FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR
SABINE-NECHES WATERWAY
CHANNEL IMPROVEMENT PROJECT
SOUTHEAST TEXAS AND SOUTHWEST LOUISIANA

VOLUME III: APPENDICES A–B

COOPERATING AGENCIES:

U.S. ENVIRONMENTAL PROTECTION AGENCY
U.S. DEPARTMENT OF THE INTERIOR – FISH AND WILDLIFE SERVICE
U.S. DEPARTMENT OF COMMERCE – NATIONAL MARINE FISHERIES SERVICE
TEXAS GENERAL LAND OFFICE
LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

PREPARED BY:

U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT
SOUTHWESTERN DIVISION

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VOLUME III

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Coordination

Appendix A
Sabine-Neches Waterway Channel Improvement Project
Coordination

1.0 INTRODUCTION

U.S. Army Corps of Engineers (USACE) and the Sabine Neches Navigation District (SNND) (formerly the Jefferson County Waterway Navigation District [JCWND]) developed a public involvement plan to be used during the feasibility phase for the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). The goal of this public involvement plan was to ensure that USACE and the SNND were responsive to the needs and concerns of all stakeholders and to ensure public involvement through an open, interactive process. Stakeholders include all the various publics that could be affected or are interested in the project. The plan helped USACE and the SNND provide information to, and obtain information from, the stakeholders.

Coordination with resource agencies was conducted primarily through Interagency Coordination Team (ICT) and technical working group meetings. Resource agencies and the study team meet regularly throughout the study process. Over 30 workgroup meetings and 10 ICT meetings were held.

1.1 PROGRAM OBJECTIVES

a. Enhance public understanding of the study, the range of alternatives studied, and the recommended plan for the project.
b. Identify all stakeholders and the best ways to communicate with each.
c. Learn the public's desires, needs, and concerns and make them known to decision-makers.
d. Explain the planning process and study progress.
e. Provide for consultation before decisions are reached.
f. Provide information about the results of environmental studies.
g. Obtain views and concerns on proposed beneficial use areas, and mitigation features.
h. Solicit the public's views and comments for consideration in the decision-making process.
i. Disseminate study information and results in a wide variety of formats.

1.2 PROGRAM ACTIVITIES

To this end, a pro-active outreach program was initiated to ensure that the public, resource agencies, industry, local government, and other interested parties were informed about the project and that any concerns were identified and addressed.

Each of activities listed here is described individually below. The program included:

- scoping meetings
- public workshops to obtain ideas for ecosystem restoration and the beneficial use of dredged material
- media trips by boat down the waterway

- presentations at the Gulf of Mexico Fisheries Management Council's Texas Habitat Protection Advisory Panel
- presentations at regular meetings of Southeast Texas Waterway Advisory Council (SETWAC)
- meetings with Sabine Pilots
- presentation at the 2007 SETX meeting
- meetings with SNWW industries

2.0 PUBLIC SCOPING MEETINGS

2.1 PUBLIC SCOPING MEETING IN 2000

2.1.1 Meeting Summary

A public scoping meeting was held May 24, 2000, commencing at 7:00 p.m. The meeting was announced in local newspapers and with a public notice dated April 20, 2000. The location of the meeting was:

John Gray Center Auditorium
Lamar University
855 E. Florida Ave, Beaumont, Texas

The purpose of the meeting was to inform the public about the initiation of the feasibility study and to solicit comments on navigation concerns, alternatives to be addressed, and environmental issues and concerns. The meeting was attended by 43 persons, as well as representatives of SNND and USACE.

The meeting was conducted by Colonel Nicholas Buechler, Commanding Officer, USACE, Galveston District. Paul Beard, Chairman of the SNND, gave the welcoming address. Col. Buechler explained the purpose and procedures of the meeting and introduced the speakers. Tom Jackson, General Manager of SNND, presented an overview of the development of the Sabine-Neches Waterway and explained the navigation needs that gave rise to the feasibility study. Richard Tomlinson, Project Manager with the Galveston District, presented an overview of the study process.

The meeting was then opened to comments from the public and resource agencies. The issues raised by the speakers that they would like to see addressed in the context of the Draft EIS are as follows:

1. Salinity intrusion, particularly into marshes on the east side of Sabine Lake, the Sabine National Wildlife Refuge (NWR), and upstream on the Sabine and Neches Rivers
2. Effects on wildlife and fisheries which are associated with marsh loss
3. Project effects on tidal amplitude
4. Potential increases in inland reach of storm surges
5. Potential increases in erosion along the channel and along the coast

6. Beneficial use of dredged materials to restore marsh
7. Beneficial use of dredged materials to restore beaches and dunes
8. Establishment of a lock at Sabine Pass as an alternative to the project
9. Deepening through to Sabine Pass and then establish a pipeline distribution center at Sabine Pass as an alternative to deep draft channel improvements to Beaumont.
10. Potential decreases in marshes because of increased needs for placement areas.
11. Potential decreases in sports and shrimp fisheries
12. Effects of relocating approximately 70 pipelines
13. Overall cost of project as it relates to benefits, and the potential to increase taxes
14. Potential impacts to facilities on Pleasure Island such as the TPWD Wildlife Coastal Research Facility and the Corps of Engineers Port Arthur Area Office
15. Potential for restoring the historical hydrology and ecological diversity of the Sabine estuarine system
16. Socioeconomic effects of not improving the channel
17. Identify direct and indirect socioeconomic benefits of channel
18. Evaluate need for new turning basins, berthing areas, and passing zones
19. Who will be responsible for the local cost, both for construction and maintenance of channel improvements and placement areas?
20. Effects on navigation safety

The major concern of the participants was the potential for the project to increase salinity intrusion and further accelerate the decline of existing marshes.

The meeting was adjourned at 8:04 p.m.

2.1.2 Post-Meeting Comments

Several written statements were received by USACE in the month following the meetings. Additional issues that were not raised in the meetings include:

1. Salinity intrusion, particularly into Tony Houseman State Park and Wildlife Management Area (WMA), Lower Neches WMA, J. D. Murphree WMA, and Sea Rim State Park and other habitats of concern such as Sabine Lake, intertidal and fresh marshes at Taylor Bayou, along the GIWW, swamps and bottomland hardwoods, and the Sabine and Neches Rivers
2. Potential impacts to the Sabine Pass Battleground
3. Need for 3-dimensional hydrodynamic modeling of potential salinity and circulation changes
4. Mitigative measures should not adversely affect ingress and egress of marine organisms that use the estuary as part of their life cycle.
5. Studies should incorporate anticipated changes in fresh water inflow
6. Potential impacts to oyster reefs and Blue Buck Point
7. Consistency determination with the Louisiana Department of Natural Resources
8. Cumulative and secondary effects of hydrologic alterations to the coastal ecosystem
9. Beneficial uses of dredged material should be considered for the following areas: Bessie Heights marsh, backdune marshes at the Texas Point NWR, beach

nourishment at Holly Beach and Texas Point, marshes in McFaddin NWR, and marshes within the Lower Neches WMA and J.D. Murphree WMA.

10. Impacts to endangered sea turtles
11. Effects on Essential Fish Habitat (EFH) for postlarval, juvenile and adult red drum, brown shrimp, white shrimp, pink shrimp, postlarval and juvenile Spanish mackerel; categories of habitat that could be affected include estuarine emergent wetlands, estuarine water column, and estuarine mud/sand bottoms.
12. Potential effects to nursery and foraging habitat for economically-important marine fishery species such as spotted seatrout, flounder, Atlantic croaker, black drum, Gulf menhaden, striped mullet and blue crab.
13. Consideration of a submerged sill or constriction at the mouth of Sabine Lake, and water control structures in the wetlands east of Sabine Lake
14. Concern that the Sabine-Neches waterway is close to reaching its capacity for vessel traffic movement

2.2 PUBLIC SCOPING MEETINGS IN 2003

2.2.1 Meeting Summaries

Two public scoping meetings were held in late May 2002. The meetings were announced in the Notice of Intent to Prepare a Draft EIS for Improvements to the Sabine-Neches Ship Channel near Beaumont and Port Arthur, Texas (Federal Register, Volume 67, No. 98, Tuesday, May 21, 2002). A copy of the Notice of Intent is located at the end of this introductory section, before Appendix A-1. The meetings were also announced in local newspapers and with a public notice which was mailed to all persons on the study mailing list.

2.2.1.1 Public Meeting on May 28, 2002

Best Western Hotel
2600 Moeling Street, Lake Charles, LA
Commencing 7:00 pm

The purpose of the meeting was to inform the public about study progress and to solicit comments on environmental issues such as changes in salinity and circulation, changes in fresh and saltwater marshes, water and sediment quality, erosion along the channel, threatened and endangered species impacts, and beneficial use of dredged materials. The meeting was attended by 20 persons, as well as representatives of the non-Federal sponsor (the Jefferson County Waterway and Navigation District or SNND) and USACE.

The meeting was conducted by Dr. Lloyd Saunders, Chief of Planning, Environmental, and Regulatory Division of the Galveston District. Paul Beard, Chairman of SNND, gave the welcoming address. Dr. Lloyd Saunders explained the purpose and procedures of the meeting and introduced the speakers. Tom Jackson, General Manager of SNND, presented an overview of the development of the Sabine-Neches Waterway and explained the navigation needs that gave rise to the feasibility study. Lizette Richardson, Project Manager with the Galveston District, presented an overview of the study process, including the way in which the study is

responding to issues raised in the May 2000 public meeting. Janelle Stokes, Environmental Lead with the Galveston District, explained the Draft EIS as a component of the feasibility study and the ICT that was formed to promote effective teamwork on the EIS among state and federal agencies.

The meeting was then opened to comments from the public. The issues raised by the speakers that they would like to see addressed in the context of the EIS are as follows:

1. Consistency determination with the Louisiana Department of Natural Resources.
2. Coordination with the Louisiana Coastal Restoration program.
3. Coordinated planning with Calcasieu Ship Channel.
4. Greater consideration for Louisiana interests and concerns.
5. Increased participation of private sector on ICT.
6. Additional opportunities for the public to express opinions on the project.
7. Beneficial use of dredged materials for beach restoration.
8. Consideration of beneficial use recommendations from workshops.
9. Marsh preservation and restoration.
10. Shoreline and channel erosion.
11. Saltwater intrusion.
12. Potential for increased storm surges.
13. Impacts to endangered species.
14. Impacts to migrating birdlife.
15. Potential for pollution of water-bearing sands because of increased dredging.
16. Potential toxicity of dredged materials.
17. Effects of dredging on water quality and fisheries.
18. Loss of shallow-water habitat through dredged material disposal; effects of ocean dredged material disposal sites.
19. Expropriation of land in Louisiana for placement areas, particularly land suitable for economic development.
20. Potential for changes in state boundaries because of spoil disposal in Sabine Lake.
21. Consideration of project alternatives such as a pipeline to an offshore oil port.
22. Establishment of a lock at Sabine Pass to stop saltwater intrusion.
23. Effect of a lock at Sabine Pass on ingress and egress of estuarine species.
24. Restoration of access to Sabine Lighthouse.
25. Establishment of a collision control system on the channel.

The major concern of the participants was the potential for the project to further accelerate the decline of the marshes in Louisiana and the smallness of the population in the coastal area to speak for those marshes.

The meeting was adjourned at 8:05 p.m.

2.2.1.2 Public Meeting on May 29, 2002

John Gray Center Auditorium
855 E. Florida Ave, Beaumont, Texas
Commencing 7:00 pm

The purpose of the meeting was to inform the public about study progress and to solicit comments on environmental issues such as changes in salinity and circulation, changes in fresh and saltwater marshes, water and sediment quality, erosion along the channel, threatened and endangered species impacts, and beneficial use of dredged materials. The meeting was attended by 34 persons, as well as representatives of the SNND and USACE.

The meeting was conducted by Lloyd Saunders, Chief of Planning, Environmental, and Regulatory Division of the Galveston District. Paul Beard, Chairman of SNND, gave the welcoming address. Lloyd Saunders explained the purpose and procedures of the meeting and introduced the speakers. Tom Jackson, General Manager of SNND, presented an overview of the development of the Sabine-Neches Waterway and explained the navigation needs that gave rise to the feasibility study. Lizette Richardson, Project Manager with the Galveston District, presented an overview of the study process, including the way in which the study is responding to issues raised in the May 2000 public meeting. Janelle Stokes, Environmental Lead with the Galveston District, explained the Draft EIS as a component of the feasibility study and the ICT that was formed to promote effective teamwork on the Draft EIS among state and federal agencies.

The meeting was then opened to comments from the public. The issues raised by the speakers that they would like to see addressed in the context of the EIS are as follows:

1. Beneficial use of dredged materials to restore marsh.
2. Beneficial use of dredged materials to restore beaches.
3. Beneficial use of dredged materials to create bird islands in Sabine Lake.
4. Salinity intrusion, particularly into freshwater marshes.
5. Potential for increases in storm surges.
6. Potential contaminants in dredged materials.
7. Cumulative impacts of sediments, circulation, and salinity on marshes.
8. Erosion along the channel.
9. Effect of project on operating procedures for the saltwater barrier.
10. Decrease in marshes because of increased needs for placement areas.
11. Maintenance of remaining nursery areas in existing placement areas in Sabine Lake.
12. Establishment of a pipeline at Sabine Pass as an alternative to the project.

The major concern of the participants was the potential for the project to further accelerate the decline of the marshes.

The meeting was adjourned at 7:42 p.m.

2.2.2 Post-Meetings Comments

Several written statements were received by USACE in the month following the meetings. Additional issues that were not raised in the meetings include:

1. Potential effect of project on Jefferson County Drainage District No. 7 Hurricane Flood Protection System.
2. Effect of project on human populations, particularly downstream water supplies, air quality, water quality and quantity, wetlands and floodplains, hazardous materials and wastes, non-hazardous solid waste and other materials, noise, occupational health and safety, and land use and housing.
3. Cumulative impacts of all past, present, and proposed projects in the area in relation to the proposed project.
4. Harmful effects of "beneficial use" proposals, particularly the creation of islands in marine or brackish environments.
5. Consideration of mitigation costs in project feasibility assessment.
6. Effect of project on floodplain development.
7. Potential for increased tidal amplitudes.
8. Impacts to neo-tropicals, wading birds, waterfowl, terns, skimmers, brown pelicans, and sandpipers.
9. Impacts on 404B1 areas such as wildlife reserves, management areas, rookeries, wetlands, oyster reefs, mud flats, sandbars, and beaches.
10. Socioeconomic impacts on sport and commercial fisheries, hunting, crabbing, shrimping, tourism, oystering, and other recreational activities.
11. Determine dredging risks to sea turtles.
12. Elevate dredged material disposal areas above sea level and use plantings to create wildlife habitat.
13. Make dredged material disposal areas subject to public servitude.
14. Determine gulf shoreline impacts from possible changes in near-shore currents and wave patterns.
15. Impacts to paddle fish, sea turtles, oyster reefs, Western Sand Darter, and Western Hill Splitter Mussel.
16. Impacts to flora, particularly loss of wetlands from plant community changes.
17. Potential toxicity of dredged materials in beneficial use projects.
18. Potential for introduction of exotic species.
19. Increased national security costs from increased shipping traffic.

2.3 PUBLIC MEETING SUMMARIES

Two public meetings were held in late January 2010. The meetings were held in Beaumont, Texas, and Lake Charles, Louisiana. The meetings were noticed as "Notice of Public Meeting and Availability of Draft Environmental Impact Statement (EIS) for Sabine-Neches Waterway Proposed Channel Improvement Project, Draft Environmental Impact Statement for Texas Ocean Dredged Material Disposal Sites Designation and Draft General Conformity Determination" in local newspapers.

A notification mailer was mailed to all persons on the study mailing list. The mailing list contained a wide array of elected officials, environmental organizations, historic resource organizations, commercial groups, recreational groups, public bodies, fishermen, hunters, and landowners. Over 400 notices were sent out.

Additionally, letters of invitation were mailed and emailed to public officials.

2.3.1 Public Meeting on January 26, 2010

The Beaumont Civic Center
701 Main Street
Beaumont, Texas 77701

The purpose of the meeting was to inform the public about the release of the Draft EIS, Draft EIS for Ocean Dredged Material Disposal Sites Designation, and Draft General Conformity Determination, and solicit comments. The meeting was attended by 51 persons. The meeting was hosted by the non-Federal sponsor, the Sabine-Neches Navigation District (SNND) and the U.S. Army Corps of Engineers (USACE) Galveston District.

From 5:30-7:00 P.M., an informal open house was open to the public. Members of the public viewed displays and spoke with the USACE and PBS&J employees who were available at the display stations. There were four display stations:

1. Recommended Plan-Navigation Improvements
2. Alternatives Evaluated
3. Technical Studies
4. Environmental Impacts and Mitigation

All display materials were sourced from the Draft EIS and the Draft Feasibility Report.

The formal public meeting was conducted by Colonel David Weston, Commanding Officer of the Galveston District, and commenced at 7 P.M. Randall Reese, General Manager of SNND, made a brief introduction of SNND members present and then introduced Colonel Weston. Colonel Weston introduced USACE employees and provided a brief overview of the project and the study. Byron Williams, Project Manager with the Galveston District, explained the purpose and procedures of the meeting and introduced the speakers. Clayton Henderson, Assistant General Manager of SNND, presented an overview of the development of the Sabine-Neches Waterway and explained the navigation needs that gave rise to the feasibility study. Sheri Willey, Project Manager with the Galveston District, presented an overview of the study process. Janelle Stokes, Environmental Lead with the Galveston District, presented the environmental portion of the study.

The meeting was then opened to comments from the public. The issues that the speakers would like to see addressed in the context of the Draft EIS are as follows:

1. Potential impacts on pipeline operations and cost estimates for pipeline relocations

2. Request for an extension of the comment period to at least April 26, 2010
3. Request for an extension of the comment period for at least 120-days
4. Potential problems of proposed dredge sites and respective impacts on fisheries
5. Increased salinities and unnatural increased water flow in coastal marshes and wetlands and Sabine Lake, as well as the impacts on the proximate wildlife habitats
6. Increased marketability and accessibility for larger ship traffic and concurrent increased safety margins
7. Increased economic stimulation through job creation
8. Permitting issues for relocation or removal of existing pipelines

The major concerns of the participants were the environmental impacts (increased salinity) and pipeline relocation.

The meeting was adjourned at 8:07 P.M.

2.3.2 Public Meeting on January 27, 2010

The Lake Charles Civic Center
Jean Lafitte Room
900 Lakeshore Drive
Lake Charles, LA 70601

The purpose of the meeting was to inform the public about the release of the Draft EIS, Draft EIS for Ocean Dredged Material Disposal Sites Designation, and Draft General Conformity Determination, and solicit comments. The meeting was attended by 19 persons. The meeting was hosted by the non-Federal sponsor, the SNND and the USACE Galveston District.

From 5:30-7:00 P.M., an informal open house was open to the public. Members of the public viewed displays and spoke with the USACE and PBS&J employees who were available at the display stations. There were four display stations:

1. Recommended Plan-Navigation Improvements
2. Alternatives Evaluated
3. Technical Studies
4. Environmental Impacts and Mitigation

All display materials were sourced from the Draft EIS and the Draft Feasibility Report.
The formal public meeting was conducted by Colonel David Weston, Commanding Officer of the Galveston District, and commenced at 7 P.M. Randall Reese, General Manager of SNND, made a brief introduction of SNND members present and then introduced Colonel Weston. Colonel Weston introduced USACE employees and provided a brief overview of the project and the study. Byron Williams, Project Manager with the Galveston District, explained the purpose and procedures of the meeting and introduced the speakers. Clayton Henderson, Assistant General Manager of SNND, presented an overview of the development of the Sabine-Neches Waterway and explained the navigation needs that gave rise to the feasibility study. Sheri Willey, Project Manager with the Galveston District, presented an overview of the study process. Janelle

Stokes, Environmental Lead with the Galveston District, presented the environmental portion of the study.

The meeting was then opened to comments from the public. The issues that the speakers would like to see addressed in the context of the Draft EIS are as follows:

1. Formation of an ICT for the development of the final Beneficial Use sites and mitigation plan
2. Potential costs of relocating pipelines
3. Potential flooding impacts from storm events if the channel is deepened
4. More spoil used beneficially
5. Potential impacts of problems caused by deepening channels
6. Increased salability of the waterway
7. Compatibility with the world's largest LNG carriers

The major concerns of the participants were the effects of deepening the channel and pipeline relocation.

The meeting was adjourned at 8:00 P.M.

2.3.3 Pre-Meeting Comments

Written comments were received by the USACE in the months leading up to the release of the Draft EIS, Draft EIS for Ocean Dredged Material Disposal Sites Designation, and Draft General Conformity Determination.

1. Louisiana Department of Wildlife and Fisheries (LDWF) will not concur in plans to mitigate in Texas for wetland impacts occurring in Louisiana. Additional mitigation measures should be implemented to offset the current 318 AAHU deficiency.
2. New work material from the Sabine Pass Channel and Sabine Pass Jetty Channel should be used beneficially to create, restore, or nourish emergent marsh in the vicinity of the project.
3. No fill material shall be dredged from state-owned water bottoms in Louisiana without a license issued by LDWF.
4. Adverse impacts to the public oyster area in Sabine Lake from the mitigation areas, including any access channels, must be addressed.
5. Potential creation of hypoxic conditions in dredged water bottoms and increased shoreline erosion rates through increased wave energy or sinking of the shoreline to fill the excavated trench.
6. Further justification of the 'no change' determination for Further Without Project.
7. Commitment of the local sponsor and interagency coordination.
8. Potential negative impact on marine life in the dredge containment compartments used for the dredging in the deepening and widening of the waterways.
9. Identification of location for Natural Resources Conservation Services to evaluate the proposed areas as required by the Farmland Protection Policy Act
10. Potential economic impacts on coastal low-income communities

2.3.4 Post-Meeting Comments

Written comments were received by USACE in the month following the public meetings. They were received as emails, comment forms, and letters.

