized by:*
- (A) *avoiding changes in water current and circulation patterns that would interfere with the movement of animals;*
  - (B) *selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species that have a competitive edge ecologically over indigenous plants or animals;*
  - (C) *avoiding sites having unique habitat or other value, including habitat of endangered species;*
  - (D) *using planning and construction practices to institute habitat development and restoration to produce a new or modified environmental state of higher ecological value by displacement of some or all of the existing environmental characteristics;*
  - (E) *using techniques that have been demonstrated to be effective in circumstances similar to those under consideration whenever possible and, when proposed development and restoration techniques have not yet advanced to the pilot demonstration stage, initiating their use on a small scale to allow corrective action if unanticipated adverse effects occur;*
  - (F) *timing dredging and dredged material disposal or placement activities to avoid spawning or migration seasons and other biologically critical time periods; and*
  - (G) *avoiding the destruction of remnant natural sites within areas already affected by development.*

**Compliance: BU sites meet these requirements. Currents would not be detrimentally affected by the Preferred Alternative. No sites that are advantageous for colonization of predators or nonindigenous species are proposed. Proper coordination with U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), under the requirements of the Endangered Species Act, was implemented and no impacts to endangered species or their habitats are anticipated. Cutterhead suction dredges do not impact spawning or migration. Impacts to sea**

---

turtles would be avoided or minimized: (1) hopper dredging would be limited to the cooler months, when possible, when sea turtle activity and abundance is lowest; (2) dredges would employ trawls to safely remove sea turtles before being adversely affected by dredge equipment; and (3) qualified turtle observers would be used to document any turtles that become entrained by the hopper dredge dragheads (any information would be submitted accordingly to the USFWS and NMFS).

*(7) Adverse effects on human use potential from dredging and dredged material disposal or placement can be minimized by:*

- (A) selecting sites and following procedures to prevent or minimize any potential damage to the aesthetically pleasing features of the site, particularly with respect to water quality;*
- (B) selecting sites which are not valuable as natural aquatic areas;*
- (C) timing dredging and dredged material disposal or placement activities to avoid the seasons or periods when human recreational activity associated with the site is most important; and*
- (D) selecting sites that will not increase incompatible human activity or require frequent dredge or fill maintenance activity in remote fish and wildlife areas.*

**Compliance: Placement of dredged material to provide for shore nourishment and creation of saline marsh may temporarily restrict recreational use of the area by the public at the Texas and Louisiana Points shoreline. Temporary and minor adverse effects to fisheries may result from altering or removing productive fishing grounds and interfering with fishing activity near or in the ODMDSs. However, BU and mitigation features would contribute significantly to the human use potential, particularly recreational fishing, by creating, restoring, and enhancing estuarine habitats necessary for marine life cycles (particularly several commercially and recreationally important species). During dredging cycles, some existing designated PAs can provide habitat for birds and wildlife species that pose an aircraft strike hazard, however; no new PAs would be constructed within the Federal Aviation Administration separation perimeters (refer to sections 3.14.4.1.2 and 4.15.2.11 of the FEIS for more details).**

*(8) Adverse effects from new channels and basins can be minimized by locating them at sites:*

- (A) that ensure adequate flushing and avoid stagnant pockets; or*
- (B) that will create the fewest practicable adverse effects on CNRAs from additional infrastructure such as roads, bridges, causeways, piers, docks, wharves, transmission line crossings, and ancillary channels reasonably likely to be constructed as a result of the project; or*

- 
- (C) *with the least practicable risk that increased vessel traffic could result in navigation hazards, spills, or other forms of contamination which could adversely affect CNRAs;*
- (D) *provided that, for any dredging of new channels or basins subject to the requirements of §501.15 of this title (relating to Policy for Major Actions), data and information on minimization of secondary adverse effects need not be produced or evaluated to comply with this paragraph if such data and information is produced and evaluated in compliance with §501.15(b)(1) of this title.*

**Compliance: The SNWW deepening constitutes new work dredging to the existing ship channel. Some new access channels would have to be dredged to allow construction of mitigation sites within Louisiana but these would be as minimal as possible and would not create stagnant pockets and navigation hazards, and would not impact any CNRAs (except submerged lands). All impacts within Texas would be offset by the BU features and as described in the DMMP.**

- (c) *Disposal or placement of dredged material in existing contained dredge disposal sites identified and actively used as described in an environmental assessment or environmental impact statement issued prior to the effective date of this chapter shall be presumed to comply with the requirements of subsection (a) of this section unless modified in design, size, use, or function.*

**Compliance: All PAs were reviewed by the Habitat Evaluation Workgroup (HW) of the ICT and no further environmental review was recommended for the existing PAs in active use. Existing upland confined placement areas are being modified to increase levee heights with new work material, but this work would not enlarge the footprint of the existing PAs. In addition, the renewed use of inactive PAs was also determined to not constitute adverse change to the existing environmental conditions. The ICT HW identified one existing upland PA (PA 24) required to be expanded that would result in converting 86 acres of freshwater wetlands into a confined placement area. However, the ICT HW concluded impacts to the 86-acre freshwater wetland would be fully offset by benefits derived from restoration features within the Neches River BU Feature.**