1. Placement of spoil in relation to jetties in Texas and Louisiana
2. Potential bias in the research because it was conducted by USACE. A nonaffiliated research team should be implemented
3. Need for the project
4. Any deepening or widening will make our waterway more competitive for business that uses larger ships and automatically adds additional safety margins for the existing shipping already present.
5. Potential impacts on pipeline operations, pipeline relocations, and the costs associated
6. Request of an extension of the comment period to April 10, 2010, at the earliest
7. Need for the project
8. Any deepening or widening will make our waterway more competitive for business that uses larger ships and automatically adds additional safety margins for the existing shipping already present.
9. Potential impacts of placement of spoil near the Sabine Jetties
10. Identification and location of the 42 pipelines that may require relocation
11. Potential costs of relocating pipelines and cost sharing between pipeline owners and project sponsor
12. Request of an extension of the comment period to no earlier than April 10, 2010
13. Potential relocation of pipelines and actual costs to a pipeline owner regarding relocation
14. Request of an extension of the comment period to May 10, 2010
15. Potential concerns about modeling for storm surges, bar channel deepening, salinity, the proposed mitigation for unavoidable impacts to wetland habitats, and the potential impacts to extant energy
16. Increased economic shipping efficiency
17. Recommended literature regarding geoarchaeology in the Sabine Lake area
18. Coordination request with pipeline owners and operators
19. The relocation of a significant number of pipelines must be preceded by a comprehensive and coordinated planning process regarding the relocation.
20. The project may impact pipeline operations in other ways besides relocation.
21. Request identification of the pipelines that will be impacted by the project, the owner of each such pipeline, and the costs for removing or relocating each such pipeline
22. Request for additional documents to understand the proposed project's impact on pipeline operations, including a projected timeline from when the relocations may actually be needed
23. Request confirmation of the cost-sharing requirement that half the pipeline relocation costs must be borne by the pipeline owner and the other half by the local sponsor of the project
24. Request a 60 day extension of the comment period
25. Potential costs, safety and environmental risks, and interruption of gas/diesel supplies, as a result of relocation and removal of pipelines

26. Deepening will potentially increase damage done by storm surges
27. The Draft EIS fails to provide: (1) the project's economic value to the State of Louisiana; (2) resolution to conflicting modeling results and how much marsh could/would be lost or adversely affected by the project due to higher salinity levels than projected; (3) full mitigation plan or compensation for projected losses of intertidal marsh in most of the Louisiana portion of the study area including Cameron Meadows; and (4) resolution to the conflict between navigation needs in Texas, the project's acknowledged detrimental impacts to Louisiana marshes, and ongoing publicly supported and funded coastal restoration efforts in Louisiana.
28. Request for the list of the 42 deep-draft utilities designated for relocation
29. Request for a cross-section where a 10-inch diameter hydrogen pipeline crosses the Neches River (292+00). Additionally requests the GPS coordinates of both existing Neches River centerline and the proposed Neches River centerline
30. Request for further description of the hydraulic pipeline dredge process

3.0 ENVIRONMENTAL RESTORATION / BENEFICIAL USE WORKSHOPS

3.1 PURPOSE

One of the purposes of the study is to maintain and restore the natural environment in the Study Area. A series of public workshops was held in late 2001 and early 2002 to secure suggestions for environmental restoration and beneficial uses of dredged material from interested organizations and individuals. This section will describe the procedures that were used to initiate and conduct the workshops and their outcome.

3.2 RESTORATION WORKGROUP

The ICT created a Restoration Workgroup (RW) to gather, evaluate, and recommend ideas for environmental restoration and beneficial use. At its first meeting in June 2001, the RW identified the brainstorming workshops used by the Beneficial Users Group (BUG) in the Houston-Galveston Navigation Project as the appropriate format for the SNWW Workshops.

The RW also identified a number of environmental organizations, historic resource organizations, commercial groups, and recreational groups in Texas and Louisiana that should be invited to participate in the workshop process and stipulated that this list should be expanded. A contact list was developed identifying the addresses and telephone numbers for many of these organizations. Recommendations were given on how various groups should be approached to achieve efficiency in the workshop process. Organizations were not to be mixed in the workshops in recognition of their differing goals and interests.

A draft letter was mailed to organizations which described the study: the purpose, procedures, and restrictions of the workshops, and what would be done with the workshop results. To insure adequate geographic coverage, workshop notifications appeared in newspapers in Baton Rouge and Lake Charles, Louisiana, and in Beaumont, Port Arthur, and Orange, Texas. A draft notice was prepared for newspaper and website use. A number of small communities in Texas and

Louisiana were identified for potential workshops if meetings with organizations did not produce adequate geographic coverage.

The workshops were intended to solicit suggestions for environmental restoration and beneficial use throughout the Study Area, producing recommendations that could be used in the SNWW feasibility planning process, but also providing a database of recommendations that could be used by other studies and organizations. Recommendations were later evaluated for economic and technical feasibility by the Habitat Evaluation Workgroup (HW).

3.3 CONSULTING FIRM

Gulf Engineers & Consultants, Inc. (GEC), a Baton Rouge consulting firm experienced in public involvement, USACE procedures, and water resources projects, was secured to organize and conduct the workshops. This was done because of the time-consuming nature of the effort and the short timeframe for completion. GEC secured the services of a local contact in Texas to avoid any possibility of perceived geographic bias. USACE control of contractor activities was secured through the establishment of a close working relationship between the Contracting Officer's Representative and GEC, through continuous reporting by GEC, and through attendance at all of the workshops by Galveston District personnel or their representatives.

3.4 PRELIMINARY ACTIVITIES

Preliminary efforts were devoted to document review, an internet search, attendance at a public meeting concerning the Bessie Heights Marsh, and a visit with the SNND. The principal documents reviewed were the plan of action designed by the Restoration Workgroup, the SNWW reconnaissance report, the scoping meeting minutes, the project study plan, correspondence that had been sent to the Galveston District in connection with the feasibility study, and Louisiana's *Coast 2050* report. An internet search was used to check information on the contact list, to identify additional potential participant organizations, and to identify local chapters. The search also produced information on how the two states were approaching coastal planning, on some of the significant issues, and on some of the specific proposals that had already been developed for coastal restoration. The Bessie Heights Marsh public meeting was attended because it was concerned with an environmental restoration project in the study area in Texas and in order to gain a sense of procedural difficulties that might be encountered in the workshops. The visit with the SNND resulted in an extensive tour of the study area's navigation and environmental features, including site visits to some of the existing dredged material disposal areas.

3.5 CONTACTS

The initial list of potentially interested parties prepared by the RW included 11 organizations in Texas and 5 in Louisiana. GEC added to this list five organizations and groups in Texas and six in Louisiana, all of which were approved for contact by the USACE. The final list contained a wide array of environmental organizations, historic resource organizations, commercial groups, recreational groups, public bodies, fishermen, hunters, and landowners.

The organizations were contacted by telephone in November. Telephone logs were kept of all contacts. The contacts were used to explain the nature of the workshops and the function of GEC in relation to the Galveston District and to determine whether the organization was interested in participating in the process and wanted more information in the form of a letter from the Galveston District. The response to the telephone contacts was highly favorable.

On receiving confirmation from an organization or group that it would like to have a workshop, information on date, time, place, and composition was transmitted by e-mail from GEC to USACE, which transmitted the information to the Restoration Workgroup members.

3.6 NEWSPAPER NOTICES

The RW identified the Beaumont Enterprise, Orange Leader, Port Arthur News, Lake Charles American Free Press, and Baton Rouge Advocate as daily newspapers in which public notices of the workshops should be placed. GEC identified the weekly *Beaumont Examiner* as an additional suitable placement medium. The draft workshop notice that had been prepared by the Restoration Workgroup was placed in these newspapers during the week of November 12, 2001 (one day in the *Baton Rouge Advocate*, two days in the *Beaumont Examiner*, and three days in the others). During its November 16, 2001 meeting, the RW indicated that the notice should also appear in the newspaper of record for Cameron Parish (the *Cameron Pilot*), which was done during the week of November 19, 2001 (3 days). The notices achieved the objective of giving everyone an opportunity to participate in the process.

3.7 WORKSHOP ORGANIZATION AND PROCEDURES

Most of the workshops were organized by the responding organizations or groups; that is, GEC did not need to call a number of people to establish attendance at most of the workshops. Most of the workshops were held in conjunction with regular organizational meetings. The Galveston District prepared electronic files of recent aerial photographs of the study area, a constructed hardcopy map showing the study area boundaries and the channel, Mylar-covered hardcopy older topographic maps of the east and west portions of the study area, and four Mylar-covered hardcopy maps of recent aerial photographs of the immediate vicinity of the channel. Suggestions were numbered, beginning with one at the first workshop and continuing sequentially through the last, to avoid the difficulties that participants would have in recording large numbers on the Mylar-covered maps. The suggestions were later compiled by GEC into one master list.

Suggestions were hand recorded and the locations of suggestions were recorded on the Mylar-covered hardcopy maps, of which the two topographic maps proved most useful (with the west portion used in Texas meetings and the east portion used in Louisiana meetings). The electronic maps were used in the workshops to provide greater clarification for specific suggestions and their locations when needed. Tape recorders were not used because of the emphasis on anonymity of suggestions.

In addition to the GEC facilitator, all of the workshops were attended by at least one USACE representative, almost all were attended by at least one RW representative, and some were

attended by the SNND. At each workshop, GEC gave a brief presentation on the project, the purpose of the workshop, how the workshop results would be used, and the ground rules. It was stressed that the workshop was not for expressing opinions on the merits of the project, that the suggestions made by the workshop participants could refer to any place in the study area, that the suggestions did not need to be limited to problems and opportunities related to the SNWW project, that the suggestions should not be limited by concerns of technical or economic feasibility, that all suggestions would remain anonymous with respect to the person making the suggestion and the meeting at which the suggestion was made, and that the suggestions would be used to create a database that would be used in conjunction with the project but also by a wide variety of agencies, organizations, and groups.

3.8 WORKSHOP RESULTS

Sixteen workshops were held, attended by a total of 168 persons who participated in the making suggestions. A number of organizations declined to participate; the major reason for nonparticipation in the process was insufficient interest on the part of organization members. Of the 16 workshops, 10 were held in Texas and six in Louisiana. One meeting in Texas and one in Louisiana was attended by participants from both states. The discrepancy between the number of meetings in Texas and Louisiana was the result of organization availability and response. The total number of Louisiana participants was actually about the same as the number of Texas participants.

The participants produced 244 suggestions, which were concerned with marsh restoration, beach and dune restoration, chenier restoration, hydrologic restoration, salinity control, erosion control, island construction, land restoration and development, road restoration, recreation and cultural development, use of sediment sources, use of placement areas, and nonstructural measures. There were a number of repeated suggestions, which provide some idea of the preference for various proposals. The 244 suggestions, listed below, are presented in no particular order. Specific locations related to each suggestion are labeled with the suggestion number on figures 1–3.

1. Deposit dredged materials in open water areas within the marshes (affected by subsidence, erosion, and saltwater intrusion) at Texas Point NWR.
2. Deposit dredged materials at Lafitte's Landing 1 and 2 (south end of Pleasure Island, lakeside, along shoreline and by marina) to provide shoreline erosion control and wetland creation.

3. Deposit dredged materials at Pleasure Island Marina for shoreline erosion control and marsh creation.
4. Construct a salinity control structure at the Keith Lake Fish Pass/SNCC intersection to reduce saltwater intrusion while allowing for unhindered navigation and marine organism ingress/egress.
5. Construct a system (depending on hydrologic model) of berms or levees (terraces) north of Pleasure Island in the gap and restore the island along the Sabine-Neches Canal to protect the lake from higher salinities in the channels.

6. Restore the hydrologic connection (freshwater sheetflow) at Salt Bayou between the marshes north and south of the GIWW.
7. Construct a structure on the east part of Salt Bayou to restore freshwater flow to marshes south of the GIWW.
8. Deposit dredged materials, particularly those with higher sand content, linearly along the shoreline from Texas Point NWR westward through McFaddin NWR.
9. Deposit dredged materials, particularly those with higher sand content, linearly along the shoreline east of the entrance channel.
10. Create gaps in both entrance channel jetties to increase sediment transport to Gulf shorelines.
11. Stabilize the shoreline on the east edge of Texas Point NWR at gaps in the jetty north of pilot station and repair the jetty.
12. Construct a two to six acre bird island or islands, at least five feet high with a sheltered lagoon, in the north part of Sabine Lake near Sidney Island at least one mile offshore.
13. Establish salinity controls, including the restoration of historic flow volumes, in Texas Bayou and associated channels connecting to the SNWW on Texas Point NWR through such things as low-level rock weirs, plugging man-made channels, water control structures, and/or other channel modifications.
14. Deposit dredged materials in open water areas and degraded marshes in the east part of the Salt Bayou watershed north and south of Keith Lake.
15. Stabilize the shoreline in any reaches of the GIWW projected to have increased salinities as a result of the project.
16. Establish erosion control on the Taylor Bayou outfall canal shoreline, primarily on the south bank.
17. Stabilize the banks of the GIWW in Louisiana, particularly the south bank, because the north bank has been largely stabilized through two coastal restoration projects.
18. Protect the cypress swamp area south of the Neches River Saltwater Barrier from possible excessive salinities by installing structures, terraces, or other hydrologic components.
19. Use high sand content dredged materials from offshore, including existing disposal areas, for beach enhancement purposes.
20. Implement the East Sabine Lake Hydrologic Restoration Project to protect approximately 35,000 acres of brackish to intermediate marsh in the west part of the Sabine NWR and adjacent lands from elevated salinities by such things as water control structures at major bayous and canals and earthern terraces in existing shallow-water areas.
21. Construct a gate on the Sabine Pass Channel or a sill offshore to establish hydrologic control.
22. Restore the interior hydrology of Salt Bayou marshes south of the GIWW on TPWD land.
23. Construct a low-level rock weir or similar structure at the causeway to prevent excessive salinities from entering the lake.
24. Construct salinity controls in the brackish marsh regions east of the intersection of Lighthouse Bayou and the Sabine Pass Channel.

25. Deposit dredged materials from the SNWW in large, shallow, open-water areas in the west part of the Sabine NWR north and south of the Willow Bayou Canal and in the Greens Lake area.
26. Deposit dredged materials from the SNWW on the east shoreline of Sabine Lake at the Sabine NWR and adjacent lands.
27. Deposit dredged materials from the SNWW in the open-water areas of the Greens Lake area to create marshes.
28. Establish salinity control between the GIWW and the Sabine River to protect the Louisiana side.
29. Establish salinity control west of the Hwy. 87 bridge and the GIWW to protect the Texas side.
30. Use new work materials one-time offshore that would degrade to feeder berms.
31. Establish topographic relief offshore.
32. Establish nearshore feeder berms for shoreline protection.
33. Protect and stabilize the Middle Marsh Drain Ditch.
34. Restore the saltwater guard lock at the north end of Pleasure Island.
35. Establish salinity control at the mouth of Cow Bayou.
36. Establish salinity control at the mouth of Adams Bayou.
37. Establish salinity control on the Old Ferry Road Borrow Ditch.
38. Establish salinity control at Old River Bayou.
39. Create terraces in the Entergy Power Plant Marsh.
40. Isolate the Entergy outfall canal by recreating the historic canal berms.
41. Use dredged materials to create terraces and mounds and backfill canals in the Bessie Heights Marsh.
42. Restore the natural hydrology of the Bessie Heights Marsh by restoring the natural bayou and closing the two canals.
43. Divert some of the stormflow in Anderson Gully into the Bessie Heights Marsh.
44. Restore the cypress swamps in the Rose City Oilfield through hydrologic restoration, salinity control, and beneficial use of dredged materials.
45. Plug the Hwy. 87 borrow ditch to restore flows to Nig Bayou.
46. Protect the shoreline on the north side of Old River Cove.
47. Use dredged materials to create mounds and terraces in Old River Cove.
48. Use dredged materials in the Old River Unit of the Lower Neches River WMA.
49. Use dredged materials in the open-water areas of the Burton Canal Marsh east of the Sabine River and the Burton Canal.
50. Use dredged materials in the open-water areas of the marsh east of Phoenix Lake.
51. Protect and restore the north shore of Keith Lake.
52. Construct a structure in the Sabine River at Orange to protect the cypress-tupelo swamps upstream if Sabine Compact withdrawals are implemented.
53. Use dredged materials to create a bird island north of the causeway.
54. Use dredged materials to restore marsh elevations in the interior of the Salt Bayou Marsh south of the GIWW.
55. Divert the Neches River through the Bessie Heights Marsh into Sabine Lake by leveeing the channel.
56. Create a substrate for oysters in south Sabine Lake to restrict salinity and flow.

57. Construct a navigation lock at Sabine Pass, which would resolve many of the problems, particularly saltwater intrusion, in the Sabine Lake area.
58. Construct a low-level rock weir constriction at the mouth of Sabine Lake at the causeway to reduce saltwater intrusion.
59. Implement the East Sabine Lake Hydrologic Restoration Project (a CWPPRA project) to provide salinity control on the east shore of Sabine Lake.
60. Implement the NRCS Public Law 566 rock weirs along the length of Black Bayou.
61. Construct a salinity control structure at the mouth of Black Bayou.
62. Use dredged materials between Pleasure Island and Sabine Island to create an earthen barrier that would protect Sabine Lake from saltwater intrusion from the channels.
63. Use dredged materials to restore the marsh in the Old River Unit south of Bridge City.
64. Remove Placement Area 11 at the north end of Pleasure Island to restore the estuarine bottom and reestablish public access to state waterbodies.
65. Remove Placement Area 8 at the south end of Pleasure Island to restore the estuarine bottom and reestablish public access to state waterbodies.
66. Use dredged materials to restore the marshes north and south of Keith Lake.
67. Use dredged materials to restore the marshes in the Greens Bayou area.
68. Use dredged materials to restore the marshes in the Willow Bayou area.
69. Establish an earthen barrier with water control structures along the entire east edge of Sabine Lake to protect the marshes from salinity intrusion and wave action.
70. Use dredged materials to restore the marshes north of Lighthouse Bayou.
71. Construct a structure at the mouth of Lighthouse Bayou to reduce salinity intrusion.
72. Use dredged materials to restore the marshes south of Perry Ridge.
73. Provide greater opportunities for fishing (for example, piers) to compensate for the decline of boater access to Sabine Lake from Louisiana that has been brought about by hydrologic restoration projects.
74. Stabilize the shoreline on the east side of Sabine Lake using boudin bags (geotextile tubes filled with dredged materials).
75. Use dredged materials to restore the marshes northwest of the Black Bayou Oil and Gas Field.
76. Maintain Sabine River freshwater flows into Sabine Lake in keeping with the Coast 2050 strategy.
77. Establish a navigation lock on the GIWW at Gum Cove Ridge to reduce saltwater intrusion to the east.
78. Use dredged materials to enhance the existing marsh strip and refurbish the deteriorated rock barriers on the south side of the GIWW in the Gum Cove Unit 13 area.
79. Use dredged materials to restore the marshes and establish a bird island south of the GIWW in the Gum Cove Unit 13 area.
80. Provide shoreline protection and hydrologic restoration for the fresh marsh east of the Sabine River and between the GIWW on the south and the Sabine Island WMA on the north.
81. Create terraces and use dredged materials to restore marshes between Perry Ridge and the Sabine River.

82. Protect the marshes between the Sabine NWR and Sabine Pass by protecting the shoreline of Sabine Lake and establishing salinity controls on Madame Johnsons Bayou, Forge Bayou, Greens Bayou, and Johnsons Bayou in keeping with the East Sabine Lake Hydrologic Restoration Project.
83. Use dredged materials to restore marsh in all open-water areas east of Sabine Lake where it is feasible to pump them, and construct terraces to restore marsh in all open-water areas east of Sabine Lake where it is not feasible to pump dredged materials (note: not location specific).
84. Use dredged materials and construct terraces in the open-water areas of the Black Bayou Cutoff Canal area.
85. Restore the hydrology and prevent saltwater intrusion at the oil field ditch and lateral ditches running west from the Black Bayou Cutoff Canal.
86. Establish a state park in the area east of Lighthouse Bayou and south of Hwy. 82 (contingent on private property donation and not necessarily including the lighthouse).
87. Use dredged materials to restore eroded beaches in the vicinity of the 15-mile marker from the Louisiana line (that is, in the Dunn Beach and Martin Beach areas).
88. Construct an earthen barrier on the east bank of the Sabine River from the GIWW to Sabine Island to eliminate saltwater intrusion.
89. Use dredged materials to restore the marshes in the area north of the GIWW and west of the Gray and Vinton drainage canals.
90. Use one-time placement of dredged materials in various areas to create coastal forest and chenier habitat (note: not location specific).
91. Use dredged materials to create cheniers on the high marsh from Louisiana Point to Holly Beach.
92. Use dredged materials to restore marshes in the Bessie Heights Marsh area.
93. Provide erosion control along the channel on the north portion of Pleasure Island.
94. Provide erosion control along the channel on the extreme south portion of Pleasure Island.
95. Use dredged materials to restore the north end of Pleasure Island where Sabine Lake is breaking through.
96. Use dredged materials to restore the southern tip of the peninsula north of the northern tip of Pleasure Island.
97. Provide erosion control using concrete revetment on the west side of the Port Arthur Canal across from Placement Area 11 in the vicinity of the vessel repair facility.
98. Use dredged materials to close the gap between the channel and Sabine Lake north of Pleasure Island.
99. Use dredged materials to close the gaps between the islands at the north end of Sabine Lake.
100. Elevate Hwy. 87 with dredged materials near Sabine Pass.
101. Provide erosion control along the channel on the south portion of Pleasure Island in the vicinity of Placement Area 8.
102. Use dredged materials to restore the marsh on the south end of Humble Island.
103. Use dredged materials to restore the marsh on the south side of the GIWW below Taylor Bayou.
104. Use dredged materials to restore the marshes north of the GIWW in Louisiana.

105. Restore access to the Sabine Lighthouse and stop erosion in the immediate area.
106. Use dredged materials to build developable land on the north side of the Neches River from Beaumont downstream.
107. Use dredged materials to build up the area near Hwy. 82 and the causeway so that a bridge can be built over the channel directly linking Hwy. 82 and Hwy. 87.
108. Use dredged materials to restore the eroding beach in the vicinity of Peveto Beach.
109. Breach the levees and use dredged materials to restore the manmade lakes within Sabine NWR to their original marsh condition.
110. Use dredged materials to fill in oilfield service canals wherever they are contributing to salinity intrusion into Louisiana's marshes (note: not location specific).
111. Use dredged materials to build islands offshore on both sides of the channel for migratory birds that would simulate the function of a natural delta.
112. Use dredged materials to build islands for migratory birds in Sabine Lake far enough from shore to protect from predators.
113. Use dredged materials to construct cheniers in Louisiana and Texas, planting them with oaks and other vegetation that occur on natural cheniers.
114. Use dredged materials to restore cheniers in Louisiana and Texas (perhaps by removing the existing top layer of sand and shell, depositing dredged materials, and they relaying the sand and shell on top), with easements to protect them for bird use.
115. Use dredged materials to buffer cheniers in Louisiana and Texas that are in danger of disappearing.
116. After placing dredged materials in new placement areas, shape and contour the areas so that they appear natural, and plant native vegetation to support wildlife (note: not location specific).
117. Shape and contour existing dredged material placement areas so that they appear natural, and plant native vegetation to support wildlife (note: not location specific).
118. Construct recreational amenities, particularly primitive campgrounds, on cheniers and on placement areas that have been filled (note: not location specific).
119. Construct a lock at Sabine Pass to prevent saltwater intrusion into Sabine Lake.
120. Construct a bulkhead on the channel side of Pleasure Island from the intersection of the SNWW and the GIWW to the north end of the island.
121. Mine dredged materials from Placement Area 8 to build up the 43 acres at the south end of Pleasure Island owned by the port and then replace with new dredged materials.
122. Preserve the productive shallow-water areas of the two placement areas on Pleasure Island by depositing dredged materials on top of the existing levees, particularly near the channel, and develop the land for recreational use.
123. Use dredged materials to build up the land on the southern portion of Pleasure Island from Placement Area 8 to the south end of the island on the lakeside and bulkhead the channel side.
124. Provide erosion control for all of Pleasure Island on the channel side.
125. Use dredged materials to rebuild the approximately one-quarter mile of land at the north end of Pleasure Island that has completely eroded away and protect it with erosion control structures.

126. Use dredged materials to build up the land on Pleasure Island directly across from the Taft Avenue Extension to preserve its potential as a location for a second bridge to the island.
127. Construct a new salinity control structure on the north side of the GIWW at the point where Salt Bayou intersects the GIWW.
128. Use dredged materials to restore the beach and create dunes south of McFaddin NWR between Sea Rim State Park and High Island.
129. Use dredged materials to rebuild the island at the McFadden Bend Cutoff (Reserve Fleet area across from Sun Terminal) that was lost to erosion.
130. Use dredged materials to restore Bessie Heights Marsh and construct salinity control structures to protect the marsh.
131. Construct a salinity control structure on the Keith Lake Fish Pass.
132. Limit salinity intrusion into Keith Lake by using dredged materials to fill in the cuts that have been made into the lake on its north side.
133. Build vegetated dunes and institute ongoing erosion control and beach nourishment for the eroded beach in the vicinity of McFaddin NWR.
134. Construct a structure at the channel end of the Pilot Station Cut to limit saltwater intrusion.
135. Construct a structure at the channel end of the Texas Bayou Cut to limit saltwater intrusion.
136. Construct a structure at Keith Lake Fish Pass to limit saltwater intrusion.
137. Investigate the potential for mining existing placement areas for high-quality dredged materials that can be used in various restoration projects (note: not location specific).
138. Use maintenance dredging materials from the GIWW to restore the eroded beach in the vicinity of McFaddin NWR.
139. Use dredged materials from the lower portion of Taylor Bayou for marsh restoration and beach nourishment.
140. Mine the high-quality sediments from behind the dam at Steinhagen Lake (outside of the study area) for use in marsh restoration and beach nourishment projects in the study area.
141. Modify the jetty system to restore the longshore current and deposition of materials along the beach west of the channel.
142. Use the high-quality materials from offshore channel dredging to restore the eroded beach in the vicinity of McFaddin NWR.
143. The beach in the vicinity of McFaddin NWR is being eroded because the longshore current is deflected outward by the jetties and then turns back sharply toward the beach. Build a longshore parallel jetty system to minimize the assault on the beach by the inwardly turning longshore current.
144. Because it is of higher quality, use dredged materials from the GIWW for beach restoration west of the channel rather than for other purposes.
145. Reinforce the shoreline all along the channel to reduce erosion and the need for maintenance dredging.
146. Implement the Drainage District 6 proposed Taylor Bayou Diversion Channel project west of the present diversion channel and from Taylor Bayou to the GIWW to alleviate flooding.

147. Use dredged materials to restore the eroding beach south of McFaddin NWR to protect Hwy. 87.
148. Pump sand from offshore to restore the eroding beach south of McFaddin NWR to protect Hwy. 87.
149. Restore the Rose City Marsh in keeping with the plan of action submitted by TNRCC, which involves breaking the open-water areas into cells with levees and restoring one cell at a time with dredged materials.
150. Preserve the oxbow above the Rose City Marsh, with possible donation or easement and recreation link with mainland.
151. Close the breaks into the marsh on the southeast bank of Keith Lake that are contributing to saltwater intrusion.
152. Resolve the problem of too much fresh water in the Blind Lake area where the TPWD levee and the GIWW are interrupting sheetflow, perhaps by constructing a drainage canal to the GIWW.
153. Reduce saltwater intrusion into Bessie Heights Marsh by separating the marsh from the Neches River by building a levee along the riverbank and rebuilding the levee on the GSU canal.
154. Reduce saltwater intrusion by building a levee across the old dredged material placement area to Bird Island Bayou.
155. Restore the Mires Bayou area by building levees to close the oxbow at both ends, which would limit saltwater intrusion.
156. Protect the Texas Point marshes by constructing a longshore rock jetty and placing dredged materials along the beach behind the jetty.
157. Use dredged materials to restore marshes throughout the study area that have been converted to open-water areas, as seen by comparing historic to contemporary maps (note: not location specific).
158. Constrict the channel to about 250 feet at Sabine Pass to reduce saltwater intrusion into Sabine Lake.
159. Construct a lock at Sabine Pass to eliminate saltwater intrusion into Sabine Lake.
160. Deposit dredged materials southeast of the lighthouse to create a raised area or dunes that would protect the lighthouse from storm surges and assist in erosion control.
161. Place dredged materials southeast of the lighthouse along the mudflats and slightly inshore at an elevation of about three feet to protect the lighthouse.
162. Control coastal erosion west of Johnsons Bayou by the placement of materials from offshore channel dredging.
163. Use every opportunity presented by the present and proposed projects to preserve the lighthouse for future generations (note: not site or recommendation specific).
164. Construct a saltwater barrier at the mouth of Lighthouse Bayou to limit saltwater intrusion into the marsh.
165. Construct an emergent or submerged rock barrier north of the causeway to limit saltwater intrusion into Sabine Lake.
166. Build a levee or separate salinity control structures from Blue Buck Point east to limit saltwater intrusion into the marshes through the numerous small ditches and oilfield canals.

167. Construct an erosion control structure and rebuild the land with dredged materials in the eroding cove on the east side of the lake and north of the causeway.
168. Construct an erosion control structure and rebuild the land with dredged materials in the eroding cove on the east side of the lake and south of the causeway.
169. Construct a lock at the mouth of the channel to eliminate saltwater intrusion into Sabine Lake.
170. Build placement areas to a reasonable level, then move on to other areas, allowing the old placement areas to vegetate or be used for development (note: not location specific).
171. Use dredged materials to restore the eroding beaches from Texas Point to High Island.
172. Use dredged materials for dune restoration south of Hwy. 87 if it is ever rebuilt.
173. Use dredged materials for marsh restoration in the Bessie Heights Marsh.
174. Use dredged materials for marsh restoration in Keith Lake wherever open-water areas are emerging.
175. Use dredged materials for marsh restoration in the Salt Bayou watershed north and south of the GIWW.
176. Use dredged materials to build up low-lying land suitable for development that is not marshland (note: not location specific).
177. Because most dredged materials contain pollutants, continue to put them in placement areas rather than using them for ostensibly beneficial purposes (note: not location specific).
178. Any beach-quality sand that is available should be used to restore the eroding beaches from Texas Point to High Island.
179. Use dredged materials to construct a road to the Sabine Lighthouse.
180. Use dredged materials to restore the beaches east of the channel.
181. Construct a lock at the mouth of the channel to eliminate saltwater intrusion into Sabine Lake.
182. Construct a revetment or levee and fill in back with dredged materials to restore the eroding cove at the mouth of Lighthouse Bayou.
183. Remove Point Hunt Island in the channel to allow a straight passage for vessels so that the land to the east is not subjected to collisions.
184. Use dredged materials to fill in the open-water areas in Sabine NWR.
185. Use dredged materials to further build up the potentially developable land on the east side of the channel and investigate ways to modify present restrictions on development.
186. Constrict the channel at Sabine Pass to reduce saltwater intrusion into Sabine Lake.
187. Construct a weir in the vicinity of the causeway to reduce saltwater intrusion into Sabine Lake.
188. Construct a series of small islands between the north end of Pleasure Island and Sabine Island to reduce saltwater intrusion into Sabine Lake from the channel.
189. Use the higher-quality dredged materials obtained through offshore dredging for marsh and beach restoration.
190. Use dredged materials to restore the shoreline and Hwy. 87 between Texas Point and High Island.

191. Continue to insure freshwater inflow into Sabine Lake from the Neches and Sabine rivers (note: not location specific).
192. Construct a public boat launch on the Louisiana side of the causeway at the site of the present deteriorated boat ramp to provide access to Sabine Lake from Louisiana.
193. Rehabilitate the old boat launch at the burned out bridge on old Hwy. 90.
194. Rebuild the deteriorating islands between the north end of Pleasure Island and Sabine Island to reduce saltwater intrusion into Sabine Lake from the channel.
195. Construct substrates for oysters in Sabine Lake to renew oyster production.
196. Ensure that future restoration and beneficial use projects comply with Louisiana mandates and Louisiana's Coast 2050 plan (note: not location specific).
197. Stabilize the levees of the GIWW throughout its entire extent in the Louisiana portion of the study area.
198. Restore the levees on the Vinton Drainage Canal.
199. Use dredged materials to restore road access to the Sabine Lighthouse.
200. Construct a lock in Sabine Pass to eliminate saltwater intrusion into Sabine Lake.
201. Use dredged materials for erosion control on both sides of the channel from Sabine Pass to the north end of Pleasure Island.
202. Stabilize the shoreline of the entire Neches River channel.
203. Stabilize the lake shoreline and replenish adjacent marshes in the area from Blue Buck Point to Johnsons Bayou, leaving the bayous open.
204. Construct a structure within the causeway to slow tidal flows in and out of the south end of Sabine Lake.
205. Construct a lock at the mouth of the Sabine River to regulate freshwater flows into Sabine Lake from Toledo Bend Reservoir.
206. If the SNWW project is approved, develop a joint Louisiana-Texas plan to deal with any unforeseen problems that might occur (note: not location specific).
207. Use dredged materials for beach restoration from Texas Point to High Island.
208. Construct a fishing pier in connection with the improved boat launch on the Louisiana side of the causeway.
209. Construct a large parking area in connection with the improved boat launch on the Louisiana side of the causeway.
210. Construct a structure at the mouth of Lighthouse Bayou to limit saltwater intrusion.
211. Use dredged materials to restore the beach from Louisiana Point to Constance Beach.
212. Use dredged materials to reinforce the roadbed of Hwy. 82 along the Louisiana coast.
213. Use dredged materials to enhance the beach at Louisiana Point.
214. Use dredged materials to restore Fina Anchorage Island created by the cutoff in the Neches River.
215. Use dredged materials for chenier restoration in Louisiana, including planting of native vegetation to provide habitat for neotropical migratory songbirds.
216. Use dredged materials to restore deteriorating marshes in the chenier plain.
217. Use dredged materials to construct new cheniers in Louisiana.
218. Establish salinity control on the bayous and canals entering Sabine Lake from Louisiana.
219. Use dredged materials to restore cheniers on the Texas side of the channel.

220. Use dredged materials to restore beaches and dunes along the Louisiana coast to provide bird habitat.
221. Move Hwy. 87 one thousand feet inland from the beach from Texas Point to High Island, build a dune structure, and fill in the area with dredged materials to slow erosion.
222. Stockpile dredged materials and mine them for beneficial use when needed (note: not location specific).
223. Use dredged materials (sand and mud) to restore the coastline west of Texas Point.
224. Use dredged materials to restore the marshes north of Keith Lake.
225. Restore the marshes from Bessie Heights Marsh to Rose City Marsh as one marsh system.
226. Fill manmade ditches within the Texas marshes (Sea Rim Pintail Flats Marsh, Lower Neches Marsh, Bessie Heights Marsh, Texas Point Marsh, McFaddin Marsh, Meyers Bayou Marsh, etc.) to restore the historic hydrology and salinity (note: not location specific).
227. Construct a saltwater barrier at Sabine Pass.
228. Construct water control structures at the mouth of every canal and bayou in Texas that connects with the channel (Pilot Station, Texas Bayou, Keith Lake Fish Pass, Bessie Heights, Lower Neches, etc.) to restore the historic hydrology, and use dredged materials to fill the canals after water control is accomplished (note: not location specific).
229. Use dredged materials to raise Hwy. 87 from the GIWW bridge south to Sabine Pass.
230. Reconstruct Hwy. 87 from the GIWW bridge south to Sabine Pass to allow sheetflow under the road.
231. Use dredged materials to build up eroding areas on Pleasure Island while avoiding any damages to the lake.
232. Develop a comprehensive study of the best possible restoration of the marsh system from Bessie Heights Marsh to Rose City Marsh.
233. Transport dredged materials outside of the study area so that they can be more widely used, for example at Rollover Pass (note: not location specific).
234. Use dredged materials to create vegetated dunes and restore the beaches from Texas Point to High Island.
235. Mine existing placement areas for materials to build dunes and restore beaches along the Texas coast (note: not location specific).
236. Use dredged materials to build a barrier island from Texas Point to Rollover Pass.
237. After historic hydrology and salinity have been reestablished (as per 226 and 228) in Texas' degraded marshes (Sea Rim Pintail Flats Marsh, Lower Neches Marsh, Bessie Heights Marsh, Texas Point Marsh, McFaddin Marsh, Meyers Bayou Marsh, etc.), build land masses and islands, with coarse dredged sand used to establish bird grit sites (note: not location specific).
238. Use dredged materials to construct a bird island in Sabine Lake.
239. Use the higher-quality materials from offshore dredging for beach restoration.
240. Construct water control structures at the mouth of every canal and bayou in Texas that connects with the channel (Pilot Station, Texas Bayou, Keith Lake Fish Pass, Bessie Heights, Lower Neches, etc.) to restore the historic hydrology, and use

dredged materials to fill the canals after water control is accomplished (note: not location specific).

241. Use dredged materials to create vegetated dunes and restore the beaches from Texas Point to High Island.
242. Use dredged materials from the SNWW and from Entergy's canal dredging to restore the declining marshes on Entergy property.
243. Use dredged materials to levee Entergy's outflow canal to keep sediment out of the canal and to keep the flow of water from eroding the marsh.
244. Use dredged materials in any fashion that would keep saltwater from intruding into the marshes on Entergy property.

3.9 Post-Workshop Activities

After each workshop, suggestions were clarified on the basis of the various sets of notes that had been taken, were provided sequential numbers for each succeeding workshop, and were placed in the electronic database. The locations of suggestions on the hardcopy maps were assigned sequential numbers for each succeeding workshop, transferred to the electronic maps, and checked for precision in keeping with the suggestions. This information was e-mailed to the Galveston District. The Mylar overlays served as a permanent record of the suggestions from each workshop. Finally, the suggestions and their locations were organized electronically by category. The following maps show the 244 suggestions in terms of their categorical designations.

4.0 SNWW RIVER TRIPS

The SNWW study team members and resource agencies were given an introductory boat tour of the proposed project area on September 13, 2000. SNND Board Member Sonny Sherman provided a houseboat for the trip. Representatives from all ICT agencies were invited to travel down the SNWW from Beaumont to Sabine Pass. They were accompanied by USACE study team members who provided introductory information on the proposed project.

A boat trip from Beaumont to Sabine Pass down the SNWW was held for public news media on September 23, 2003. SNND Board Member Sonny Sherman provided a houseboat for the trip. Media from the entire Study Area were invited to travel and observe the channel, and speak with team members, resource agencies, and the SNND. The objective of these trips was to generate public interest in the project and encourage greater participation in public meetings.

5.0 TEXAS HABITAT PROTECTION ADVISORY PANEL MEETINGS

Status updates on the preparation of the Draft EIS were presented at Texas Habitat Protection Advisory Panel (AP) Meetings on December 9, 2003, and December 6, 2005. The AP was briefed on alternatives, technical workgroup activities, and H-S and WVA modeling procedures and results. The Preferred Alternative (48x700 ft project) was presented to the AP on September 26, 2006. The AP is composed of persons from recreational and commercial fishing groups, conservation organizations, academia, and state and federal resource agencies who meet to

review and discuss fishery habitat issues. It is one of eight regional fishery management councils established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976.

6.0 SOUTHEAST TEXAS WATERWAY ADVISORY COUNCIL (SETWAC) MEETINGS

USACE representatives regularly attended SETWAC meetings to provide status updates of the project. SETWAC is a "harbor safety committee" established by the U.S. Coast Guard (USCG) in 1997. SETWAC is a public forum to facilitate discussion and exchange of views and advice among all stakeholders on a wide range of issues relevant to ports on the Sabine and Neches Rivers. Topics discussed at the meetings include, but are not limited to, communications, traffic management, anchorages, and other topics dealing with safety, efficiency, preservation, and improvement of the transit and usage of the Sabine-Neches Waterway System. Members of SETWAC include the USCG, USACE, the SNND, the Ports of Beaumont, Orange, Port Arthur and Sabine, public safety and emergency management agencies from surrounding local governments, commercial fishing associations, petrochemical plants and terminals along the SNWW, the Sabine Pilots Association, harbor tug companies, shipping agents and operating companies, and vessel repair companies.

7.0 LEADERSHIP OF SOUTHEAST TEXAS CLASS OF 2007 CONFERENCE

On January 25, 2007, representatives from USACE, SNND, the Sabine Pilots Association, and Bracewell and Giuliani provided updates regarding the proposed SNWW CIP to this conference in Orange, Texas. The central topic for the conference was the proposed CIP. USACE and SNND provided an overview and current status of the feasibility study and EIS.

8.0 SABINE PILOTS ASSOCIATION (SPA)

USACE and SNND met with members of the SPA several times throughout the preparation of the EIS. The purpose of the meetings was to obtain information on transit rules, transit times, and safety and other operational issues. Specific changes in depth and width, and specific navigational features such as turning basins and anchorages were discussed.

9.0 INDUSTRIAL USERS OF THE SNWW

USACE and SNND met with representatives from local industry several times throughout the course of this study. The meetings were held to identify specific needs of the industries in regard to use of the SNWW. Current and projected future needs were explored.

10.0 FUTURE PUBLIC INVOLVEMENT ACTIVITIES

Following completion of the Final Feasibility Report and the Final Environmental Impact Statement, additional public involvement activities will be initiated:

- Distribution to agencies and organizations for review and comment (see distribution list in FEIS Section 12.3);
- Presentation of the Preferred Alternative to local governments; and
- Publication of the FEIS Notice of Availability in the Federal Register, announcing the public comment period.