- (d) *Dredged material from dredging projects in commercially navigable waterways is a potentially reusable resource and must be used beneficially in accordance with this policy.*

**Compliance: New work and future maintenance dredged material to be generated by the Preferred Alternative would be used beneficially for shoreline protection and restoring, creating, and enhancing wetlands where economically feasible, physically compatible, and environmentally beneficial. All impacts within Texas would be offset by the BU features and as described in the DMMP.**

- (1) *If the costs of the beneficial use of dredged material are reasonably comparable to the costs of disposal in a non-beneficial manner, the material shall be used beneficially.*

- 
- (2) *If the costs of the beneficial use of dredged material are significantly greater than the costs of disposal in a non-beneficial manner, the material shall be used beneficially unless it is demonstrated that the costs of using the material beneficially are not reasonably proportionate to the costs of the project and benefits that will result. Factors that shall be considered in determining whether the costs of the beneficial use are not reasonably proportionate to the benefits include, but are not limited to:*
- (A) *environmental benefits, recreational benefits, flood or storm protection benefits, erosion prevention benefits, and economic development benefits;*
  - (B) *the proximity of the beneficial use site to the dredge site; and*
  - (C) *the quantity and quality of the dredged material and its suitability for beneficial use.*
- (3) *Examples of the beneficial use of dredged material include, but are not limited to:*
- (A) *projects designed to reduce or minimize erosion or provide shoreline protection;*
  - (B) *projects designed to create or enhance public beaches or recreational areas;*
  - (C) *projects designed to benefit the sediment budget or littoral system;*
  - (D) *projects designed to improve or maintain terrestrial or aquatic wildlife habitat;*
  - (E) *projects designed to create new terrestrial or aquatic wildlife habitat, including the construction of marshlands, coastal wetlands, or other critical areas;*
  - (F) *projects designed and demonstrated to benefit benthic communities or aquatic vegetation;*
  - (G) *projects designed to create wildlife management areas, parks, airports, or other public facilities;*
  - (H) *projects designed to cap landfills or other waste disposal areas;*
  - (I) *projects designed to fill private property or upgrade agricultural land, if cost-effective public beneficial uses are not available; and*
  - (J) *projects designed to remediate past adverse impacts on the coastal zone.*
- (e) *If dredged material cannot be used beneficially as provided in subsection (d)(2) of this section, to avoid and otherwise minimize adverse effects as required in subsection (a) of this section, preference will be given to the greatest extent practicable to disposal in:*

---

(1) *contained upland sites;*

(2) *other contained sites; and*

(3) *open water areas of relatively low productivity or low biological value.*

**Compliance: New work and future maintenance dredged material whose sediment characteristics preclude being used beneficially or are not economically feasible to be used beneficially would be placed in either the ODMDs or upland confined PAs (see sections 2.1, 2.2.3, and 2.3.2 in the FEIS).**

(f) *For new sites, dredged materials shall not be disposed of or placed directly on the boundaries of submerged lands or at such location so as to slump or migrate across the boundaries of submerged lands in the absence of an agreement between the affected public owner and the adjoining private owner or owners that defines the location of the boundary or boundaries affected by the deposition of the dredged material.*

**Compliance: Placement areas are designed to prevent impacts to adjoining private lands. All property rights and boundaries associated with submerged lands would be observed.**

## **Appendix I2**

### **Compliance with Louisiana Coastal Management Program**

## **Appendix I2**

### **Compliance with Goals and Policies – Part I, Chapter 7, §700–§729 Dredging and Dredged Material Disposal and Placement Sabine-Neches Waterway Channel Improvement Project Environmental Impact Statement Louisiana Coastal Zone Management Program Consistency Determination**

#### **INTRODUCTION**

Section 307 of the Coastal Zone Management Act of 1972, 16 USC 141 et seq., requires that “each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with state approved management programs.” In compliance with Section 307, a consistency determination has been prepared for the Sabine-Neches Waterway (SNWW) Channel Improvement Project (CIP). Coastal Use Guidelines were written to implement the policies and goals of the Louisiana Coastal Resources Program and to serve as a set of performance standards for evaluating projects. Compliance with the Louisiana Coastal Resources Program and, therefore, Section 307, requires compliance with applicable Coastal Use Guidelines.

#### **PROJECT DESCRIPTION**

The U.S. Army Corps of Engineers (USACE), Galveston District proposes to modify the navigation channels servicing the ports of Beaumont, Port Neches, Port Arthur, and Orange, Texas, in the interests of commercial navigation. These channels are collectively referred to as the SNWW, and the project to modify the SNWW is referred to as the CIP. The purpose of the CIP is to improve the transportation efficiency and safety of the SNWW’s deep-draft navigation system, while protecting the quality of the area’s coastal and estuarine resources.

The existing 40-foot inshore and 42-foot offshore SNWW project is a federally authorized and maintained waterway located in Jefferson and Orange counties, Texas, and Cameron and Calcasieu parishes, Louisiana. The existing SNWW consists of the following channel reaches, as listed from offshore to inshore: (1) Sabine Bank Channel; (2) Sabine Pass Outer Bar Channel; (3) Sabine Pass Jetty Channel; (4) Sabine Pass Channel; (5) Port Arthur Channel; (6) Sabine-Neches Channel; and (7) Neches River Channel.

The authorized depth of the channel in the Preferred Alternative would increase from 40 to 48 feet along the entire existing channel, and the offshore entrance channel would extend 13.2 miles farther into the Gulf of Mexico (Gulf). The Sabine Pass Jetty Channel, Sabine Pass Channel, Port Arthur and Sabine-Neches canals, and the Neches River Channel would be deepened from 40 feet to 48 feet. The authorized depth of the existing offshore Entrance Channel (Sabine Pass Outer Bar Channel and Sabine Bank

---

Channel) is currently 42 feet; the additional depth is needed to accommodate fluctuations in offshore surface water elevation. These channels and the proposed Sabine Bank Extension Channel would be deepened from 42 to 50 feet. This would increase the SNWW from 64 miles to approximately 77 miles in length. No modifications to the existing Sabine Pass Jetties would be required as part of the Preferred Alternative.

The Sabine Pass Jetty Channel and the majority of the inshore channels (Sabine Pass Channel, Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel) would remain at their existing widths. With the exception of wider sections at anchorages or channel intersections, these channels transition from 500 feet wide between the jetties to 400 feet wide upstream of the Martin Luther King Bridge on the Sabine-Neches Canal and Neches River Channel. The Taylor Bayou Channels and Basins would also be widened and deepened to 48 feet. Although the Sabine-Neches Canal and Neches River Channel would not be widened, navigation efficiency would be improved with short stretches of selective widening and bend easings in both reaches, and the addition or enlargement of one anchorage and two turning/anchorage basins on the Neches River Channel.

Environmental affects addressed in the SNWW CIP Final Environmental Impact Statement (FEIS), particularly pertaining to coastal resources, have been analyzed in a large surrounding area that includes Sabine Lake and adjacent marshes in Texas and Louisiana, the Neches River Channel up to the new Neches River Saltwater Barrier, the Sabine River Channel to the Sabine Island Wildlife Management Area (WMA), the Gulf Intracoastal Waterway (GIWW), west to Star Bayou, the GIWW east to Gum Cove Ridge, the Gulf shoreline extending to 10 miles either side of Sabine Pass, and offshore in the Gulf to 13.2 miles beyond the end of the current navigation channel.

Several project components would specifically occur within Louisiana and include:

- direct impacts from channel deepening along the northern side of the Sabine Pass Channel;
- placement of dredged material for beneficial use along Louisiana Point (which would involve regular shoreline nourishment using maintenance material from the Sabine Pass Channel);
- dredged material placement within placement area (PA) 5 (located in Louisiana at Sabine Pass);
- Willow Bayou mitigation areas (two areas) within Sabine National Wildlife Refuge (NWR) (which also includes the associated sediment source-a borrow trench and access channel from the GIWW in Sabine Lake);
- Black Bayou East mitigation areas (two mitigation areas and associated sediment source – the dredging of accumulated sediment in Lake Charles Deepwater Channel/GIWW); and
- Black Bayou West mitigation area (one mitigation area, including the sediment source from regularly scheduled maintenance dredging already occurring as an existing action for Sabine River Channel).

---

The SNWW study area contains a high concentration of significant coastal wetlands. The USACE, in coordination with an Interagency Coordination Team (ICT) comprised of numerous State and Federal agencies, including the Louisiana Department of Natural Resources (LDNR), developed a dredged material management plan (DMMP) that uses dredged material from the proposed SNWW CIP in an environmentally acceptable and economically practical manner. The ICT identified, within the proposed project footprint, 109,175 acres (171 square miles) in Texas and 197,530 acres (309 square miles) in Louisiana of coastal marsh, bottomland hardwood, and cypress-tupelo swamp habitats.

No net loss of coastal wetlands was a specific goal of the SNWW CIP ICT and alternatives evaluation. All impacts from the Preferred Alternative within Texas would be offset by the DMMP, and impacts in Louisiana would be offset through compensatory mitigation. The Preferred Alternative's mitigation plan consists of restoring five degraded marsh areas east of Sabine Lake near Willow and Black bayous, Louisiana. This mitigation measure would restore 2,783 acres of emergent marsh in existing open water areas within the marsh, improve 957 acres of shallow-water habitat by creating shallower, smaller ponds and channels within the restored marsh, and stabilize and nourish 4,355 acres of existing, adjacent marsh. Material for marsh mitigation would come from regular maintenance dredging of the Sabine River Channel and from dedicated dredging of the Sabine Lake borrow trench and of accumulated sediments from the Lake Charles Deepwater Channel/GIWW (Figure 1.1-2 of the FEIS).