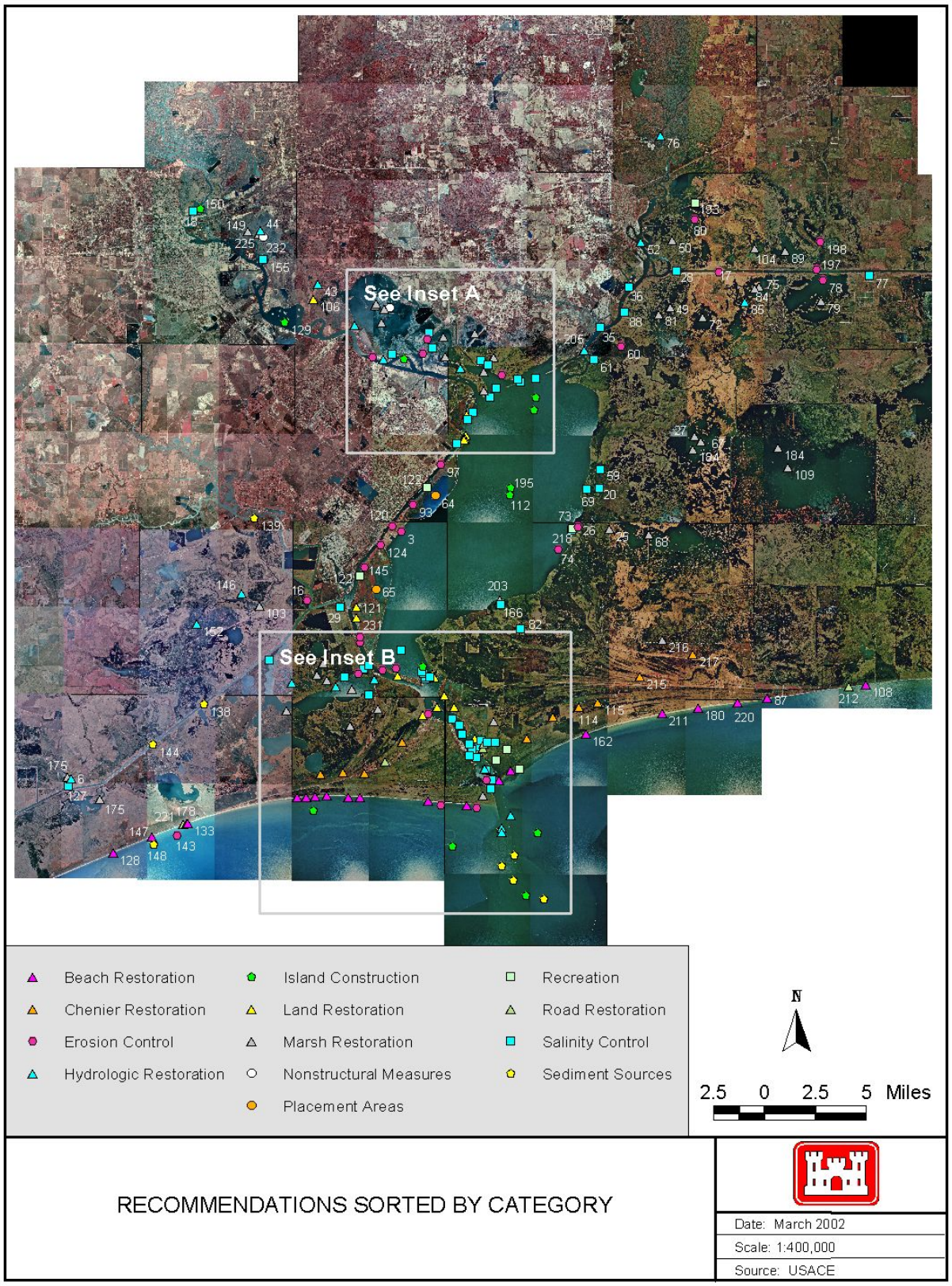

Figure 1: Recommendations Sorted by Category

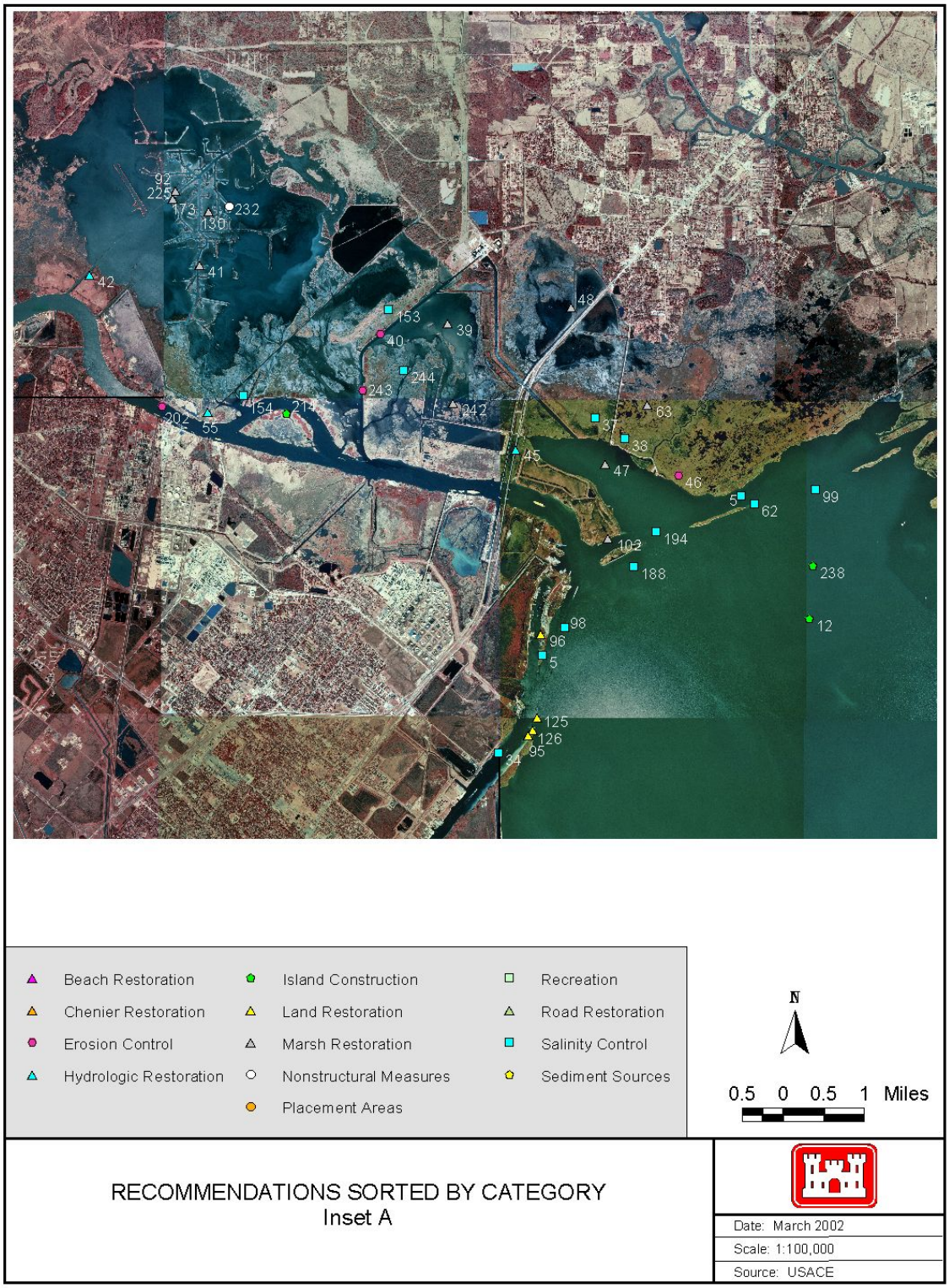

Figure 2: Recommendations Sorted by Category, Inset A

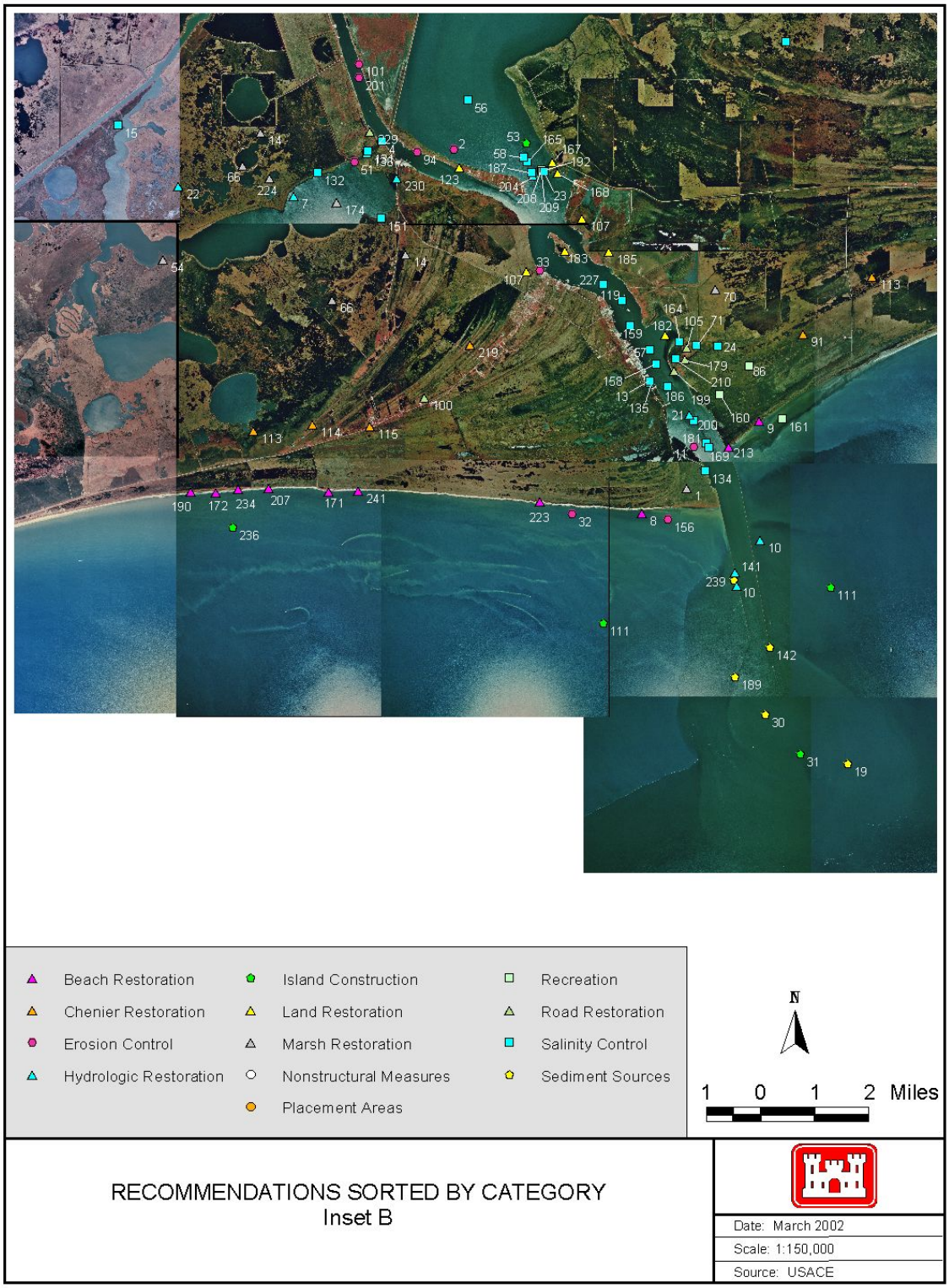

Figure 3: Recommendations Sorted by Category, Inset B

Appendix A1

Agency Coordination

8 May
DE MB
DD PO
DD 2RD
PE LS

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

May 5, 2000

Major Randy L. Turner, Deputy District Engineer
Department of the Army
Galveston District Corps of Engineers
P. O. Box 1229
Galveston, TX 77553-1229

Dear Major Turner:

I am writing in reference to the Notice of Studies and Initial Public Meeting for Sabine-Neches Waterway, Texas Feasibility Study. We are concerned about increases in saltwater and tidal intrusion into the swamps and fresh to intermediate marshes of the Calcasieu-Sabine Basin east of Sabine River and Sabine Lake that may result from this navigation project.

There are more than a hundred square miles of fragile coastal marsh and swamp in southwestern Louisiana that rely on freshwater from the Sabine River for their productivity. These marshes have already suffered catastrophic losses over the past 50 years due to hydrologic alterations and, as a result, there is a sizeable state and federal restoration effort underway to ensure that the remaining wetlands will continue to support renewable fish and wildlife resources for future generations. There are, in fact, a large number of coastal restoration projects that have been constructed or are in various stages of planning/implementation that would be affected by significant salinity changes in the Sabine estuary. Wetlands of the Calcasieu/Sabine estuary are already stressed by the well-documented effects of navigation channel-induced saltwater intrusion.

We expect that this feasibility study will include a thorough analysis of the environmental effects of the existing navigation project as well as the incremental effects of any proposed project modification. You are probably aware that ongoing water planning activities under Texas Senate Bill 1 are evaluating diversion of the Sabine River from or below Toledo Bend Reservoir. Reductions in Sabine River stream flow and increased saltwater intrusion may cause significant adverse impacts to the estuarine system in both states. It is critical that this feasibility study evaluate the potential cumulative impacts to the Louisiana and Texas coastal marsh ecosystem from these hydrologic alterations.

We are very interested in being involved in the planning and decision-making process for this study and await notice from the Galveston District as to how we can appropriately participate in the study's environmental assessment of the southwest Louisiana marshes. In the meantime, please send us a copy of the project Reconnaissance Study so that we can fully understand the scope of the project and the nature of the federal interest that has been identified as justifying further study. Please contact me at (225) 342-7308 should you have any questions or like to discuss this further.

Sincerely,

Bill Good

Bill Good, Ph.D.
Coastal Restoration Division Administrator

COASTAL RESTORATION DIVISION
P.O. Box 94396 · Baton Rouge, Louisiana 70804-9396 · Telephone (504) 342-7308 · Fax (504) 342-9417

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State of Louisiana

James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225) 765-2800

M.J. "Mike" Foster, Jr.
Governor

May 8, 2000

Major Randy L. Turner
Deputy District Engineer
Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Re: Notice of Studies and Initial Public Meeting for Sabine-Neches Waterway, Texas, Feasibility Study

Dear Major Turner:

The Louisiana Department of Wildlife and Fisheries is very interested in the above reference study and the impacts to the natural resources of Louisiana. We request that your agency keep us informed on the study and any meetings and/or field trips concerning this study.

This agency strongly supports the beneficial use of dredged material to restore wetlands within the Sabine River Basin. There are areas within Louisiana that we would suggest this dredged material be placed to restore some of the marsh lost.

Mr. Fred Dunham of my staff is assigned to this study and can be reached at (225) 765-2367, fax (225) 765-2452, or by e-mail dunham_fo@wlf.state.la.us.

Sincerely,

PE Bowman

Philip E. Bowman
Assistant Secretary

PEB:fod

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real, Suite #211
Houston, Texas 77058-3051
281/286-8282 / (FAX) 281/488-5882

June 20, 2000

Colonel Nicholas J. Buechler
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229
ATTN: Mr. Frank Garcia

Dear Colonel Buechler:

This is in response to Public Notice dated April 20, 2000 requesting comments on the feasibility phase of the Sabine-Neches Waterway (SNWW) Study. The SNWW connects the harbor facilities in Beaumont, Port Arthur, Orange, and Sabine Pass in Jefferson and Orange Counties, Texas, and Cameron and Calcasieu Parishes Louisiana with the Gulf of Mexico. This waterway also connects the Gulf Intracoastal Waterway (GIWW) in Calcasieu Parish, Louisiana to the GIWW in Jefferson County, Texas. Following are comments of the U.S. Fish and Wildlife Service , which have been coordinated with our Texas Chenier Plain and Louisiana Sabine National Wildlife Refuges and our Lafayette, Louisiana field office.

The Public Notice states that 3 alternatives being considered are channel deepening from the Gulf of Mexico to Beaumont, channel widening from Port Arthur to Beaumont, and using dredged material to enhance Bessie Heights and Rose City Marshes. Our comments are intended to provide the Corps with Service concerns regarding possible impacts to important native fish and wildlife habitats in the Sabine, Neches, and Calcasieu River Basins which could be affected by modifications to the SNWW.

Salinity intrusion into important wetland habitats --- The Service's main concern from any channel modifications are that increased salinity intrusion from an enlarged ship channel could affect freshwater and brackish wetland habitats already stressed by high salinity levels. These habitats include important freshwater wetlands at Taylor's Bayou, wetlands adjacent to the Gulf Intracoastal Waterway (GIWW) in Texas and Louisiana, cypress-tupelo wetland forests along the Neches River and north of the GIWW in Louisiana, large tracts of freshwater and brackish marsh east of Sabine Lake within Sabine National Wildlife Refuge, and marshes west of Sabine Lake at Lower Neches Wildlife Management Area (Texas Parks and Wildlife Department), and J.D. Murphree Wildlife Management Area.

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These habitats are some of the richest, in terms of productivity, diversity, and habitat value, in North America. Collectively, they provide important wintering habitat for over 2 million waterfowl annually and contribute hundreds of millions of dollars to the regional economy annually through recreational hunting and fishing, tourism, commercial fisheries, fur trapping, and outdoor recreation. These wetlands are today adversely impacted by elevated levels of salinity introduced through the SNWW and the Calcasieu Ship Channel, 40 miles to the east. Salinity intrusion from these two sources has, during the past 50 years, caused shifts in native wetland communities towards saline marsh, a less diverse marsh type. Recent studies by Lousisiana Department of Natural Resources have shown large amounts of marsh loss adjacent to manmade channels and canals throughout the area. This marsh loss and marsh alteration is presently causing millions of dollars in economic losses annually to the coastal counties of Jefferson and Orange and the parishes of Cameron and Calcasieu. As these wetlands provide habitat for some of our most valuable trust-mandated natural resources, the Service will not support any channel enlargement project which causes significant additional increases in salinity to adjacent inland marsh and swamp communities.

Therefore, the Service recommends that the Corps conduct three-dimensional hydrodynamic modeling studies to predict changes to salinity regimes, tidal amplitudes, hydroperiods, and marsh flooding durations within the lower Sabine and Neches River drainages from SNWW project modifications. The Service would like to participate in this modeling work group.

The Louisiana Department of Natural Resources (DNR) is presently contracting with Dr. Ehad Meselhe at the University of Louisiana at Lafayette for an H3D model to be used to predict similar changes in this region. There is available an extensive set of data on water salinities within these wetland habitats of concern, specifically in Sabine National Wildlife Refuge, McFaddin National Wildlife Refuge, Texas Point National Wildlife Refuge, J.D. Murphree Wildlife Management Area , Sabine Lake proper, Lake Bayou cypress swamp near Beaumont, Blue Elbow cypress swamp on the Sabine River, and Sabine Island Wildlife Management Area (Louisiana Department of Wildlife and Fisheries). Any model utilized can and should be able to be verified by accurately reproducing known climatic events within these or similar sites.

Additionally, the Service recommends that model iterations include a reasonable array of freshwater inflow scenarios reflecting historic extremes and include reasonable engineering and beneficial uses features designed to reduce predicted future and present salinity conditions. These should include: a navigational lock or gate near Sabine Pass, waterway restrictions at important salinity intrusion points such as the lower end of Sabine Lake, Keith Lake Channel, Pleasure Island boat pass, the GIWW west of the SNWW, the re-establishment of the Sabine Lake shoreline south of the GIWW, and the GIWW east of Sabine Lake. And, model scenarios should include a reasonably foreseeable array of scenarios predicting cumulative losses of Sabine River freshwater inflows caused by withdrawals under current Texas Senate Bill 1 (Texas Water Plan). Again, the Service would like to participate in the development of the model, its verification, and in analysis of its results throughout project planning.

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Beneficial uses features --- Additional beneficial uses features using project-generated dredged material to restore previously degraded or lost wetland habitat should be investigated in the event channel modifications can be designed so as to not cause increased salinity problems. Potential beneficial uses project sites include Bessie Heights Marsh, backdune marshes at Texas Point National Wildlife Refuge, beach nourishment at Holly Beach and Texas Point, marshes at McFaddin National Wildlife Refuge, and marshes within the Lower Neches and J.D. Murphree Wildlife Management Areas.

Impacts to Kemp's Ridley Sea Turtle --- Stranding records indicate the nearshore waters off Sabine Pass contain a seasonally large population of this most endangered sea turtle species. Project designs will have to include adequate monitoring and protection mechanisms to insure turtles are not killed during channel dredging within the jetty channel reach.

Thank you for the opportunity to provide input during this early stage of project planning. We look forward to working with your staff closely during the coming months to insure that our important native coastal fish and wildlife resources are conserved by careful planning and wise project design. Our Service "team", which will be working on the SNWW project, includes Darryl Clark (Lafayette Field Office, 337/291-3111), Phil Glass (Clear Lake Field Office, 281/286-8282), Andy Loranger and Patrick Walther (Texas Chenier Plain NWR, 409/267-3337), and Chris Pease (Sabine NWR, 318/762-3816). Please do not hesitate to call any of them, or me at 281/286-8282 if you have questions or if these recomendations require clarification.

Sincerely,

for Carlos H. Mendoza
Project Leader, Clear Lake ES Field Office

cc:
Daryll Clark, FWS Lafayette
Steven Gammill, Louisiana DNR
Andy Loranger, FWS Texas Chenier Plains NWR
Chris Pease, FWS Sabine NWR
Jim Sutherlin, TPWD J.D. Murphree WMA
Patrick Walther, FWS McFaddin NWR

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JUN 28 2000

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

Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, Florida 33702

June 23, 2000

Colonel Nicholas J. Buechler
District Engineer, Galveston District
Department of the Army, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Dear Colonel Buechler:

The National Marine Fisheries Service (NMFS) has reviewed the "Notice of Studies and Initial Public Meeting for Sabine-Neches Waterway, Texas Feasibility Study," dated April 20, 2000. requesting comments on the feasibility phase of the Sabine-Neches Waterway (SNWW) Study. The Feasibility Study will examine channel deepening from the Gulf of Mexico to Beaumont, channel widening from Port Arthur to Beaumont, and using dredged material to enhance Bessie Heights and Rose City Marshes.

The proposed channel modification will affect Essential Fish Habitat (EFH) for postlarval, juvenile, and adult red drum (*Sciaenops ocellata*), brown shrimp (*Penaeus aztecus*), white shrimp (*Litopenaeus setiferus*), and pink shrimp (*Penaeus duorarum*), postlarval and juvenile Spanish mackerel (*Scomberomorus maculatus*). Categories of EFH which may be affected if the project is constructed will include estuarine emergent wetlands, estuarine water column, and estuarine mud/sand bottoms. Detailed information on red drum, mackerel, shrimp, and other Federally managed fisheries and their EFH is provided in the 1998 amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council (GMFMC). The 1998 generic amendment was prepared as required by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (P.L. 94-265).

In addition to EFH designated for shrimp, Spanish mackerel, and red drum, wetlands adjacent to Sabine Lake, and the lower Sabine-Neches River watershed, provide nursery and foraging habitat that supports various forage species and economically-important marine fishery species such as spotted seatrout (*Cynoscion nebulosus*), flounder (*Paralichthys spp.*), Atlantic croaker (*Micropogonias undulatus*), black drum (*Pogonias cromis*), Gulf menhaden (*Brevoortia patronus*), striped mullet (*Mugil cephalus*) and blue crab (*Callinectes sapidus*). These estuarine-dependent organisms serve as prey for other fisheries managed under the MSFCMA by the GMFMC (e.g., red drum, mackerels, snappers, and groupers) and highly migratory species managed by the NMFS (e.g.,

billfishes and sharks). Wetlands also provide habitat for many benthic animals, including marine worms and crustaceans, which are important components of the estuarine food web. Furthermore, wetlands provide other estuarine support functions, including: (1) providing a physically recognizable structure and substrate for refuge and attachment above and below the water surface; (2) improving water quality by trapping sediments and assimilating pollutants; (3) preventing erosion; (4) collecting organic and inorganic material by slowing currents; and (5) providing nutrients and detrital matter to the Sabine Lake estuary.

The NMFS is concerned that the proposed channel deepening and widening will increase salinity, alter the hydroperiod, and increase the tidal amplitude in the lower Sabine-Neches watershed. This could adversely impact brackish and intermediate marshes within the lower Sabine-Neches watershed and could result in significant marsh loss within the watershed. Therefore, NMFS recommends that the Corps conduct a three-dimensional hydrodynamic modeling study to evaluate potential changes to salinity regimes, tidal amplitudes, hydroperiods, and marsh flooding duration. The model should include all major drainages within the lower Sabine and Neches River watershed and Sabine Lake, including the Gulf Intracoastal Waterway to Calcasieu Lake, and an assessment should be made to determine what affects the proposed channel deepening and widening will have on marshes in the lower watershed. Model iterations should include a reasonable array of freshwater inflow scenarios to reflect present hydrology and a reasonably foreseeable array of scenarios predicting cumulative losses of Sabine River freshwater inflows caused by withdrawals under current Texas Senate Bill 1 (Texas Water Plan). The model runs should compare the present channel configuration with the proposed deepened and widened channel, including any reasonable engineering and beneficial use features designed to reduce predicted salinity increases. NMFS would like to participate in the development of the model, its validation, and in analysis of its results throughout project planning.

For your information, the Louisiana Department of Natural Resources (DNR) is presently contracting with Dr. Ehad Meselhe at the University of Louisiana at Lafayette for an H3D model to be used to predict similar changes in this region. There is available an extensive set of data on water salinities within these wetland habitats of concern, specifically in Sabine National Wildlife Refuge, McFaddin National Wildlife Refuge, Texas Point National Wildlife Refuge, J.D. MurphreeWildlife Management Area, Sabine Lake proper, Lake Bayou cypress swamp near Beaumont, Blue Elbow cypress swamp on the Sabine River, and Sabine Island Wildlife Management Area (Louisiana Department of Wildlife and Fisheries).

Additional beneficial use features using project-generated dredged material to restore previously degraded or lost wetland habitat should also be investigated. Potential beneficial use project sites include Bessie Heights Marsh, back dune marshes at Texas Point National Wildlife Refuge, beach nourishment at Holly Beach and Texas Point, marshes at McFaddin National Wildlife Refuge, and marshes within the Lower Neches and J.D. Murphree Wildlife Management Areas.

If we may be of further assistance, please contact Mr. Rusty Swafford of our Galveston Facility at (409) 766-3699.

Sincerely,

Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

June 26, 2000

Frank Garcia
Chief, Planning, Environmental & Regulatory Divison
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, Texas 77553-1229

RE: **C000171**, Galveston District, Corps of Engineers, Sabine-Neches Waterway Study, Southeast Texas and **Calcasieu and Cameron Parishes, Louisiana**

Dear Mr. Garcia:

This letter is in response to the Notice of Studies and Initial Public Meeting for the Sabine-Neches Waterway, Texas Feasibility Study. Our preliminary comments are presented below, however, it will be necessary for the Galveston District to submit a Consistency Determination on this project before we can make a final decision on the project. For timely review, we suggest that you submit the Consistency Determination at the same time that the Draft EIS is published.

In the past, Louisiana has experienced vast amounts of wetland loss, a large part due to saltwater intrusion following development of navigational channels. For this reason, we are especially concerned that deepening of the Sabine-Nechez channel may have similar devastating effects on wetlands in southwestern Louisiana. We strongly recommend that the Galveston District conduct hydrological simulation modeling of the saltwater effects likely to result from this project, and that features such as a saltwater lock be included in the study of alternatives.

We recommend that the feasibility study provide full need and justification for the project, and that a thorough analysis of all environmental effects of the existing navigation channel and project alternatives be conducted and presented in the study findings. Possibilities for beneficial use of the dredged material to create wetlands should be fully explored as Louisiana has a no-net wetlands loss policy. Further, we expect the Galveston District to address any potential cumulative and secondary effects that these hydrological alterations will have on the coastal ecosystem, and provide compensatory mitigation for any wetland losses that may result.

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (225) 342-7591 FAX (225) 342-9439
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625 N Fourth St Baton Rouge
70804

losses that may result.

Please keep us informed of significant project updates and timelines. We would welcome involvement in the planning and decision-making process for this study and would like to participate in the study's environmental assessment of the southwest Louisiana coastal marshes. If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225)342-7939 or 1-800-267-4019.

342-9939

Sincerely,

Terry W. Howey

Terry W. Howey,
Administrator

TWH/JH/bgm

cc: John Stacy, CMD FI
Tina Horn, Cameron Ph.
Pam Sturrock, Calcasieu Ph.
Darryl Clark, USFWS

TEXAS PARKS & WILDLIFE

July 11, 2000

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To manage and conserve the natural and cultural resources of Texas for the use and enjoyment of today and future generations.

Colonel Nicholas J. Buechler
U. S. Army Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229
ATTN: Mr. Frank Garcia

Dear Colonel Buechler:

Texas Parks and Wildlife Department (TPWD), acting in the public trust, has considerable fish and wildlife interests and public recreation interests in the area influenced by any proposed navigation improvements. TPWD's habitat ownerships within these potentially impacted areas include the Tony Houseman State Park and Wildlife Management Area at Blue Elbow Swamp, Lower Neches Wildlife Management Area, J. D. Murphree Wildlife Management Area, Sea Rim State Park, and Sabine Pass Battleground. These lands total approximately 40,000 acres of wetland habitats in Orange and Jefferson Counties. Additionally, habitats of particular interest in the potentially affected area include Sabine Lake; fresh, intermediate and brackish marshes under other public or private ownerships; swamps and bottomland forests associated with the Sabine and Neches watershed basins; and the rivers and tributaries of the basins. These habitats have suffered substantially from salt-water intrusion due to increased navigation channel depths, small access channels into marshes, subsidence, and reduced marsh re-nourishment due to navigation channels and dams. Any increase in salinity will only increase the rate of habitat loss and thus is not acceptable.

Texas Parks and Wildlife requests that the Corps of Engineers implement the following recommendations regarding the proposed Feasibility Phase of the Sabine-Neches Waterway (SNWW) Study.

- The Corps should develop a three-dimensional hydrodynamic model that will reflect potential changes associated with the deepening and widening of the navigation channels, including the three depths of 45, 50, and 55 feet. The model should include the watershed basins to the west to State Highway 124, extend north upstream to existing dams on the Neches and Sabine Rivers. The model should also extend eastward to the Calcasieu Ship Channel.

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512-389-4800
www.tpwd.state.tx.us

- Include in the model mitigative measures that could compensate for changes in salinity for each proposed depth. For example, submerged locks or barriers to salt water intrusion at the mouth of Sabine Pass should be considered. Major mitigative measures be located in a few strategic locations could reduce the need for structural measures scattered along every tributary or embayment opening. Mitigative measures should not adversely affect ingress and egress of marine organisms that utilize estuaries as part of their life cycle. It is important that the diversity and productivity of Sabine Lake and its associated marshes and swamps are not degraded by the navigation improvements but are maintained or improved.

- Feasibility studies should incorporate anticipated changes in freshwater inflows into the estuary as anticipated from State water planning process (SB-1) actively underway at this time. The water plan for the State will be finalized in 2001. While this planning process is now underway, the timeline for the plan is to year 2050 allowing anticipated changes in freshwater inflows to be evaluated.

- In addition to measuring changes in salinity, modeling efforts should assess and incorporate changes in the following variables:
  1) tidal amplitude,
  2) anticipated relative sea level rise,
  3) temperature,
  4) primary productivity (phytoplankton) of Sabine Lake,
  5) nutrient utilization and water flushing rate (hydroperiod) in Sabine Lake,
  6) marsh hydroperiod as well as the flooding regime, and
  7) sediment transport within the basins and along the shoreline west of Sabine Pass.

- Modeling efforts should also measure the impact to the following "target" species:

  rangia clam
  white shrimp
  Atlantic croaker
  blue crab
  Southern flounder
  mottled duck
  pig frog
  American alligator
  muskrat

- Specific habitat types that should be considered in the modeling effort include:

  Cypress-tupelo swamp
  Freshwater marsh
  Intermediate marsh
  Brackish marsh
  Oyster reefs (Blue Buck Point)

- State cultural and historical sites (Fort Griffen) along the mouth of Sabine Pass should be assessed.

- The Corps should establish a beneficial uses group (BUG) for this project. Additionally, the Corps should use a process similar to the one used for the Houston Ship Channel project by developing an Interagency Coordination Team (ICT).

The Department appreciates the opportunity to provide comments and is interested in participating in the modeling work group, ICT, and/or BUG. Questions can be directed to Woody Woodrow in the Upper Coast Conservation Office (281) 461-4071 Ext. 22 or Rollin MacRae in Austin at (512) 389-4639.

Sincerely,

Larry D. McKinney, Ph.D.
Senior Director, Water and Resource Protection

LDM:JOW:JRM:msf

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

July 19, 2000

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

re: Point of Contact for the Sabine-Neches Waterway Widening and Deepening Feasibility Study Interagency Coordination Team (ICT)

Dear Ms. Murphy:

Thank you for your letter of July 13, 2000 inviting my office to nominate someone for the Sabine-Neches Feasibility Study. This proposed project is of concern to my office both as it relates to regulatory issues, i.e. federal consistency determinations, and restoration issues, i.e. potential impacts of increased channel size on the quantity and quality of coastal wetlands. My office has two divisions, Coastal Management Division and the Coastal Restoration Division, which handle regulatory and restoration issues, respectively. Ideally, I would appoint a representative from each division to address these different aspects of the proposed project. These representatives would have been Mr. Greg DuCote from CMD and Mr. Steve Gammill from CRD. However, as you have requested a single point of contact, I nominate my Deputy Assistant Secretary, Mr. Gerry Duszynski, as our ICT Representative. He will call upon Mr. DuCote and Mr. Gammill for assistance, as appropriate.

Sincerely,

James "Randy" Hanchey, P.E.
Assistant Secretary

cc: Dr. Bill Good, Administrator, CRD
Dr. Terry Howey, Administrator, CMD
Mr. Gerry Duszynski, Deputy Assistant Secretary, OCRM
Mr. Steve Gammill, Geoscience Supervisor, CRD
Mr. Greg DuCote, Program Manager, CMD

OFFICE OF COASTAL RESTORATION AND MANAGEMENT
P.O. BOX 44487 • BATON ROUGE, LOUISIANA 70804-4487 • TELEPHONE (225) 342-3583 • FAX (225) 342-1377
AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30341-3724

May 28, 2002

Ms. Janelle Stokes
Environmental Section, Planning Branch
Planning Environmental and Regulatory Division
P.O. Box 1229
Galveston, Texas 77553-1229

Dear Ms. Stokes:

We saw in Federal Register Notice 67 Fr 35801 dated May 21, 2002 that the Army Corps of Engineers intends to prepare a Draft Environmental Impact Statement (DEIS) to address the Improvements to the Sabine-Neches Ship Channel Near Beaumont and Port Arthur, Texas. We understand the study will evaluate several widening and deepening alternatives to improve a deep-draft navigation channel that connects harbor facilities in the Beaumont and Port Arthur area with the Gulf of Mexico. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

We are also particularly concerned that the DEIS provide detailed information on the dredged sediments, including plans for testing and characterizing contaminated hazardous and toxic bottom sediments prior to removal. We also are interested in planned disposal locations of these removed sediments and the potential impacts that these materials may have on human populations or potential downstream water supplies.

While we have no specific comments to offer at this time, the following areas are of particular concern to us and should be addressed if appropriate for this DEIS.

I. Air Quality
- dust control measures during project construction, and potential releases of air toxins potential process air emissions after project completion
- compliance with air quality standards

II. Water Quality/Quantity
- special private or public potable water supply considerations, including ground and surface water resources
- compliance with water quality and waste water treatment standards
- ground and surface water contamination (e.g. runoff and erosion control)
- body contact recreation

III. Wetlands and Flood Plains
- potential contamination of underlying aquifers
- construction within flood plains which may endanger human health
- contamination of the food chain

IV. Hazardous Materials/Wastes
- identification and characterization of hazardous/contaminated sites
- safety plans/procedures, including use of pesticides/herbicides; worker training
- spill prevention, containment, and countermeasures plan

V. Non-Hazardous Solid Waste/Other Materials
- any unusual effects associated with solid waste disposal should be considered

VI. Noise
- identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals) and appropriate mitigation plans during and after construction

VII. Occupational Health and Safety
- compliance with appropriate criteria and guidelines to ensure worker safety and health

VIII. Land Use and Housing
- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
- demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools)
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- potential impacts upon vector control should be considered

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern which may be applicable to this project.

Thank you in advance for your consideration. Please send a copy of the DEIS to the following address for our review and comment:

Paul Joe, DO, MPH
Medical Officer
National Center for Environmental Health
Centers for Disease Control & Prevention
4770 Buford Highway, MS (F-16), NE
Atlanta, Georgia 30341-3724

Sincerely,

Paul Joe

Paul Joe, DO, MPH
Medical Officer
National Center for Environmental Health (F16)
Center for Disease Control & Prevention

United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. Box 1306
Albuquerque, New Mexico 87103
http://ifw2es.fws.gov

In Reply Refer To:
R2/ES/HC-EC
CL 7-019/ER: 2/0500

JUL 15 2002

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

Dear Ms. Murphy:

This responds to the U. S. Army Corps of Engineers notice of intent, to prepare a Draft Environmental Impact Statement for the improvements to the Sabine-Neches Ship Channel near Beaumont and Port Arthur, Texas, published in the May 21, 2002, Federal Register.

Since June 2001, the U.S. Fish and Wildlife Service (Service) Clear Lake, Texas and Lafayette, Louisiana Ecological Services Field Offices have been actively involved with the Corp of Engineers, Galveston District, other Federal and State environmental resource agencies in both states, and the project sponsor in the planning efforts for the Sabine-Neches Ship Channel Improvements project. Service involvement includes participation in the Interagency Coordination Team's Beneficial Uses Group and the Salinity Modeling Group. The Service will prepare a Draft Fish and Wildlife Coordination Act Report detailing its analysis of project impacts and mitigation requirements. This draft report will be completed in 2003.

The Service looks forward to further coordination with the Galveston District and others on the planning of this project.

Sincerely,

Acting Regional Director

cc: Team Leader, Natural Resources Management, Office of Environmental Policy and Compliance, Department of the Interior, Washington, D.C.
Director (AFHC-DFPA/BFA/ERT) Attention: Don Peterson
Regional Director, Region 4, Attention: Regional Environmental Coordinator
Regional Director, Region 2, Attention: Regional Environmental Coordinator
Supervisors, Ecological Services Field Offices, Clear Lake, TX and Lafayette, LA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JAN 30 2003

Carolyn Murphy, Chief
Environmental Resources Section
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

Subject: Sabine-Neches Waterway (Channel Improvements to Beaumont)
Environmental Impact Statement (EIS)

Dear Ms. Murphy:

The Environmental Protection Agency (EPA), Region 6, appreciates your invitation to become a cooperating agency in the preparation of the subject EIS. EPA is very interested in the proposed project and will participate in the National Environmental Policy Act (NEPA) process regarding our specific programs and responsibilities, to the extent possible, including: 1) Section 309 of the Clean Air Act (CAA) in review of the EIS for compliance with NEPA and Council on Environmental Quality (CEQ) guidelines; 2) Section 404 of the Clean Water Act (CWA) in the evaluation of impacts on wetlands and waters of the United States; and if applicable, 3) Section 102(c) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) regarding the possible designation of an environmentally acceptable ocean dredged material disposal site (ODMDS). However, we are currently unable to participate as a cooperating agency.

Section 309 of the CAA and Section 404 of the CWA

The EIS for the proposed project should: 1) clearly demonstrate the Federal need for the proposed project, particularly when balanced against the Federal interest in coastal restoration; 2) analyze less environmentally damaging practicable alternatives to the proposed project; 3) fully evaluate potential adverse wetland impacts associated with increased salinity, tidal amplitude, and vessel traffic; 4) evaluate any adverse impacts to the on-going deltaic land formation occurring at the mouth of the Sabine-Neches outlet; and 5) evaluate the potential for induced development of port, harbor, and associated ship-building facilities.

Section 102(c) of MPRSA

It is unclear at this time if a new ODMDS would be required for the proposed project. For example, it is possible that 'new work' materials removed in connection with the proposed channel enlargement could be disposed of for beneficial use in coastal waters that are not subject to Section 102(c) of the MPRSA. Since any new EPA ODMDS designation would be subject to NEPA review, the following EIS Sections may provide the technical evaluation and related information in order for EPA to designate, if necessary, an environmentally acceptable and feasible site:

Introduction - including ODMDS components in the background and project description, problems (e.g., suspended fluff or floculation), and purpose and need.

Alternatives - including ODMDS in the history and process of formulating and screening options. Evaluate the environmental impacts of the reasonable ODMDS alternatives, including the beneficial use of dredged material to the maximum extent practicable. These could include:

1) ODMDS alternative sites (i.e., deep water, mid-shelf, and shallow water sites, including the currently designated ODMDS; and

2) beneficial use options such as, but not limited to: a) wetlands creation; b) pumping into confined disposal where the material may dewater and compact; c) other beneficial uses of dredged material, such as creation of beach feeder berms, or beach nourishment; and d) an alternative of cost-sharing.

Affected Environments and Environmental Consequences - including relevant ODMDS areas under the applicable affected resources, and the environmental consequences associated with and resulting from the applicable ODMDS activities. The Draft EIS could also provide an analysis of the secondary impacts of ODMDS disposal, including but not limited to: 1) the effects on coastal loss, erosion and/or subsidence; and 2) reductions, if any, in the long-term productivity of the coastal ecosystem. These Draft EIS impact analyses and discussions could be summaries or conclusions taken from the actual work products in the Appendices.

Appendices - including ODMDS work products, such as: 1) the evaluations based on the five general (40 CFR 228.5) and 11 specific (40 CFR 228.6) criteria; 2) environmental site screening study; 3) modeling components for new construction and new maintenance materials; 4) contaminant and/or sediment studies; 5) site management and/or monitoring plans; and 6) a State Coastal Zone Consistency Determination.

We look forward to working with you and your staff on this EIS. Please keep us informed regarding future coordination activities and meetings, which will be very helpful in our discussion of travel and resource commitments. If you have any questions, feel free to contact me at (214) 665-8150 or Mike Jansky at (214) 665-7451.

Sincerely yours,

Rob Lawrence

Robert D. Lawrence, Chief
Office of Planning and
Coordination (6EN-XP)

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

REPLY TO
ATTENTION OF

February 10, 2004

Ms. Estelle A. Bulka
Acting Chief, Office of Planning and Coordination
U.S. Environmental Protection Agency
Region 6
1445 Ross Ave., Suite 1200
Dallas, Texas 75202-2733

Dear Ms. Bulka:

The Galveston District, Corps of Engineers, would like to invite the U.S. Environmental Protection Agency, Region 6 (EPA), to participate as a Cooperating Agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway Feasibility Study (Channel Improvements to Beaumont). Our non-federal partner for this study is the Jefferson County Waterway and Navigation District. It has become apparent during the initial phases of this study that the designation of new ocean dredged material disposal sites (ODMDS) will be necessary to accommodate maintenance material for the offshore channel extension that will accompany channel deepening should the project be authorized. We propose that this EIS serve as a vehicle for EPA to prepare and develop environmental criteria for ocean disposal activities and to designate new or expanded ocean disposal sites associated with the proposed improvements, and to satisfy the requirements of Section 102 of the Marine, Protection, Research, and Sanctuaries Act. Additionally, if beneficial uses are identified for the disposal material, the District will have to consider and develop criteria for placing material under Section 404 of the Clean Water Act.

A combined EIS with EPA as a Cooperating Agency is preferred by this agency because preparation and coordination of a separate ODMDS EIS could seriously impact the completion schedule for this study. We have sufficient time to conduct required field work and prepare an ODMDS appendix for our combined EIS before the tentatively scheduled January 2005 completion of the preliminary draft. Public meeting(s) will be held in late summer/early fall to acquaint the public with the recommended plan in advance of releasing the draft for public review. Should you choose not to be a Cooperating Agency for this EIS, preparation of a separate EIS specifically for ODMDS designation will be necessary. Although we will also conduct the required analyses and prepare a preliminary draft EIS for EPA's coordination and issuance, time required to complete the separate process would likely delay issuance of the SNWW DEIS beyond the current schedule of April 2005.

In accordance with Section 1501.6 of the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA), we hereby formally request that the EPA become a Cooperating Agency. To formalize the request, we are enclosing two originals of a proposed Cooperating Agency Agreement between the EPA and the Galveston District Corps of Engineers. If you agree to the terms of the agreement, please sign them and return one original to us.

If you should have any questions regarding this request and the agreement, please contact Ms. Janelle Stokes of my staff at (409) 766-3039.

Sincerely,

Lloyd Saunders

Lloyd H. Saunders, Ph.D.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Environmental Impact Statement (EIS) for the Feasibility Study of the Sabine-Neches Waterway Project (Channel Improvements to Beaumont, Texas)

COOPERATING AGENCY AGREEMENT

between

The Corps of Engineers (CE)
Galveston District
The Lead Agency

and

The U.S. Environmental Protection Agency (EPA)
Region 6
The Cooperating Agency

INTRODUCTION

This agreement outlines the responsibilities agreed to by the above two Federal agencies with respect to the preparation of both the Draft and Final Environmental Impact Statements for the Feasibility Study of the Sabine-Neches Waterway Project (Improvements of the Channel to Beaumont) with the Jefferson County Waterway and Navigation District as the local sponsor. The project study area is in the vicinity of Beaumont, Port Arthur, and Sabine Pass, Texas. The Galveston District CE has initiated development of an EIS to determine the environmental impacts of proposed channel improvements as well as environmental impacts of alternatives to the proposed action. The EIS will cover a full range of reasonable alternatives so that the CE decision-maker(s) will be aware of the full range of impacts of a final decision. The EIS will also serve as a vehicle for the EPA to prepare and develop environmental criteria for ocean disposal activities and to designate new or expanded ocean disposal sites associated with the proposed improvements and to satisfy the requirements of Section 102 of the Marine, Protection, Research, and Sanctuaries Act.

COOPERATING AGENCY RESPONSIBILITIES

1. The Cooperating Agency (EPA) will participate in the scoping and public meeting process and will consult with the lead agency as appropriate so that the discussion is consistent with the planned alternatives, to the extent resources allow.

2. The comments EPA provides to the CE under this agreement will be advisory, with the exception of final recommendations regarding ocean dredged material disposal site (ODMDS) designations. EIS conclusions specifically related to compliance with Section

102 of the Marine Protection, Research and Sanctuaries Act (MPRSA) will be the responsibility of EPA.

3. EPA will assist the CE in the preparation of the Environmental Impact Statement for the portions specifically related to Section 102 of MPRSA.

4. EPA will participate in field visits at the lead agency's request, to the extent resources allow.

5. This agreement will appear in all documents in which the EPA is designated as a cooperating agency.

6. EPA's participation as a cooperating agency does not affect its commenting role established under Section 309 of the Clean Air Act.