In Louisiana, beginning at the coast and working inland, the following protected and sensitive habitat areas are present within the study area (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority, 1998; U.S. Geological Survey-National Wetlands Research Center, 2004):

- 71,500 acres of saline, brackish, and intermediate marshes in the Louisiana Chenier Plain habitat at Louisiana Point, Blue Buck Point, and Johnson Bayou areas. Sensitive areas include Sabine Lake Ridges (33,500 acres of chenier ridge, and saline, brackish, and intermediate marsh), Johnson's Bayou Ridge (about 4,000 acres of saline and brackish marshes, and chenier ridges), West Johnson's Bayou (13,000 acres of brackish and intermediate marsh) and East Johnson's Bayou (26,719 acres of chenier ridge, and fresh, intermediate, and brackish marsh).
- 44,300 acres of brackish, intermediate, and fresh coastal marsh in the western half of the Sabine NWR. The Sabine NWR, as a whole, contains 124,500 acres of fresh, intermediate, and brackish marsh between Calcasieu and Sabine lakes in southwest Louisiana. Approximately 13,750 acres of marsh within this study area has degraded to open water. This sensitive area contains the Willow Bayou mapping unit (36,300 acres) and 8,000 acres in the west section of the Southeast Sabine mapping unit.
- 46,500 acres of brackish, intermediate, and fresh marsh in an area north of Willow Bayou and south of the GIWW. This sensitive area contains the Black Bayou mapping unit (36,300 acres), and 10,220 acres of fresh and intermediate marsh in the Southwest Gum Cove mapping unit.
- 25,700 acres of fresh and intermediate marsh and bottomland hardwood habitat in the Perry Ridge mapping unit, north of the GIWW and east of the Sabine River.

- 
- 650 acres of cypress-tupelo swamp and bottomland hardwoods in the Blue Elbow Swamp, east of the Sabine River and north of Interstate 10.
  - 7,000 acres of cypress-tupelo swamp and bottomland hardwoods in the Sabine Island WMA, north of the Blue Elbow Swamp and east of the Sabine River.

## **GUIDELINES**

### **1. Guidelines Applicable to All Uses**

**Guideline 1.1:** The guidelines must be read in their entirety. Any proposed use may be subject to the requirements of more than one guideline or section of guidelines and all applicable guidelines must be complied with.

**Response:** Acknowledged.

**Guideline 1.2:** Conformance with applicable water and air quality laws, standards, and regulations, and with those laws, standards and regulations which have been incorporated into the coastal resources program shall be deemed in conformance with the program except to the extent that these guidelines would impose additional requirements.

**Response:** Acknowledged.

**Guideline 1.3:** The guidelines include both general provisions applicable to all uses and specific provisions applicable only to certain types of uses. The general guidelines apply in all situations. The specific guidelines apply only to situations they address. Specific and general guidelines should be interpreted to be consistent with each other. In the event there is an inconsistency, the specific should prevail.

**Response:** Acknowledged.

**Guideline 1.4:** These guidelines are not intended to nor shall they be interpreted so as to result in an involuntary acquisition or taking of property.

**Response:** Acknowledged.

**Guideline 1.5:** No use or activity shall be carried out or conducted in such a manner as to constitute a violation of the terms of a grant or donation of any lands or water-bottoms to the State or any subdivision thereof. Revocations of such grants and donations shall be avoided.

**Response:** Acknowledged.

**Guideline 1.6:** Information regarding the following general factors shall be utilized by the permitting authority in evaluating whether the proposed use is in compliance with the guidelines.

- 
- a) Type, nature, and location of use.
  - b) Elevation, soil, and water conditions and flood and storm hazard characteristics of site.
  - c) Techniques and materials used in construction, operation, and maintenance or use.
  - d) Existing drainage patterns and water regimes of surrounding area including flow, circulation, quality, quantity, and salinity; and impacts on them.
  - e) Availability of feasible alternative sites or methods for implementing the use.
  - f) Designation of the area for certain uses as part of a local program.
  - g) Economic need for use and extent of impacts of use on economy of locality.
  - h) Extent of resulting public and private benefits.
  - i) Extent of coastal water dependency of the use.
  - j) Existence of necessary infrastructure to support the use and public costs resulting from the use.
  - k) Extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited.
  - l) Proximity to and extent of impacts on important natural features such as beaches, barrier islands, tidal passes, wildlife and aquatic habitats, and forest lands.
  - m) The extent to which regional, State, and National interests are served including the National interest in resources and the siting of facilities in the coastal zones as identified in the coastal resources program.
  - n) Proximity to, and extent of impacts on, special areas, particular areas, or other areas of particular concern of the State program or local programs.
  - o) Likelihood of, and extent of impacts of, resulting secondary impacts and cumulative impacts.
  - p) Proximity to and extent of impacts on public lands or works, or historic, recreational or cultural resources.
  - q) Extent of impacts on navigation, fishing, public access, and recreational opportunities.
  - r) Extent of compatibility with natural and cultural setting.
  - s) Extent of long-term benefits or adverse impacts.