7. EPA will conduct all rulemaking required for formal designation of the ODMDS.

LEAD AGENCY RESPONSIBILITIES

1. The lead agency (CE) will forward to EPA a summary of all comments received during the preparation of the documents including those arising out of the scoping process, public meetings and circulation of the EIS's.

2. When necessary, the CE will conduct an in-house meeting with EPA staff to solicit views and input on regulatory and/or significant environmental issues associated with the proposed actions.

3. The CE is the lead agency and is responsible for final decisions in the draft and final EIS's and their publication. The lead agency will consult with EPA but will retain sole responsibility for determination of which overall project alternative is selected and what mitigation will be included in the project.

4. EPA will be given a complete and final copy of both the Draft and Final EIS's for review prior to final lead agency approval and distribution of the documents.

5. EPA will be promptly informed of all schedule changes that would affect timely completion of the EIS documents.

6. A statement that describes the extent of EPA's role as a cooperating agency will be placed in the introduction section of the EIS.

7. If budget shortfalls prohibit EPA travel associated with EIS coordination activities, the lead agency will consider the option of funding travel or meeting with Regional Staff at the Region 6 Office in Dallas, Texas.

8. This agreement shall become effective upon the date it is signed by both parties. This agreement may be amended upon written agreement executed by both parties. This agreement is terminated when the lead agency Record of Decision is signed or when written notice is given by either agency.

FOR U.S. Environmental Protection Agency,
Region 6 (Cooperating Agency):

Estelle A. Bulka
Acting Chief, Office of Planning
and Coordination
U.S. Environmental Protection Agency
Region 6
Dallas, Texas

Date: 18 Feb 2004

FOR Corps of Engineers,
(Lead Agency):

Lloyd H. Saunders
Chief, Planning, Environmental
and Regulatory Division
Corps of Engineers,
Galveston District
Galveston, Texas

Date: 10 Feb 2004

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

February 23, 2005

Janelle Stokes, Environmental Lead, SNWW Feasibility Study
U.S. Army Corps of Engineers, Galveston District
CESWG-PE-PR
P.O. Box 1229
Galveston, Texas 77553

Dear Ms. Stokes:

The Louisiana Department of Natural Resources, Office of Coastal Restoration and Management, wishes to enter the following comments into the official record of the Sabine-Neches Waterway (SNWW) Navigation Improvement Interagency Coordination Team. It is this Agency's expectation that each outstanding item will be addressed thoroughly and satisfactorily.

1. All environmental documents meant to satisfy NEPA and/or NOAA Coastal Zone Management Act (CZMA) Federal Consistency requirements must contain full and complete analyses of feasible alternatives. Analyses shall include alternative project types for the movement of hydrocarbon products upstream and downstream of the SNWW. The documents must give a full, fair, and accurate accounting of past, present, and future uses and users of the waterway. They must show that other alternatives would or would not meet the economic needs of the users and the goals of the project. The lessening of impacts from the construction of either alternative within the cost benefit analysis must also be taken into account.

2. Consistency with Louisiana's coastal management program will only be determined by a full review of the complete Consistency Determination submitted by the U.S. Army Corps of Engineers, Galveston District, pursuant to state and federal CZMA programs. That review will address the extent to which the recommended project has avoided, minimized, and compensated for impacts.

3. Mitigation measures for the navigation improvement project should include enforceable minimum Sabine River flow requirements.

For additional information, please contact William K. "Kirk" Rhinehart at (225) 342-2179.

Sincerely yours,

Gerald M. Duszynski
Acting Assistant Secretary

P. O. BOX 44487 • BATON ROUGE, LA 70804-4487 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802
PHONE (225) 342-3583 • FAX (225) 342-1377 • WEB http://www.dnr.state.la.us
AN EQUAL OPPORTUNITY EMPLOYER

cc: Kirk Rhinehart
David Frugé
Tony Duplechin
Gregory DuCote
Kyle Balkum
Jeff Harris

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

July 21, 2006

Environmental Section

Christy Lavergne
Louisiana Department of Wildlife and Fisheries
Marine Fisheries Division
P.O. Box 98000
Baton Rouge, LA 70898-9000

Dear Ms. Lavergne:

The Galveston District, Corps of Engineers, and the Jefferson County Waterway and Navigation District are in the final stages of preparing a draft feasibility report and environmental impact statement for the Sabine-Neches Waterway , Texas and Louisiana, Channel Improvement Project (SNWW CIP). Representatives of the Louisiana Department of Wildlife and Fisheries (LDWF) and other Louisiana resource agencies have participated with Texas and Federal agency representatives on an Interagency Coordination Team (ICT) which has evaluated impacts and developed mitigation measures for the Selected Plan of navigation improvements. Decisions on project impacts and compensatory mitigation were made by the ICT's designated workgroup with the full participation and concurrence of your agency's representatives. However, the LDWF ICT representatives (Mr. Kyle Balkum and Mr. Michael Harbison) have recommended that we contact you to obtain official comments from your agency regarding: 1) our assessment of the proposed dedicated dredging in Sabine Lake to supply sediment for marsh restoration proposed as mitigation; and 2) mitigation of impacts to oyster reef in Sabine Pass.

Complete details of project impacts and mitigation have been coordinated at length with the ICT. The Draft Environmental Impact Statement, currently scheduled for public review in late 2006, will be provided for your agency's formal review and comment at that time. A brief project summary is provided here to provide a context for the separate resolution of these two issues. The primary components of the Selected Plan for the SNWW CIP consist of deepening the existing inland reaches of the navigation channel from 40 to 48 ft to the Port of Beaumont, extending the existing entrance channel into the Gulf of Mexico at a depth of 50-ft, and widening the existing channel to 700 ft through Sabine Pass to the Taylor's Bayou Turning Basin near Port Arthur, Texas. The primary impacts to Louisiana are indirect impacts to Louisiana's intertidal wetlands associated with increased salinities. Ecological modeling of impacts has determined that 499 acres of intertidal marsh in areas east of Sabine Lake will be lost over 50 years due to salinity increases associated with the deeper navigation channel. The proposed mitigation plan developed by the ICT's Habitat Restoration Workgroup will restore a total of 3,502 acres of

emergent marsh in the Sabine National Wildlife Refuge (SNWR) and the Black Bayou area as full compensation for project impacts to Louisiana (USACE, 2006). The Black Bayou mitigation measures will restore 2,096 acres of emergent marsh in three open-water areas using maintenance material from the Channel to Orange over the 50-year project life, and a one-time dedicated dredging of accumulated material in the Lake Charles Deep Water Channel/GIWW. No issues requiring separate resolution have been identified by the LDWF ICT representatives concerning the Black Bayou mitigation measures.

Sabine Lake Dedicated Dredging

The portion of the mitigation to be conducted in the SNWR would consist of the restoration of 1,406 acres of emergent marsh. Dedicated dredging of Sabine Lake would be performed to supply the soils needed to restore marsh acreage and elevation, and mitigate for projected salinity increases in this area. A map showing the area of dedicated dredging and marsh restoration areas is Enclosure 1. The SNWW mitigation measure involves the one-time removal of Sabine Lake sediments by hydraulic pipeline dredge and the pumping of this material into three separate open water areas of the SNWR.

The area proposed for dedicated dredging is located within the Sabine Lake Public Oyster Area. However, the affected portion of Sabine Lake is too fresh to support viable oyster populations. Sabine Lake salinities in the vicinity of Willow Bayou averaged 5.3 parts per thousand (ppt) from 1984 to 1993 (Paille, 1996). Mean 1966 to 2000 salinities from stations located on the SNWR suggested that average Sabine Lake spring salinities are less than 3 ppt, summer salinities range from 3 ppt to 6 ppt, fall salinities are slightly greater than 6 ppt, and winter salinities range from 3 ppt to 6 ppt for the mid-eastern portion of Sabine Lake near SNWR (Louisiana Coastal Wetland Conservation and Restoration Task Force, 2002). Salinity sampling conducted in 2001 in support of hydrodynamic modeling for the SNWW Feasibility Study (Fagerburg, 2003) recorded summer salinities ranging from 3 ppt to 6 ppt at the northern end of Sabine Lake, and fall salinities primarily ranging from 1 ppt to 6 ppt, with one month of higher salinities averaging 9 ppt. The hydrodynamic model developed for the Feasibility Study revealed that observed salinity in Sabine Lake is highest at both the southern end (where the lake connects to Sabine Pass near Blue Buck Point) and at the northwestern corner (where the lake connects to the Sabine-Neches canal). The lowest salinities are observed in the central and eastern portions of the lake, which are furthest from the hydraulic connection to sources of saline water. (Brown et al., 2006).

Optimal salinity for oysters in Louisiana is from 10 to 15 ppt. Oyster larvae are killed below 10 ppt; salinities above 15 ppt are tolerated by oysters, but oyster predation by the oyster drill and others (i.e., *Perkinsus*) significantly increases above that salinity level (Breithaupt and Dugas 1979). Davis (1958) observed that oyster larval settlement and spat development occurred at salinities between 5 and 35 ppt. Adult oysters are able to withstand brief periods of salinities less than 5 ppt, but feeding, growth, and reproduction are severely reduced at those levels (Galtsoff 1964). Thus salinities in the vicinity of the East Sabine Lake Project area (6 ppt or lower) are in the marginal lower range for oyster production. Therefore, while not impossible, it is very

unlikely that oyster larvae, spat, and adults will be able to survive within the existing project area salinity regimes, except during drought years.

Sabine Lake oyster reefs are located in the southern portion of the lake in the vicinity of Blue Buck Point and the Highway 82 Causeway. Although there appear to be no published reports nor regular sampling programs of Sabine Lake oyster production, some unpublished data is available. Sampling conducted by the Texas Parks and Wildlife Department in the Blue Buck Point reef area from 1986 to 1991 (Mambretti personal communication, 2003) and a sonar survey of the southern third of Sabine Lake conducted in conjunction with a proposed Department of Army permit (Stelly personal communication, 2003) have mapped oyster reef in this area. In addition, the remote sensing survey documented that oyster reefs are concentrated in the Blue Buck Point vicinity and taper off quickly to the north. Because of the lower salinities in the upper two-thirds of Sabine Lake, it is unlikely that oyster reefs extend beyond the southern third of Sabine Lake. The dedicated dredging proposed here would occur at least 3.5 miles inland from the nearest mapped occurrence of oyster reefs in the southern portion of Sabine Lake near Blue Buck Point.

The dedicated dredging would take approximately 6.0 million cubic yards of material from a borrow trench in Sabine Lake located from 500 to 1500 ft from the SNWR shore. The borrow trench would extend north from near Willow Bayou for a distance of 3.9 miles, and average 1,030 ft wide by 7.5 feet deep. Trench ends would be sloped to gradually reconnect bottom elevations to the existing lakebed. The borrow trench would be continuous and parallel to the lake shoreline, in line with the common long-shore circulation pattern present in Sabine Lake. This circulation is expected to prevent the development of hypoxic conditions that would be detrimental to aquatic organisms. It is expected that the canal would eventually fill with Sabine River sediments. An access canal would also be needed for the pipeline dredge to reach the proposed borrow canal construction area. This canal would access the area from the section of the GIWW which crosses north Sabine Lake, and is shown the attached map.

USFWS and LDWF representatives on the ICT Habitat Restoration Workgroup have agreed that the proposed mitigation measure, based on application of the Wetland Value Assessment methodology, would have a net beneficial effect and cause no serious impacts to oysters and other biological resources and estuarine lake habitat. The Workgroup as a whole has approved adoption of the proposed action as a mitigation measure. Long-term benefits of a higher, more stable marsh would more than offset short-term impacts to benthic organisms during the one-time dredging episode. Dedicated dredging in Region 4 was approved in the CWPPRA Coast 2050 Plan (LCWCR/WCRA, 1998) as a common restoration strategy for wetland creation, as it furthers a strategic goal of ensuring vertical accumulation of coastal marshes relative to sea level rise and subsidence. The Coast 2050 plan was approved by participating state and Federal agencies, and all 19 coastal parishes.

Sabine Pass Oyster Impacts

One of the few direct impacts associated with channel widening and deepening proposed by the Selected Plan would be the loss of 7.3 acres of oyster shell reef on the Louisiana side of the Sabine Pass navigation channel. The reefs, mapped in 2003 by a remote sensing and oyster sampling survey undertaken for the SNWW feasibility study (Enright, 2003), are not located within a designated Louisiana Public Oyster Area or an Oyster Lease Area. Side-scan sonar and systematic sampling with a steel shell dredge mapped 60.1 acres of oyster reef within the remote-sensing survey corridor in Louisiana, 7.3 acres of which lie within the top-of-cut of the Selected Plan's 48 ft deep x 700 ft wide channel. A map of these reefs is provided as Enclosure 2. The shell dredge sampling recorded counts of live and dead American oysters (*Crassostrea virginica*), and half shells within 37 100-foot long transects (Enclosure 3). Twelve of these transects yielded no live or dead oysters, and few to no half shells. The remainder contained from to 2 to 43 live oysters, or an average of 12 live oysters in each sample. The Sabine Pass Channel will be enlarged using a 30-inch cutterhead hydraulic pipeline dredge. Excavated material and sea water will be suctioned into the hydraulic pipeline and deposited in an existing, upland placement area on the east side of Sabine Pass. Material will not be side cast on the remaining oyster reef beyond the top-of-cut of the widened channel. We propose to compensate for the biological impacts associated with the loss of 7.3 acres of existing reef by the creation of an equivalent amount of new oyster reef. Details such as location, pad thickness, and reef material can be determined through ICT consultation.

Based upon the hydrologic, biological and geophysical data summarized above, we request a finding that: 1) project activities of the Selected Plan for the SNWW CIP will not adversely impact Public Oyster Area resources and oyster habitat and that all relevant survey/assessment requirements have been satisfied for the Sabine Lake dedicated dredging for marsh restoration; and 2) that the proposed mitigation is adequate compensation for impacts to 7.3 acres of oyster in Sabine Pass. If you have any questions, please do not hesitate to call Ms. Janelle Stokes at 409-766-3039.

Sincerely,

Dolan Dunn
Chief, Planning, Environmental and
Regulatory Division

Breithaupt, R. and R. Dugas. 1979. A study of the southern oyster drill (*Thais haemastoma*) distribution and density on the oyster seed grounds. Louisiana Wildlife and Fisheries Commission. New Orleans, Louisiana. 1979. Technical Bulletin No. 30. 20 pp.

Brown, G. L., M. S. Sarruff, R.Vemulakonda, G. H. Nail, J. Stokes, and B. Mann. 2006. Numerical Model Study of Potential Salinity Impacts Due to Proposed Navigation Improvements to the Sabine-Neches Waterway, Texas. U.S. Army Engineer Research Development Center – Coastal and Hydraulics Laboratory (ERDC-CHL), Vicksburg, Mississippi.

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Enclosures

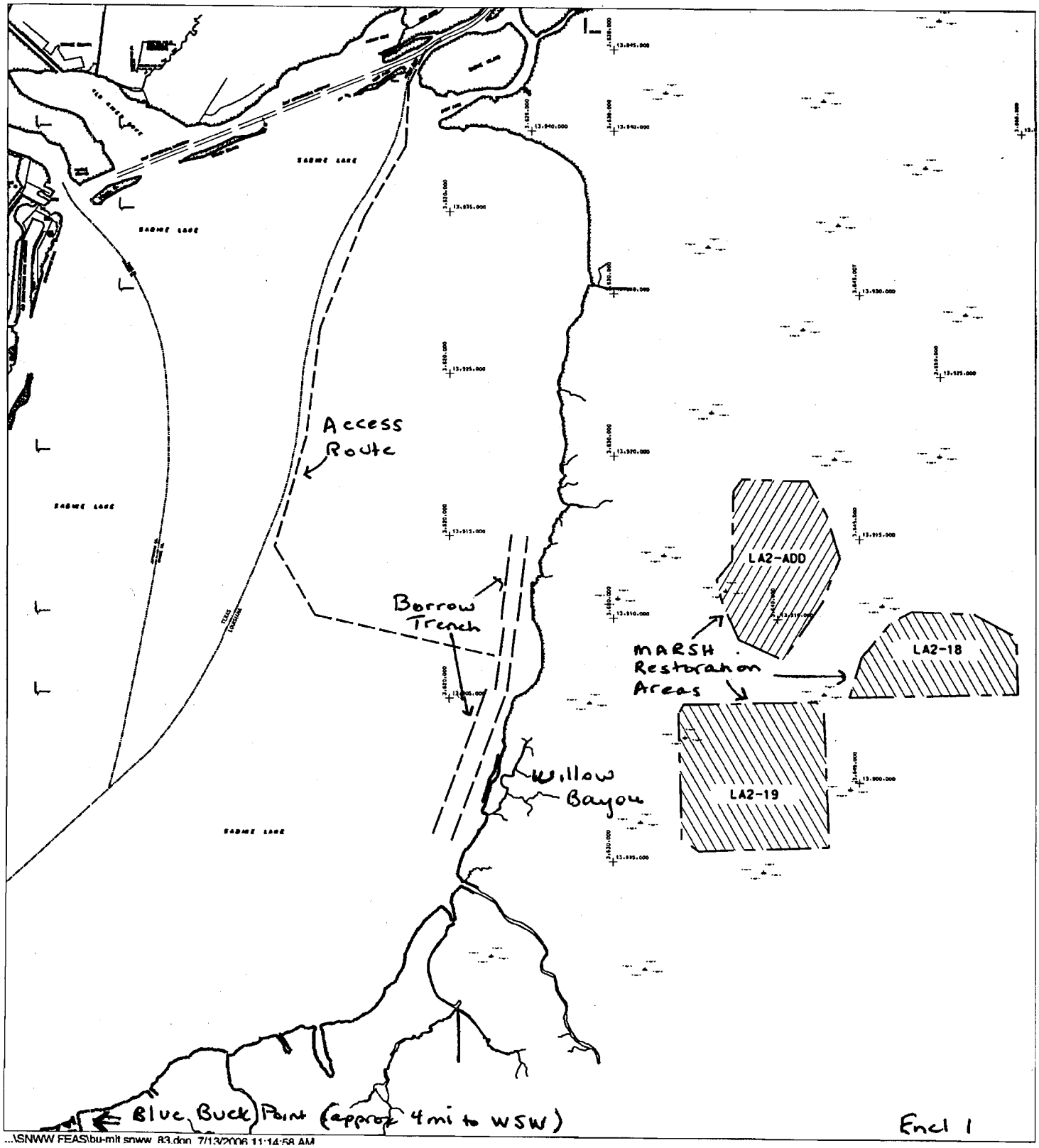
Copy Furnished (w/encl.):

Michael Harbison
Louisiana Department of Wildlife and Fisheries
Marine Fisheries Division
1213 North Lakeshore Drive
Lake Charles, LA 70601

Kyle Balkum
Louisiana Department of Wildlife and Fisheries
Fur and Refuge Division
P. O. Box 98000
Baton Rouge, LA 70898-9000

Bob Love
Louisiana Department of Wildlife and Fisheries
Fur and Refuge Division
P. O. Box 98000
Baton Rouge, LA 70898-9000