**Response:** Acknowledged.

**Guideline 1.7:** It is the policy of the coastal resources program to avoid the following adverse impacts. To this end, all users and activities shall be planned, sited, designed, constructed, operated, and maintained to avoid to the maximum extent practicable significant:

- a) reductions in the natural supply of sediment and nutrients to the coastal system by alterations of freshwater flow.

---

**Response:** No alteration of freshwater flows would occur from the proposed project (Section 4.6 of the FEIS); however, additional sediments would be added to certain marsh areas to restore emergent marsh acreage and to allow for added productivity (sections 4.5 and 4.6 and Chapter 5 of the FEIS).

- b) adverse economic impacts on the locality of the use and affected governmental bodies.

**Response:** The Preferred Alternative is expected to have a positive impact on the local economy (sections 1.0 and 4.15 of the FEIS); no adverse economic impacts on the locality or governmental bodies would occur as a result of the Preferred Alternative.

- c) detrimental discharges of inorganic nutrient compounds into coastal waters.

**Response:** There could be a temporary increase in the concentration of inorganic nutrient compounds near the dredging BU and mitigation sites from resuspension of bottom sediments. Suspended particles resulting from placement would not result in detrimental effects to chemical and physical properties of the water column.

- d) alterations in the natural concentration of oxygen in coastal waters.

**Response:** Oxygen concentrations at the dredging and placement sites could be reduced during dredging operations and temporarily afterward if organic or ammonia load in the sediments is sufficiently high. Anoxic conditions are not expected to develop, and no significant adverse impacts to aquatic species are expected (Section 4.5 of the FEIS).

- e) destruction or adverse alterations of streams, wetlands, tidal passes, inshore waters and waterbottoms, beaches, dunes, barrier islands, and other natural biologically valuable areas or protective coastal features.

**Response:** Alterations to the SNWW, Sabine Lake, near-shore Gulf, beach, shallow-water areas, and wetlands are expected. Several project components would specifically occur within Louisiana and include direct impacts from channel deepening along the northern side of the Sabine Pass Channel, placement of dredged material for beneficial use along Louisiana Point (which would involve regular shoreline nourishment using maintenance material from the Sabine Pass Channel), dredged material placement within PA 5 (located in Louisiana at Sabine Pass), Willow Bayou mitigation areas (two areas) within the Sabine NWR (which also includes the associated sediment source-a borrow trench and access channel from the GIWW in Sabine Lake), Black Bayou East mitigation areas (two mitigation areas and associated sediment source-the dredging of accumulated sediment in the Lake Charles Deepwater Channel/GIWW), and Black Bayou West mitigation area (one mitigation area, including the sediment source from regularly scheduled maintenance dredging already occurring as an existing action for the Sabine River Channel). The compensatory mitigation for project-induced impacts are considered to be beneficial (Section 4.1 and Chapter 5 of the FEIS). The effects of dredging and dredged material deposition are discussed in more detail under Guidelines 4.1 to 4.7.

---

f) adverse disruption of existing social patterns.

**Response:** No disruption of existing social pattern is expected (Section 4.15 of the FEIS).

g) alterations of the natural temperature regime of coastal waters.

**Response:** The Preferred Alternative would not alter water temperatures in coastal waters (sections 4.4 and 4.6 of the FEIS).

h) detrimental changes in existing salinity regimes.

**Response:** A small increase in salinity would likely occur since alterations in an increase with saltwater intrusion would occur with deepening the SNWW. Essentially all detrimental impacts associated with the Preferred Alternative are from expected alterations in salinity. Extensive interagency coordination, combined with detailed ecological modeling, resulted in BU features and mitigation measures that offset and compensate for all ecological impacts (Chapter 5, appendices B and C of the FEIS).

i) detrimental changes in littoral and sediment transport processes.

**Response:** This plan would cause some changes in littoral and sediment transport processes. A small increase in Gulf shoreline erosion (0.42 foot/year) between 0.5 and 3.5 miles from the Sabine Jetty would be caused by changes in wave angles due to the offshore channel extension. This impact is more than offset by benefits of the Gulf Shoreline BU Feature. Beneficial changes would involve regular nourishment of 3 miles of shoreline at Louisiana Point once every 6 years, or eight placement episodes, or the 50-year project life.

j) adverse effects of cumulative impacts.

**Response:** A number of actions have influenced the study area and are expected to continue to do so. A cumulative impacts assessment was conducted that took into consideration 13 past or present actions, 6 reasonably foreseeable future actions, and 6 ongoing regional activities, initiatives, and programs that are likely to affect the study area. These included industrial activities such as pipelines and construction of liquid natural gas (LNG) facilities, as well as channel improvements and ecosystem restoration efforts. Details and additional discussion regarding the cumulative impact evaluation can be found in Section 4.16 of the FEIS; regional programs and initiatives are summarized in Chapter 7 of the FEIS.

Cumulative adverse impacts from past, existing, and reasonably foreseeable future projects, along with the Project, are not expected to have significant adverse effects within the study area. Many of the projects included in the cumulative impacts analysis are part of the continued port and shipping industry development. Other projects considered in the assessment are beneficial to certain natural resources and add to the diversity and health of the publicly held recreation and conservation areas, migratory bird habitats, Essential Fish Habitat (EFH), and other sensitive coastal resources. Existing governmental regulations, in conjunction with the goals and coordination of community planning efforts, address the

---

issues that influence local and ecosystem-level conditions. Cumulative adverse impacts that are expected to occur within the study area primarily include temporary and localized increased nitrogen oxides emissions and noise. Some projects considered in this assessment are beneficial to certain natural resources (predominantly wetlands and the species dependent on them) and add to the diversity and health of publicly held recreation and conservation areas, migratory bird habitats, EFH, and other sensitive coastal resources. Impacts associated with the Preferred Alternative have been fully offset by compensatory mitigation measures. In addition, the Preferred Alternative would have net beneficial effects on wetlands, water quality, and submerged aquatic vegetation (SAV) with the implementation of the Gulf Shoreline BU Feature at Louisiana Point. Results of cumulative impacts assessments for the Preferred Alternative are in Section 4.16.5 of the FEIS.

- k) detrimental discharges of suspended solids into coastal waters, including turbidity resulting from dredging.

**Response:** Dredging and placement of dredged material would temporarily and locally increase turbidity and suspended solids in adjacent waters (sections 4.5 and 4.6 of the FEIS). The sediments have been determined to be suitable for placement, mitigation, and beneficial uses.

- l) reductions or blockage of water flow or natural circulation patterns within or into an estuarine system or wetland forest.

**Response:** Gulf beach nourishment uses maintenance material from Sabine Pass Channel to reduce erosion impacts along Louisiana Point. Reducing erosion with maintenance material would alter flows and circulation patterns positively. Marsh creation, which would not use material from the project, would reestablish most of the natural circulation patterns and reduce marsh loss and salinity intrusion. Although beach nourishment and mitigation efforts may alter flow, alterations would be beneficial (Chapter 5, appendices B and C of the FEIS). No natural waterways would be blocked or otherwise restricted by navigation channel improvements or mitigation measures.

- m) discharges of pathogens or toxic substances into coastal waters.

**Response:** Extensive analyses of sediment material associated with the project were conducted, including data recently collected in March 2008 and April 2009, and results indicate that there are no causes for concern related to pathogens or toxic substances. Section 3.4 of the FEIS discusses sediment testing results.

- n) adverse alteration or destruction of archaeological, historical, or other cultural resources.

**Response:** Adverse effects or destruction of these resources is not expected. The USACE's Galveston District has consulted with the Louisiana State Historic Preservation Office in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and has executed a Programmatic Agreement to cover completion of cultural resource surveys and assessments in mitigation areas prior to

---

construction. Should any historic properties be identified, measures would be taken to ensure that project impacts would be avoided or mitigated.

- o) fostering of detrimental secondary impacts in undisturbed or biologically highly productive wetland areas.

**Response:** Most of the wetlands in the study area have been significantly altered by subsidence and saltwater intrusion, although most areas remain highly productive fish and wildlife habitats. No secondary impacts would be induced in these areas by the Preferred Alternative.

- p) adverse alteration or destruction of unique or valuable habitats, critical habitat for endangered species, important wildlife or fishery breeding or nursery areas, designated wildlife management or sanctuary areas, or forest lands.

**Response:** Critical Habitat for the federally endangered piping plover would be directly affected from dredged material beneficial use for beach nourishment along a 3-mile stretch of Louisiana Point. Beach nourishment efforts would result in positive effects for piping plover habitat (Appendix G of FEIS). Wetland mitigation areas in the Sabine NWR would result in short-term, localized adverse effects but the net, long-term effects would be positive, as determined by the Wetland Value Assessment (WVA) Model (Appendix C of the FEIS). In addition to the Sabine NWR, the Sabine Island WMA is located in the Louisiana study area; however no salinity impacts from the Preferred Alternative would affect Sabine Island WMA.

- q) adverse alteration or destruction of public parks, shoreline access points, public works, designated recreation areas, scenic rivers, or other areas of public use and concern.

**Response:** Beneficial alterations to shoreline at Louisiana Point and degraded wetlands in Sabine NWR would occur as a result of the Preferred Alternative.

- r) adverse disruptions of coastal wildlife and fishery migratory patterns.

**Response:** Wintering waterfowl, shore birds, and wading birds could be temporarily displaced from PA 5, marsh mitigation areas, and the Gulf shoreline during dredged material placement activities. The adults of various aquatic species, including brown shrimp, white shrimp, blue crab, red drum, and menhaden, spawn in the Gulf, and the young juveniles of these species use deep tidal passes such as the SNWW for immigration to inland estuarine nursery areas. Increased turbidity resulting from dredging activities could have a temporary, localized, adverse effect on the movement of these organisms, but would not permanently disrupt wildlife and fishery migration patterns.

- s) land loss, erosion, and subsidence.