Dedicated Dredging
for
Marsh Restoration
SNWR



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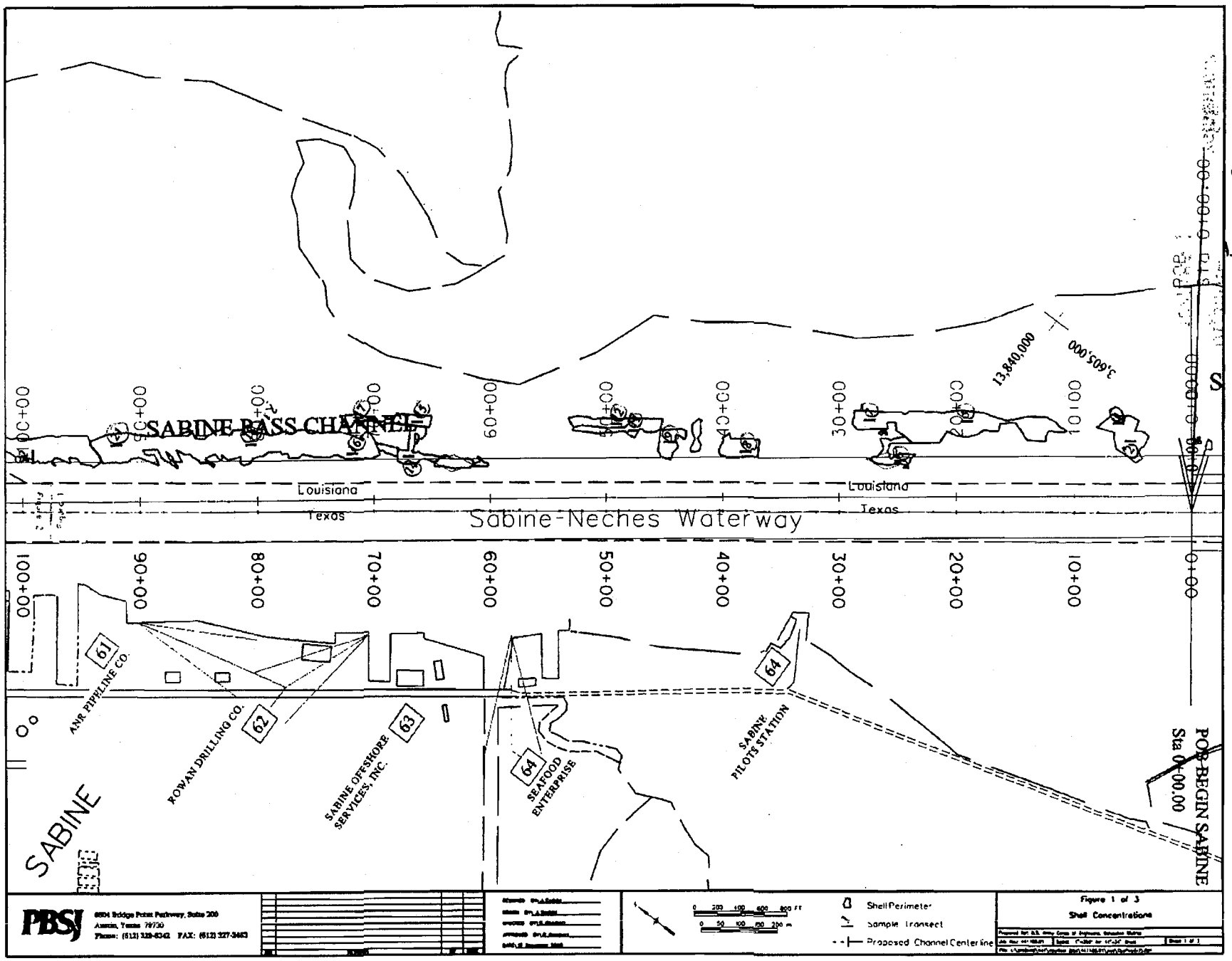
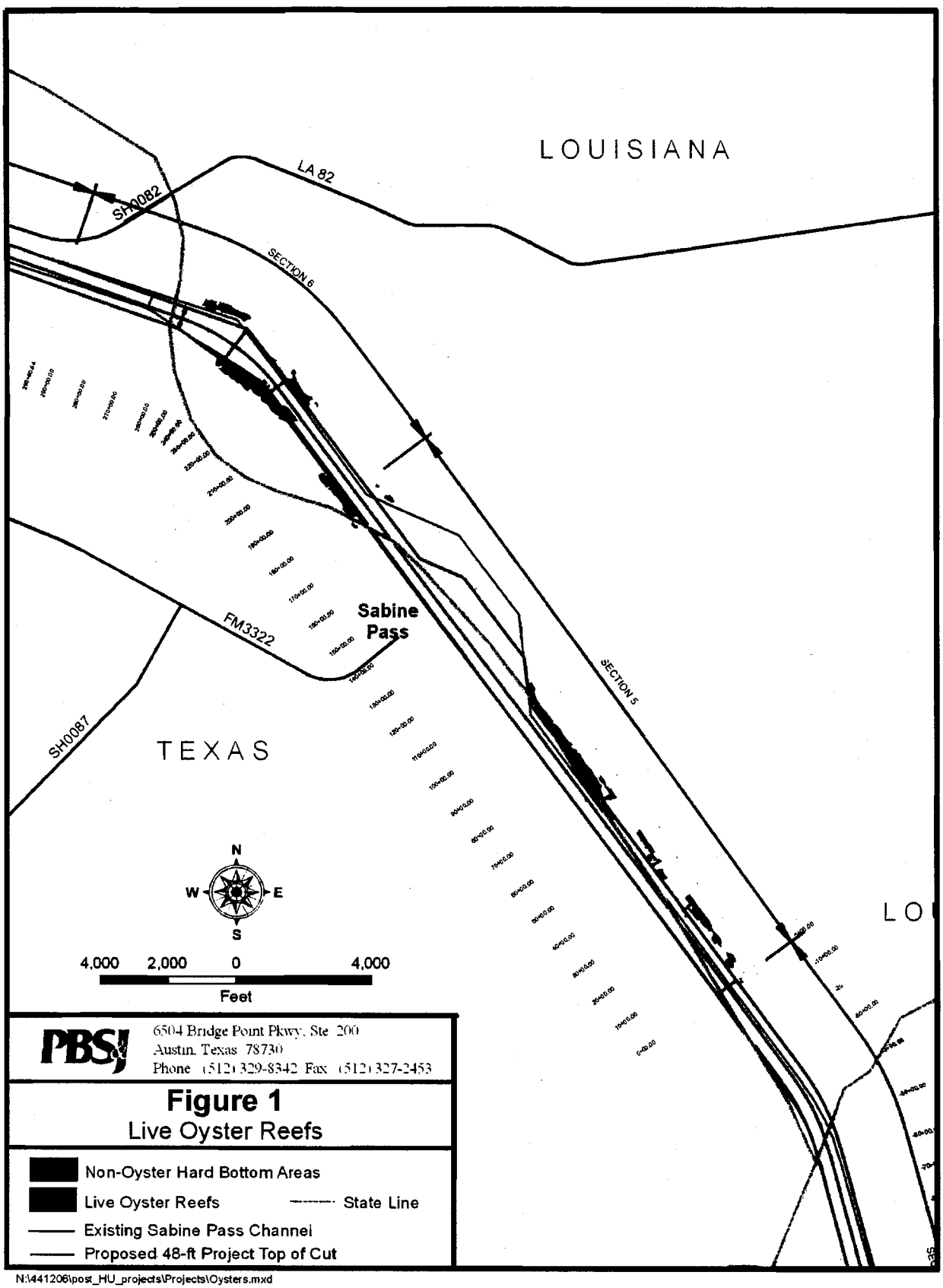
Encl 3
OYSTER SAMPLING LOCATIONS (1)





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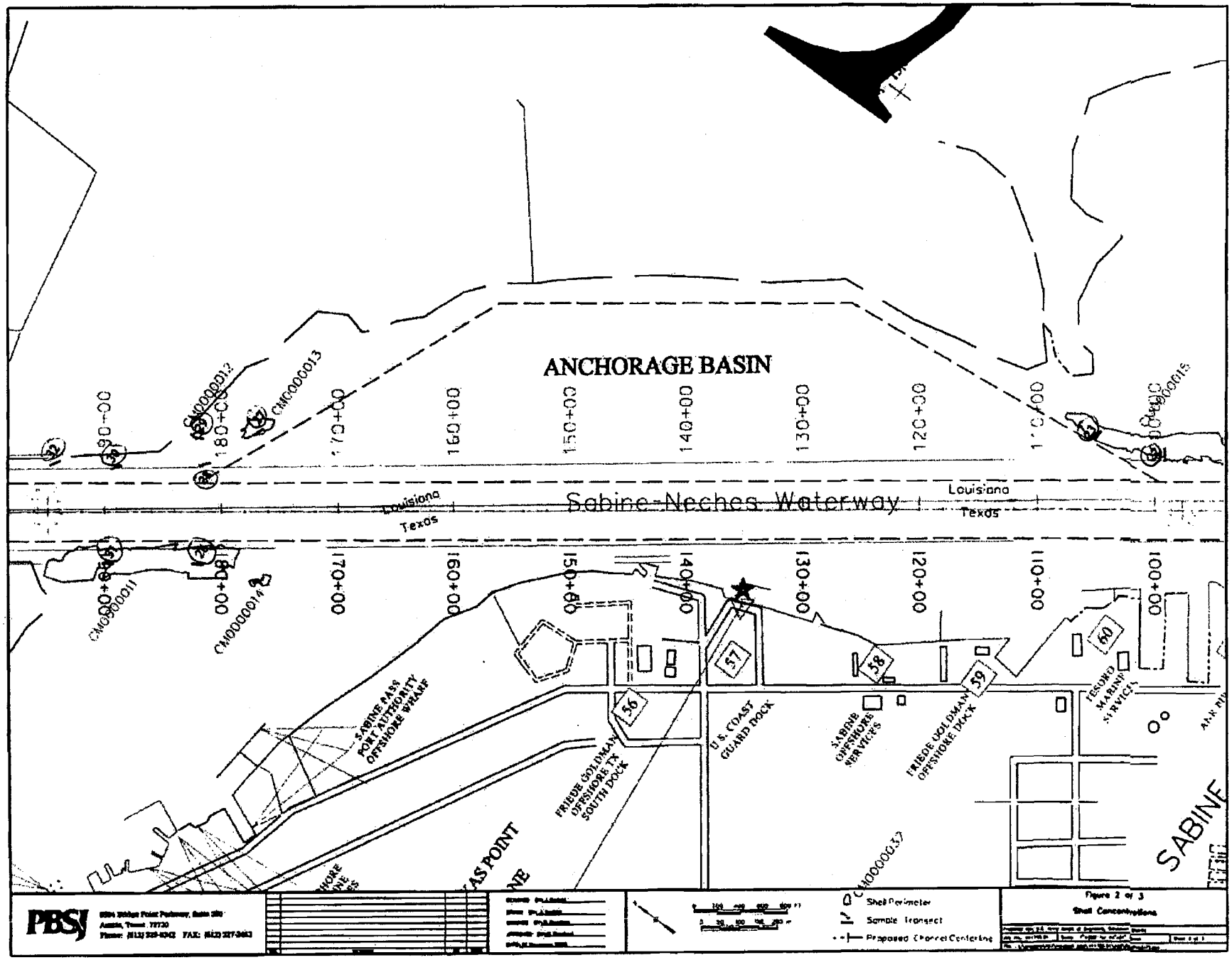
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Sabine-Neches Waterway
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SABINE PASS PORT AUTHORITY OFFSHORE WHARF
FRIEDE GOLDMAN OFFSHORE TX SOUTH DOCK
U.S. COAST GUARD DOCK
SABINE OFFSHORE SERVICES
FRIEDE GOLDMAN OFFSHORE DOCK
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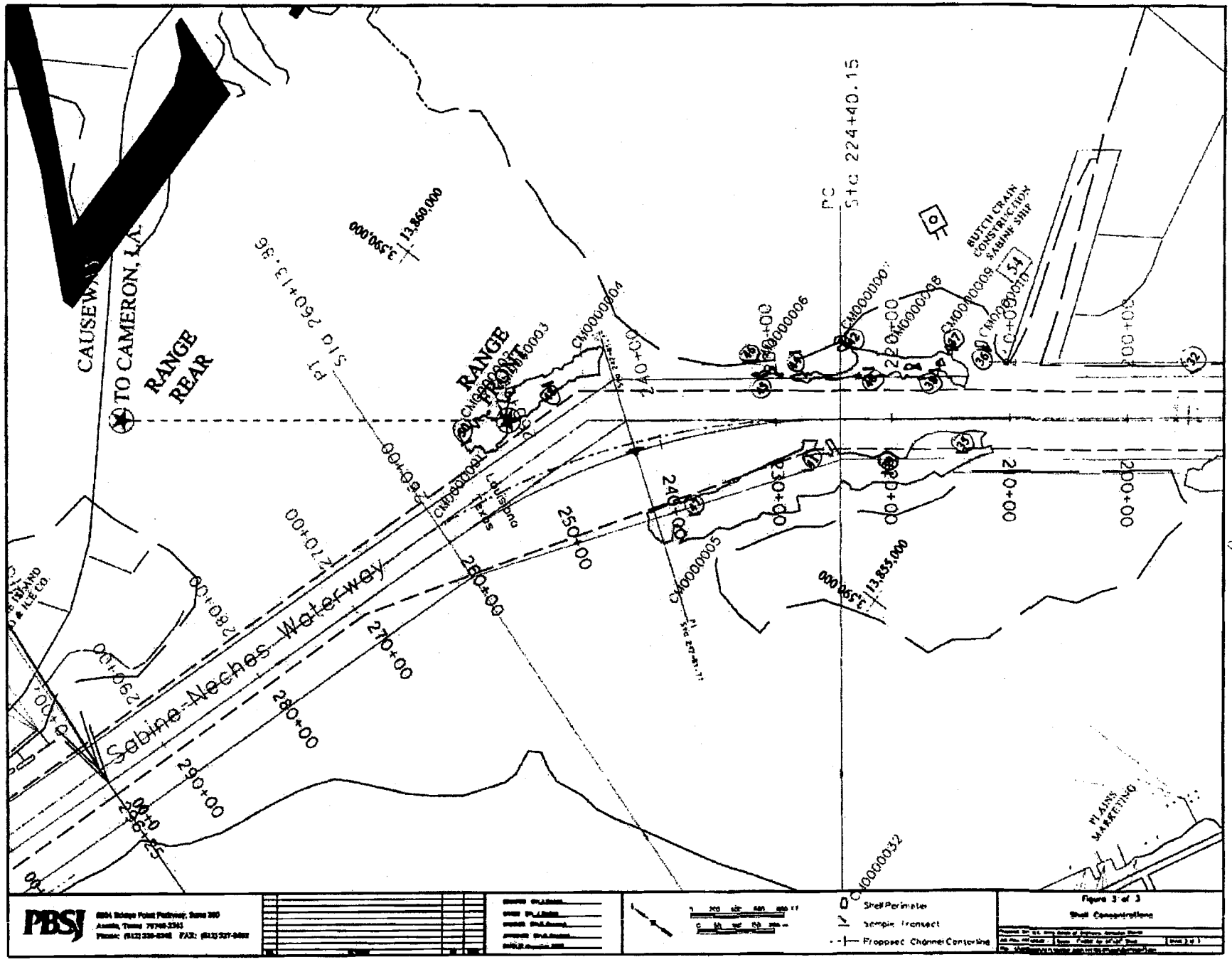
Shell Perimeter
Sample Transect
Proposed Channel Centerline
Figure 2 of 3
Shell Concentrations


CAUSEWAY
TO CAMERON, LA.
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RANGE FRONT
Sabine-Neches Waterway
Louisiana
Texas
PC
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BUTCH CRAIN CONSTRUCTION SABINE SHIP
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Shell Perimeter
Sample Transect
Proposed Channel Centerline
PBSJ
Figure 3 of 3
Shell Concentrations

TABLE 3
OYSTER SAMPLING RESULTS

Sample Transect	Number of Live Oysters	Number of Dead Oysters	Number of Half Shells	Exposed (E)/ Buried (B)	% Shell Hash (estimated)	% Mud (estimated)	Photograph Number
1	23	2	15	E	0	0	1151
2	3	2	34	E	0	0	1150
5	21	5	53	partially buried	15	30-40	1152
6	0	0	44	E	0	0	1153
7	16	3	9	E	0	0	1154
8	0	0	27	B	10	80	1155
9	0	1	0	E	0	0	0012
11	10	1	2	E	0	0	0013
12	3	0	11	E	5	0	1156
14	0	0	0	-	-	-	-
15	2	0	3	E	0	0	0015
16	12	2	0	E	0	0	0016
17	2	1	3	E	0	0	0017

18	23	11	34	E	10	0	1157
21	0	0	2	E	0	0	0019
22	0	0	8	E	0	0	0020
23	9	0	10	E	0	0	1158
26	43	1	33	E	0	0	1161
27	16	3	23	E	10-15	0	1159
28	0	0	0	-	0	100	0023
29	13	0	32	B	10	60	1160
30	0	0	2	-	0	100	0025
31	20	0	17	E	0	0	1162
32	0	0	0	-	5	95	0020
35	0	0	5	C	0	0	0027
36	0	0	17	B	0	75	1166
37	17	0	9	B	5	85	1167
38	0	0	0	-	0	0	-

39	5	0	21	C	0	0	0028
40	11	0	8	E	0	0	1168
41	16	7	22	E	5	0	1163
42	8	1	7	E	5	0	1165
45	4	1	0	E	0	0	1164
46	0	0	2	-	10	90	0031
47	2	0	7	C	0	0	0030
48	18	2	10	E	0	0	1169
50	0	0	0	-	0	0	-

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

DEPARTMENT OF WILDLIFE AND FISHERIES

DWIGHT LANDRENEAU
SECRETARY

August 30, 2006

Dolan Dunn
Planning, Environmental, and Regulatory Division
Galveston District, U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

RE: Sabine-Neches Waterway mitigation project in Sabine Lake, Louisiana

Mr. Dunn:

We are in receipt of your July 21, 2006 letter concerning the above captioned project. We have reviewed additional information related to the project, including the proposed mitigation plan that involves dredging approximately six million cubic yards of water bottoms from Sabine Lake, Louisiana for potential marsh creation/restoration in the adjacent Sabine National Wildlife Refuge. We have also reviewed written correspondence and Interagency Coordination Team information concerning the project that occurred over the past few years. It is clear from this information that the project's purpose is economically driven, and the environmental component stems only from the required mitigation for impacts associated with possible salinity increase in Sabine Lake. Although mitigation will serve as potential marsh creation/restoration on the Sabine National Wildlife Refuge, water bottom habitat within Sabine Lake will be impacted by dredging activities in the mitigation borrow area. As proposed, the required mitigation involves trading potential habitat creation/restoration in one area (Sabine NWR) for potential habitat degradation in another (Sabine Lake).

As you are aware, Sabine Lake is a public oyster area and this agency is mandated to diligently protect and conserve such areas. We exercise these protective measures regardless of the water bottom type (i.e. reef, sand, mud, etc.) or the current presence/absence of live oyster resources. In addition, it has been our long-standing practice that water bottoms associated with a proposed project within a public oyster area must be assessed prior to project implementation, and that compensation is required for impacts to those water bottoms.

Therefore, in order for this agency to consider a waiver of compensation for impacts to the water bottoms of the Sabine Lake public oyster area in relation to the mitigation borrow site, a full water bottom assessment must be performed and submitted to this agency prior to project implementation. A copy of the water bottom assessment protocol to be followed is attached for your information.

In addition, Louisiana Revised Statutes 56:2011-2015 outlined provisions relative to the dredging of fill material from water bottoms owned by the state of Louisiana and royalties thereon. No fill material shall be dredged from state-owned water bottoms unless a permit for that removal is issued by the Louisiana Department of Wildlife and Fisheries (LDWF). A severance royalty for each cubic yard of material removed from state-owned water bottoms shall also be paid to the state through LDWF. The proposed compensatory mitigation plan includes a proposal to sever approximately 6.0 million cubic yards of water bottom material (approximate severance value: $1,200,000) from Sabine Lake, a state-owned water bottom, and placement of the material on federally owned and managed property. Therefore, pursuant to R.S. 56:2011-2015, LDWF requests that the project applicant apply for a permit and pay the appropriate severance royalties for the proposed removal of material from state-owned water bottoms.

Thank you for providing us with the opportunity to comment on your mitigation plan. Please contact Patrick Banks at 225.765.2370 or by email at pbanks@wlf.louisiana.gov if you have additional questions concerning the water bottom assessment requirements. For more information concerning the fill material permit process involving the removal of state-owned water bottoms, please contact Biologist Assistant Division Administrator Robert Love at 225.765.2814.

Sincerely,

for W. Parke Moore, III
Assistant Secretary

Sincerely,

John E. Roussel
Assistant Secretary

pdb/kb

attachment

c: Karen Foote
Robert Love
Michael Harbison
Heather Warner-Finley
Kyle Balkum
Patrick Banks
Venise Ortego
Christy Lavergne
Daryl Clark – USFWS

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

January 23, 2007

Environmental Section

Steve Parris
U.S. Fish and Wildlife Service
Clear Lake Ecological Services
17629 El Camino Real, Suite 211
Houston, TX. 77058

Dear Mr. Parris:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

We are required by the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) (40 CFR Part 1501.6) and subsequent policy guidance to invite all agencies with "jurisdiction by law" or who have "special expertise with respect to any environmental issue" to participate in the preparation of our NEPA documents as cooperating agencies. Previously, we understood that inviting your participation in our SNWW Interagency Coordinating Team informally accomplished the substance of this requirement. However, we are now required to send agencies a written invitation to participate as a cooperating agency; those that agree will be identified on the cover page of the SNWW EIS.

We request that you provide a written response to this invitation. For non-federal agencies which agree to become a cooperating agency, we will develop a memorandum of agreement to formalize expected roles and responsibilities. If you should have any questions regarding this request, please contact Janelle Stokes of my staff at (409) 766-3039.

Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Kyle Balkum
Louisiana Department of Wildlife and Fisheries
Habitat Section
P.O. Box 98000
Baton Rouge, Louisiana 70898

Dear Mr. Balkum:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Dan Llewellyn
Louisiana Department of Natural Resources
Ecosystem Planning & Management Section
Coastal Restoration Division
P.O. Box 44027, Capitol Station
Baton Rouge, LA 70804-4027

Dear Mr. Llewellyn:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Roy E. Crabtree, Ph.D.
Regional Administrator
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

Dear ~~Mr.~~ Dr. Crabtree:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Eddie Seidensticker
Natural Resources Conservation Service
Cedar Bayou Field Office
7705 West Bay Road
Baytown, Texas 77520

Dear Mr. Seidensticker:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Junji Matsumoto
Texas Water Development Board
Hydrologic and Environmental Monitoring Division
1700 N. Congress Ave.
Austin, TX 78701

Dear Dr. Matsumoto:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

Carolyn Murphy
for Chief, Environmental Section

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

January 23, 2007

Environmental Section

Jarrett O. Woodrow
Texas Parks and Wildlife Department
Team Leader
1502 FM 517 East
Dickenson, TX 77539

Dear Mr. Woodrow:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Robert Burgess
Texas Commission on Environmental Quality
Water Quality Assessment
Water Permits and Resource Management
P.O. Box 13087 MC-150
Austin, TX 78711-3087

Dear Mr. Burgess:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

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Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

January 23, 2007

Environmental Section

Tammy Brooks
Texas General Land Office
Coastal Management Program
P. O. Box 12873
Austin, TX 78711-2873

Dear Ms. Brooks:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

We are required by the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) (40 CFR Part 1501.6) and subsequent policy guidance to invite all agencies with "jurisdiction by law" or who have "special expertise with respect to any environmental issue" to participate in the preparation of our NEPA documents as cooperating agencies. Previously, we understood that inviting your participation in our SNWW Interagency Coordinating Team informally accomplished the substance of this requirement. However, we are now required to send agencies a written invitation to participate as a cooperating agency; those that agree will be identified on the cover page of the SNWW EIS.

We request that you provide a written response to this invitation. For non-federal agencies which agree to become a cooperating agency, we will develop a memorandum of agreement to formalize expected roles and responsibilities. If you should have any questions regarding this request, please contact Janelle Stokes of my staff at (409) 766-3039.

Sincerely,

for Carolyn Murphy
Chief, Environmental Section

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

REPLY TO
ATTENTION OF

January 23, 2007

Environmental Section

Benjamin Tuggle
Regional Director
U.S. Fish and Wildlife Service
Southwest Region (2)
P.O. Box 1306
Albuquerque, N.M. 87103

Dear Dr. Tuggle:

This letter requests a compatibility determination for the beneficial use of dredged material for shoreline nourishment in the Texas Point National Wildlife Refuge (TPNWR), Jefferson County, Texas. This activity is being recommended in conjunction with the proposed Sabine-Neches Waterway (SNWW) Channel Improvement Project, Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana. The Galveston District is currently preparing a draft feasibility report and environmental impact statement which recommends enlargement of the existing navigation project to a proposed 48 x 700 foot channel.