**Response:** Slightly higher salinities may lead to the loss of 691 acres of marsh, associated SAV and shallow-water habitat, as stressed emergent marsh converts to open water. The Preferred Alternative's BU feature at Louisiana Point and mitigation measures would nourish highly eroded areas and restore

---

subsidized wetlands (which would not result in land loss). The Louisiana Point BU Feature would regularly nourish 3 miles of shoreline. The Mitigation Plan compensates for the Preferred Alternative's salinity increase and associated losses in marsh and productivity by marsh creation activities that would influence a total of 8,095 acres of Louisiana marshes in the Willow and Black Bayou watersheds. The plan would restore 2,783 acres of emergent marsh in existing open-water areas within the marsh, improve 957 acres of shallow-water habitat by creating shallower, smaller ponds and channels within the restored marsh, and stabilize and nourish 4,355 acres of existing marsh located in and around the marsh restoration zone.

- t) increases in the potential for flood, hurricane, or other storm damage, or increases in the likelihood that damage would occur from such hazards.

**Response:** The Preferred Alternative would not increase potential for flood, hurricane, or other storm damage, or increase likelihood of damage (Section 4.1 of the FEIS). The Preferred Alternative's effect on storm surge was evaluated with hydrodynamic salinity (HS) modeling; no effect on storm surge was found, and minor additional land loss would not affect wetland buffer functions on storm impacts.

- u) reductions in the long term biological productivity of the coastal ecosystem.

**Response:** The Preferred Alternative would cause reductions in marsh biological productivity through salinity increases and associated land loss; however, these expected effects would be offset by the mitigation efforts and the BU feature in Louisiana. The Mitigation Plan compensates for the Preferred Alternative's losses in marsh productivity by marsh creation activities that would influence a total of 8,095 acres of Louisiana marshes in the Willow and Black Bayou watersheds. The plan would restore 2,783 acres of emergent marsh in existing open-water areas within the marsh, improve 957 acres of shallow-water habitat by creating shallower, smaller ponds and channels within the restored marsh, and stabilize and nourish 4,355 acres of existing marsh located in and around the marsh restoration zone. These efforts effectively mitigate losses in productivity and were modeled via WVA (Section 4.1 and Appendix C of the FEIS) and HS model (Section 4.1 of the FEIS).

**Guideline 1.8:** In those in which the modifier "maximum extent practicable" is used, the proposed use is in compliance with the guideline if the standard modified by the term is complied with. If the modified standard is not complied with, the use would be in compliance with the guideline if the permitting authority finds, after a systematic consideration of all pertinent information regarding the use, the site, and the impacts of the use as set forth in Guideline 1.6, and a balancing of their relative significance, that the benefits resulting from the proposed use would clearly outweigh the adverse impacts resulting from noncompliance with the modified standard and there are no feasible and practical alternative locations, methods, and practices for the uses that are in compliance with the modified standard, and:

- a) significant public benefits would result from the use; or
- b) the use would serve important regional, state, or national interests, including the national interest in resources and the siting of facilities in the coastal zone identified in the coastal resources program or the use is coastal water dependent.

---

The systematic consideration process shall also result in a determination of those conditions necessary for the use to be in compliance with the guideline. Those conditions shall assure that the use is carried out utilizing those locations, methods, and practices which maximize conformance to the modified standard; are technically, economically, environmentally, socially, and legally feasible and practical and minimize or offset those adverse impacts listed in Guideline 1.7 and in the guideline at issue.

**Response:** Acknowledged.

**Guideline 1.9:** Uses shall, to the maximum extent practicable, be designed and carried out to permit multiple concurrent uses which are appropriate for the location and to avoid unnecessary conflicts with other uses of the vicinity.

**Response:** The purpose of the Preferred Alternative is to improve navigational efficiency and thus result in a net benefit to the economy of the region and the Nation. Other uses of the channel, such as commercial and recreational fishing and water sports, are and would continue unaffected.

**Guideline 1.10:** These guidelines are not intended to be, nor shall they be, interpreted to allow expansion of governmental authority beyond that established by La. R.S. 49:213.1 through 49:213.21, as amended; nor shall these guidelines be interpreted so as to require permits for specific uses legally commenced or established prior to the effective date of the coastal use permit program nor to normal maintenance or repair of such uses.

**Response:** Acknowledged.

## **2. Guidelines for Levees**

Not applicable.

## **3. Guidelines for Linear Facilities**

Not applicable.

## **4. Guidelines for Dredged Spoil Deposition**

**Guideline 4.1:** Spoil shall be deposited utilizing the best practical techniques to avoid disruption of water movement, flow, circulation, and quality.

**Response:** Placement of dredged material to build marsh and terraces in the Sabine NWR would not negatively disrupt water flow. Dredged material not beneficially used would be placed into upland confined PAs, which, like the channel improvements, would not negatively disrupt water movement, flow, or circulation. The sediments to be excavated are not contaminated, and no significant adverse effect on water quality is expected (sections 4.4 to 4.6 of the FEIS).

---

**Guideline 4.2:** Spoil shall be used beneficially to the maximum extent practicable to improve productivity or create new habitat, reduce or compensate for environmental damage done by dredging activities, or prevent environmental damage. Otherwise, existing spoil disposal areas or upland disposal shall be utilized to the maximum extent practicable rather than creating new disposal areas.

**Response:** No construction material would be used beneficially within Louisiana as most channels are too far to feasibly (both economically and physically) execute. The Sabine Pass Channel is located near Louisiana, but marshes near the channel are in good condition and offer no opportunities for restoration or mitigation. All mitigation areas within Louisiana would be constructed with borrow material from dedicated dredging or maintenance of the Sabine River Channel.

**Guideline 4.3:** Spoil shall not be disposed of in a manner which could result in the impounding or draining of wetlands or the creation of development sites unless spoil deposition is part of an approved levee or land surface alteration project.

**Response:** No dredged material would be used that would impound or drain wetlands. No new PAs would be created in wetlands.

**Guideline 4.4:** Spoil shall not be disposed of on marsh, known oyster or clam reefs, or in areas of submerged vegetation to the maximum extent practicable.

**Response:** Some submerged vegetation may be temporarily impacted during wetland mitigation, but restoration would improve conditions for SAV over the long term. The Preferred Alternative would restore and enhance degraded wetlands as determined by the WVA (Appendix C to the FEIS). No impacts to oyster reefs would occur from the Preferred Alternative.

**Guideline 4.5:** Spoil shall not be disposed of in such a manner as to create a hindrance to navigation or fishing, or hinder timber growth.

**Response:** Navigation or timber growth would not be hindered. Fishing activities could be temporarily affected during construction or placement activities.

**Guideline 4.6:** Spoil disposal areas shall be designed and constructed and maintained using the best practicable techniques to retain the spoil at the site, reduce turbidity, and reduce shoreline erosion when appropriate.

**Response:** The material to be used beneficially at Louisiana Point would cause temporary and localized increases in turbidity but would provide an overall benefit to the ecosystem by adding sediment to the littoral system and reducing shoreline erosion. Dredged material not used beneficially would be placed in confined PA 5. PAs are designed and managed to control turbidity and retain as much of the dredged material as practicable with use of confinement levees or spill boxes. Best management practices to minimize or avoid turbidity effects could include silt curtains.

---

**Guideline 4.7:** The alienation of state-owned property shall not result from spoil deposition activities without the consent of the Department of Natural Resources.

**Response:** No State lands would be alienated as a result of the proposed action.

## **5. Guidelines for Shoreline Modification**

**Response:** Dredged material from the Sabine Pass reach of the SNWW would be pumped to Louisiana Point on alternated maintenance cycles (Appendix D of the FEIS) for shoreline restoration. Placement on this eroded shoreline would not be confined nor would any other structural measures be used.

**Guidelines 5.1–5.9:** Not applicable.

## **6. Guidelines for Surface Alterations**

Not Applicable.

## **7. Guidelines for Hydrologic and Sediment Transport Modifications**

Not Applicable.

## **8. Guidelines for the Disposal of Wastes**

Not Applicable.

## **9. Guidelines for Uses That Result in the Alteration of Waters Draining into Coastal Waters**

Not applicable.

## **10. Guidelines for Oil, Gas, and Other Mineral Activities**

Not applicable.

## **CONSISTENCY DETERMINATION**

The guidelines of Louisiana's Coastal Resources Program have been applied to the proposed project for the SNWW CIP. The USACE, Galveston District has determined that implementation of the Preferred Alternative, which provides for deepening of the SNWW from 40 to 48 feet and an offshore channel from 48 to 50 feet in depth from offshore to the Port of Beaumont Turning Basin, extending the 50-foot-deep offshore channel by 13.2 miles, tapering and marking the Sabine Bank Channel from 800 feet wide to 700 feet wide, the bend of easings on the Sabine-Neches Canal and Neches River Channel, deepening and widening of the Taylor Bayou navigation channels and turning basins to 48 feet, and the addition of new

---

anchorage/turning basins on the Neches River Channel, would be consistent to the maximum extent practicable, with the State of Louisiana's approved Coastal Resources Program.

---

## REFERENCES

- Louisiana Coastal Wetlands Conservation and Restoration Task Force. 1998. Caring for Coastal Wetlands, a summary of the 1997 Evaluation Report to the U.S. Congress on the effectiveness of Louisiana Coastal Wetland Restoration Projects. <http://www.lacoast.gov/reports/program/CaringBrochure/index.htm> (accessed February 2007). U.S. Geological Survey, National Wetlands Research Center, Lafayette, Louisiana.
- U.S. Geological Survey-National Wetlands Research Center. 2004. Louisiana Coastal Areas Mapping Units for the Calcasieu-Sabine Basin. U.S. Department of the Interior, U.S. Geological Survey, National Wetlands Research Center, Lafayette, Louisiana and Coastal Restoration Field Station, Baton Rouge, Louisiana.