As part of this project, shoreline nourishment is proposed for 3 miles of the Gulf of Mexico shoreline within the TPNWR, from 0.5 to 3.5 miles from the West Jetty, using maintenance material from the Sabine Pass portion of the SNWW navigation channel. The location of the proposed shoreline nourishment is shown on Enclosure 1. The Dredged Material Management Plan (DMMP) for the proposed project includes unconfined placement of maintenance material along the shoreline every 6 years for the 50-year project life (8 placement episodes). Shoreline nourishment at Texas Point will alternate with shoreline placement on the Louisiana Gulf shoreline, east of the SNWW. Rapid shoreline retreat in the TPNWR is resulting in substantial loss of wetlands. Additional shoreline erosion of approximately 0.42 feet per year is projected in conjunction with the proposed extension of the SNWW entrance channel. The proposed shoreline nourishment would protect the shoreline from existing erosion and eliminate the projected increase in erosion over the project life.

It is expected that the maintenance material from Sabine Pass will reflect the historical average of 51 percent silt, 31 percent clay, and 18 percent sand. The material would be hydraulically pumped into the near shore zone; some material is expected to flow over existing marsh while the remainder flows into the nearshore waters. Marsh plantings would occur as soon as possible on the inland half of the emergent berm to assist in stabilization. Experience with a similar project at Texas Point indicates that a majority of the dredged material will dissipate quickly during each placement event; however, some will remain and form a shelf on the shallow nearshore slope in front of the existing marsh edge.

Unconfined placement on the shoreline will have a net beneficial effect on this environment. Although placement events will temporarily impact shallow near shore waters and eroding marsh, benthic organisms in the nearshore zone will quickly rebound from the short term impact, as will marsh areas along the shore front which are nourished with additional sediment. Material added to the shoreline with these nourishment episodes will stabilize the eroding shoreline, and add sediment to the longshore current which will nourish areas to the west that are eroding at even greater rates. The potential for the nourishment activity to affect threatened and endangered species has been evaluated. No designated or proposed critical habitat would be affected. The federally-listed, endangered piping plover (wintering population) and sea turtles may occur in the shoreline nourishment area. No impacts to the wintering population of the piping plover are expected, however, because there is no intertidal beach or sand flat along this shoreline and therefore there is no wintering habitat for piping plover. The absence of a sand beach also negates potential for sea turtle nests in the nourishment zone. A contaminants assessment prepared for this project has determined that sediments and water from the SNWW are suitable for beneficial uses. Sediment and water sampling will be conducted prior to each maintenance cycle to ensure that these materials remain suitable for shoreline nourishment.

The proposal for shoreline nourishment at TPNWR was developed in coordination with Mr. Andy Loranger (Texas Chenier Plain National Wildlife Refuge Complex, 409/267-3337) and Mr. Phil Glass (Clear Lake Ecological Field Office, 281/286-8282). It was also recommended by the SNWW Interagency Coordination Team, a group of federal and state agencies which have reviewed impact assessments and recommended restoration and mitigation measures for the proposed SNWW project. Furthermore, the shoreline nourishment feature is included in the Draft Coordination Act Report for the project, which will be completed shortly.

Based upon the information presented above, we request your concurrence that the proposed shoreline nourishment is compatible with the major purposes of the TPNWR. If you have any questions, please contact Ms. Janelle Stokes at 409/766-3039.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosure

CF with enclosure:
Mr. Andy Loranger
Complex Manager
Texas Chenier Plain National Wildlife Refuge Complex
P.O. Box 278
Anahuac, TX 77514

Mr. Phil Glass
U.S. Fish and Wildlife Service
Clear Lake Ecological Services Field Office
17629 El Camino Real
Road, Suite 211
Houston, Texas 77058

Shoreline Nourishment

TX 8 Hydrologic Unit

2 1 0 2

Miles

PBSJ
6504 Bridge Point Pkwy, Ste 200
Austin, Texas 78730
Phone (512) 329-8342 Fax (512) 327-2453

Texas Point NWR
Shoreline Nourishment Area

Prepared for JSACE	
Job No 44120600	Scale 1:93,500
Prepared by Ehlerschaugen	Date 11/16/2001
File N:\44\206\post_HL_projects\TX8_Nourishment.mxd	

Enclosure 1

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

REPLY TO
ATTENTION OF

January 24, 2007

Environmental Section

Sam Hamilton
Regional Director
U.S. Fish and Wildlife Service
Southeast Region (4)
1875 Century Blvd. #400
Atlanta, Georgia 30345

Dear Mr. Hamilton:

This letter requests a compatibility determination for marsh restoration in the Sabine National Wildlife Refuge (SNWR), Cameron Parish, Louisiana. This activity is being recommended as compensatory mitigation for unavoidable impacts of the proposed Sabine-Neches Waterway (SNWW) Channel Improvement Project, Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana. The Galveston District is currently preparing a draft feasibility report and environmental impact statement which recommends enlargement of the existing navigation project to a proposed 48 x 700 foot channel.

As part of the proposed project, 3 separate areas totaling 3,775 acres have been selected as marsh restoration sites in the SNWR's Willow Bayou unit (Enclosure 1). Intermediate marsh in the proposed restoration areas has been converting to open water at a rapid pace. Salinity increases associated with a deeper SNWW navigation channel are expected to exacerbate this trend. The proposed mitigation compensates for this loss by restoring a total of 1,406 acres of emergent intermediate marsh within the 3 restoration sites.

The marsh would be restored by the addition of mineral soil removed by hydraulic pipeline dredge from the bottom of Sabine Lake. Borrow areas would be located at least 500 feet from shore. Material would be placed by the unconfined flow of dredged material from a hydraulic pipeline. Pipeline routes would follow existing canals and levees wherever possible. Within the restoration area, frequent pipe movement and careful elevation control would be necessary to obtain the appropriate marsh elevation. Tidal creek channels would be constructed in the marsh creation area after the dredged material has settled to return the area to normal tidal regime, facilitate marine organism access, and allow water and nutrients to flow into the area.

This extensive marsh restoration effort will result in the displacement of currently shallow open water habitat. While some open water habitats are valuable and may be critical in some instances in maintaining fisheries productivity, intertidal marshes are critically important in maintaining this productivity over time as they provide more food and cover for juvenile fishery organisms than open water habitats. The potential for the marsh restoration activities to affect threatened and endangered species was evaluated. No designated or proposed critical habitat would be affected. None of the federally-listed species identified for Cameron Parish are

expected to occur in the restoration areas. A contaminants assessment for the proposed Federal project identified no contaminated sites or sediments in the vicinity.

The proposal for marsh restoration in the SNWR was coordinated with Mr. Donald Voros (Southwest Louisiana National Wildlife Refuge Complex, (337/598-2216), Mr. Terry Delaine (Sabine National Wildlife Refuge, (337/558-5574), Mr. Roy Walter (Southwest Louisiana National Wildlife Refuge Complex, (337/598-2216) and Mr. Darryl Clark (Louisiana Field Office, (337/291-3111). It was also recommended by the SNWW Interagency Coordination Team, a group of federal and state agencies which have reviewed impact assessments and recommended restoration and mitigation measures for the proposed SNWW project. Furthermore, the marsh restoration measure is included in the Draft Coordination Act Report for the project, which will be completed shortly.

Based upon the information presented above, we request your concurrence that the proposed shoreline nourishment is compatible with the major purposes of the SNWR. If you have any questions, please contact Ms. Janelle Stokes at 409/766-3039.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosure

CF with enclosure:

Mr. Donald Voros
Complex Manager
Southwest Louisiana National Wildlife Refuge Complex
1425 Highway 27
Bell City, LA 70630

Mr. Terry Delaine
Refuge Manager
Sabine National Wildlife Refuge
7000 Southland Field Rd.
Sulphur, LA 70664

Mr. Roy Walter
Complex Biologist
Southwest Louisiana National Wildlife Refuge Complex
1425 Highway 27
Bell City, LA 70630

Mr. Darryl Clark
U.S. Fish and Wildlife Service
Louisiana Field Office
646 Cajundome Blvd, Suite 400
Lafayette, LA 70506

Marsh Restoration Areas

LA2 Hydrologic Unit

N
W
E
S

PBSJ

4104 Bridge Point Pkwy, Ste. 200
Austin, Texas 78759
Phone: (512) 339-8143 Fax: (512) 337-2453

Marsh Restoration Sites
Willow Bayou Unit

Prepared for: USACE

Job No: 44[illegible].00	Scale: 1:[illegible]
Prepared by: B. Morehouse	Date: 11/[illegible]/2005

File: N:\44[illegible]\coast_HU_projects\LA2_Willow.mxd

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

Southeast Regional Office
263 13th Avenue S.
St. Petersburg, Florida 33701

January 30, 2007

Colonel David C. Weston
District Engineer
Galveston District, Corps of Engineers
Department of the Army
P. O. Box 1229
Galveston, Texas 77553-1229

Dear Colonel Weston:

Thank you for your letter of January 23, 2007, inviting NOAA's National Marine Fishery Service (NMFS), Southeast Region, to participate as a cooperating agency in developing the environmental impact statement for the Sabine-Neches Waterway Feasibility Study. The project proposes to implement navigation improvements for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River.

The NMFS Southeast Region accepts the invitation from the Department of the Army to serve as a cooperating agency on this project. However, due to staffing and travel funding constraints, our participation may be limited to review and comment on draft documents, teleconferences, and occasional travel for meetings. I appreciate your request for NMFS Southeast Region's assistance in the development of this environmental document. If we may be of further assistance, please contact Mr. Rusty Swafford, of our Habitat Conservation Division, Galveston field office, at (409) 766-3699.

Sincerely,

Miles M. Croom

for Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/SER46 – Ruebsamen, Swafford
F/SER - Keys

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

February 20, 2007

Environmental Section

Billy Eakin
Regional Manager
Louisiana Department of Environmental Quality
Southwest Regional Office
1301 Gadwell
Lake Charles, LA 70615

Dear Mr. Eakin:

The Galveston District, Corps of Engineers, and our non-federal sponsor, the Jefferson County Waterway and Navigation District, would like to invite your agency to participate as a cooperating agency in the development of an Environmental Impact Statement (EIS) for the Sabine-Neches Waterway (SNWW) Feasibility Study. Navigation improvements are being proposed for the existing 65-mile long deep draft channel from the Gulf of Mexico to the Port of Beaumont on the Neches River. Environmental effects are being analyzed for adjacent intertidal marshes and forested wetlands in a large surrounding area which includes Sabine Pass and Sabine Lake, adjacent marshes in Texas and Louisiana, tidally influenced portions of the Neches and Sabine Rivers, and a proposed 13-mile long channel extension in the Gulf of Mexico. The Draft EIS is currently scheduled for publication in the summer of 2007.

We are required by the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) (40 CFR Part 1501.6) and subsequent policy guidance to invite all agencies with "jurisdiction by law" or who have "special expertise with respect to any environmental issue" to participate in the preparation of our NEPA documents as cooperating agencies. Previously, we understood that inviting your participation in our SNWW Interagency Coordinating Team informally accomplished the substance of this requirement. However, we are now required to send agencies a written invitation to participate as a cooperating agency; those that agree will be identified on the cover page of the SNWW EIS.

We request that you provide a written response to this invitation. For non-federal agencies which agree to become a cooperating agency, we will develop a memorandum of agreement to formalize expected roles and responsibilities. If you should have any questions regarding this request, please contact Janelle Stokes of my staff at (409) 766-3039.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

Coastal Coordination Council

P.O. Box 12873 ♦ Austin, Texas 78711-2873 ♦ (800) 998-4GLO ♦ FAX (512) 475-0680

Chairman

Jerry Patterson
Texas Land Commissioner

♦

Members

J. Robert Brown
Parks & Wildlife Commission of Texas

Jose Dodier
Texas State Soil & Water Conservation Board

Jack Hunt
Texas Water Development Board

Vacant
Texas Transportation Commission

Elizabeth Jones
Railroad Commission of Texas

Robert "Bob" Jones
Coastal Resident Representative

James R. Matz
Coastal Business Representative

Mayor Victor Pierson
Coastal Government Representative

Robert R. Stickney
Sea Grant College Program

John L. Sullivan
Agriculture Representative

Vacant
Texas Commission on Environmental Quality

♦

Ben Rhame
Council Secretary

Jesse Solis, Jr.
Permit Service Center
Corpus Christi
1-866-894-3578

Allison Buchtien
Permit Service Center
Galveston
1-866-894-7664

March 1, 2007

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

Re: Cooperating agency for Sabine-Neches Waterway Feasibility Study

Dear Ms. Murphy:

The General Land Office and Coastal Coordination Council agree to become a cooperating agency for the Sabine-Neches Waterway Feasibility study.

Currently, Juan Moya and Tammy Brooks serve on the Interagency Coordination Team and would continue to be the points of contact.

Please contact Juan Moya at (512) 475-3735 or at juan.moya@glo.state.tx.us and Tammy Brooks at (512) 463-9212 or at tammy.brooks@glo.state.tx.us.

Sincerely,

Eddie Fisher
Director of Coastal Stewardship
Coastal Resources Program Area

KATHLEEN BABINEAUX BLANCO
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES

BRYANT O. HAMMETT, JR.
SECRETARY

March 5, 2007

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

RE: *Application Number: EIS for Sabine-Neches Waterway (SNWW) Feasibility Study*

Dear Ms. Murphy:

The professional staff of the Louisiana Department of Wildlife and Fisheries, wishes to be a cooperating agency and will provide technical review as well as attend meetings and site visits as necessary.

The Louisiana Department of Wildlife and Fisheries seeks to work with you in a facilitative manner on this and future endeavors. Please do not hesitate to contact me at (225-765-2819) should you need further assistance.

Sincerely,

Kyle F. Balkum
Biologist Program Manager

gsb

c: Venise Ortego, Permits Coordinator
Gretchen Brown, LDWF
Patrick Banks, LDWF
Heather Finley, LDWF
Michael Harbison, LDWF

United States Department of the Interior

FISH AND WILDLIFE SERVICE
McFaddin/Texas Point National Wildlife Refuges
P.O. Box 358
Sabine Pass, TX 77655-0358
(409)971-2909 fax (409)971-2104

March 30, 2007

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

Dear Ms. Murphy:

This letter is in reply to your request for a compatibility determination for the beneficial use of dredged material for shoreline nourishment in the Texas Point National Wildlife Refuge, Jefferson County, Texas. This is a project that the Fish and Wildlife Service supports. I will do a compatibility determination on this project. Our compatibility determinations require a 30-day public review, so I would like to coordinate it with the public review of the Corps' Environmental Impact Statement that addresses this project as well. Please keep me informed as to when the EIS will go out for public comment and I will put the compatibility determination out for public comment at the same time.

If this is not acceptable to you, or you would like to discuss this further, please call me at (409)971-2909.

Sincerely

Dean Bossert

Dean Bossert
Refuge Manager

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real #211
Houston, Texas 77058-3051
281/286-8282 / (FAX) 281/488-5882

April 9, 2007

Colonel David C. Weston
U.S. Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

Dear Colonel Weston:

This letter supersedes our March 20, 2007, letter in response to your request that the Fish and Wildlife Service (Service) participate as a National Environmental Policy Act (NEPA) cooperating agency for the Sabine-Neches Waterway (SNWW) Feasibility Study. As your staff is aware, the Service has participated as an active member of the Interagency Coordination Team (ICT) for the SNWW study since 2002. As part of the ICT, Service biologists have helped in mapping important native fish and wildlife areas, determining hydrological parameters for hydrodynamic/salinity modeling, developing mitigation and beneficial use sites and methods, and preparing impact assessments.

We welcome the opportunity to continue our participation in NEPA document preparation and planning for the SNWW project as a cooperating agency. If you have any questions feel free to contact me or Mr. Phil Glass, staff biologist, at our Clear Lake Field Office.

Sincerely,

Stephen D. Parris

Stephen D. Parris
Field Supervisor, Clear Lake ES Field Office

cc:
Carolyn Murphy, Chief, Environmental, U.S. Army Corps of Engineers, Galveston, TX

TAKE PRIDE IN AMERICA

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

REPLY TO ATTENTION OF

September 22, 2009

Environmental Section

Ms. Teresa Bruner
Southwest Region Regional Administrator
Federal Aviation Administration
Southwest Region
2601 Meacham Boulevard
Fort Worth, TX 76137-4298

Dear Ms. Bruner:

The US Army Corps of Engineers, Galveston District and the Sabine Neches Navigation District (non-federal sponsor) are conducting a study of potential navigation improvements to the Sabine-Neches Waterway (SNWW). The SNWW is located in Jefferson and Orange Counties in Texas and Cameron Parish in southwest Louisiana (Figure 1). A preliminary draft environmental impact statement has identified a Preferred Alternative (PA) that would deepen the SNWW from the Gulf of Mexico through the jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont from 40 to 48 feet. Dredged material from deepening and continued maintenance of inland channel reaches would be placed in 16 existing upland placement areas (PAs) and three marsh restoration features. Mitigation for unavoidable project impacts would also restore marsh in five existing degraded marsh areas east of Sabine Lake and the Sabine River.

Upon review of FAA AC 150/5200-33, we have determined that certain components of the Preferred Alternative (use of existing upland PAs, proposed marsh restoration features, and marsh mitigation areas) could serve as wildlife attractants. We have mapped the locations of three local public use airports (the Southeast Texas Regional Airport, the Orange County Airport, and the Beaumont Municipal Airport) to determine if project features meet or conflict with minimum separation criteria for potentially hazardous land use practices. Figure 2 shows the 5,000-foot, 10,000-foot, and the 5-mile range perimeters around the three airports in the project vicinity. No PAs, marsh restoration features, or marsh mitigation areas are located within the separation perimeters for the Orange County Airport or the Beaumont Municipal Airport.

All or portions of four existing upland PAs (PA 18, 21, 23-23A, and 24) are located outside the 10,000-foot criteria, but partially or wholly within the 5-mile perimeter of the Southeast Texas Regional Airport; no marsh restoration features or marsh mitigation areas are located with the 5-mile separation perimeter for this airport (Figure 3). The four upland PAs were

originally designated for use for the SNWW Navigation Project in 1975, and will be used for disposal of dredged maintenance material (spoil) on average every four to six years, as they are now, with the exception of PA 23A. PA 23A, although designated in 1975, has not been used recently, but will be used for the improved project. All four PAs provide some habitat for birds and wildlife species at times between the dredging cycles. No new PAs are proposed within the separation perimeter.

Based upon the information presented above, we request your review and concurrence that continued use of these four existing PAs does not constitute a change in land-use and is compatible with airport operations, and that it is not necessary to submit FAA Form 7460-1 for this project. If you have any questions regarding the project, please contact Janelle Stokes at (409) 766-3039.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

Enclosures (3)

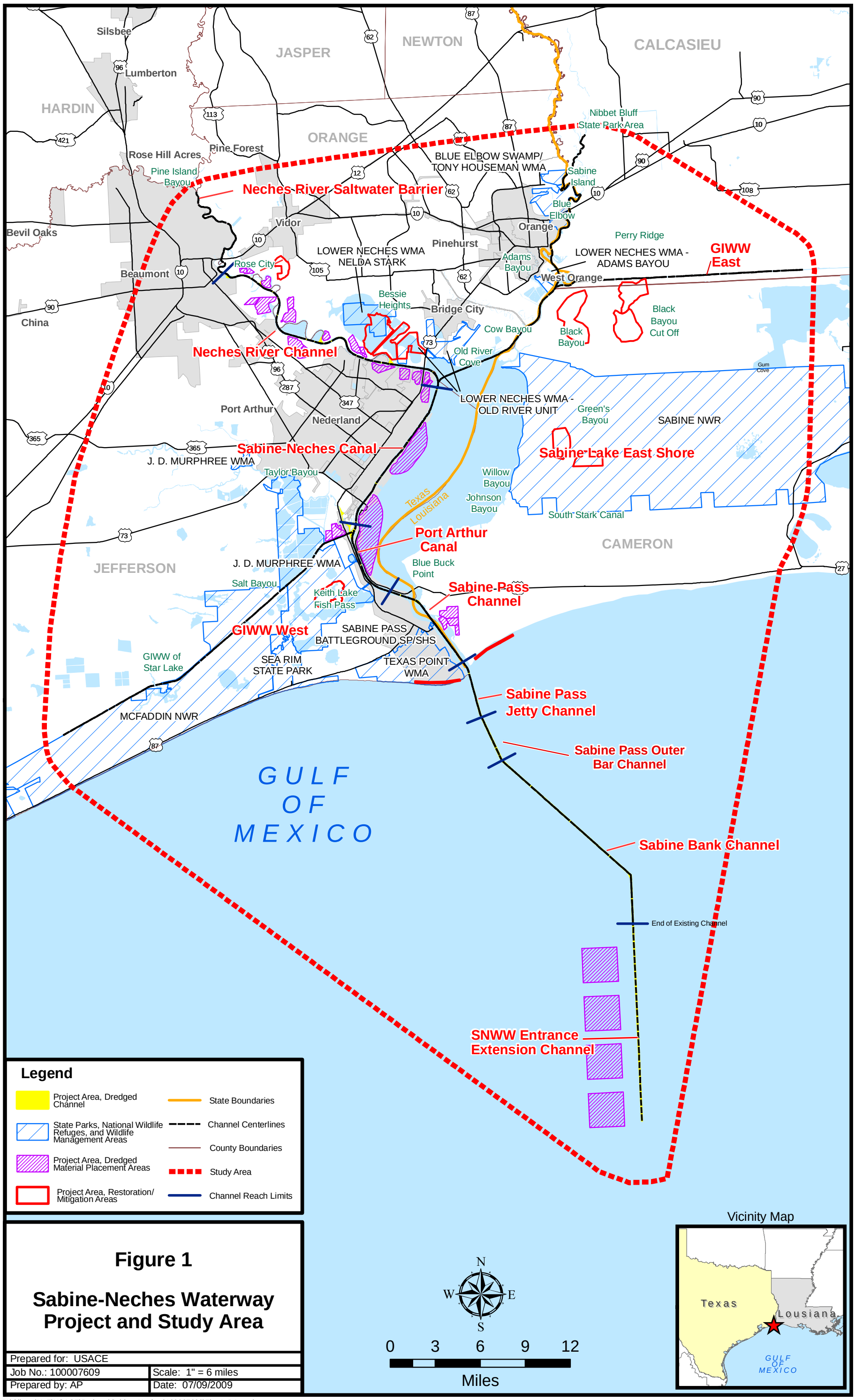


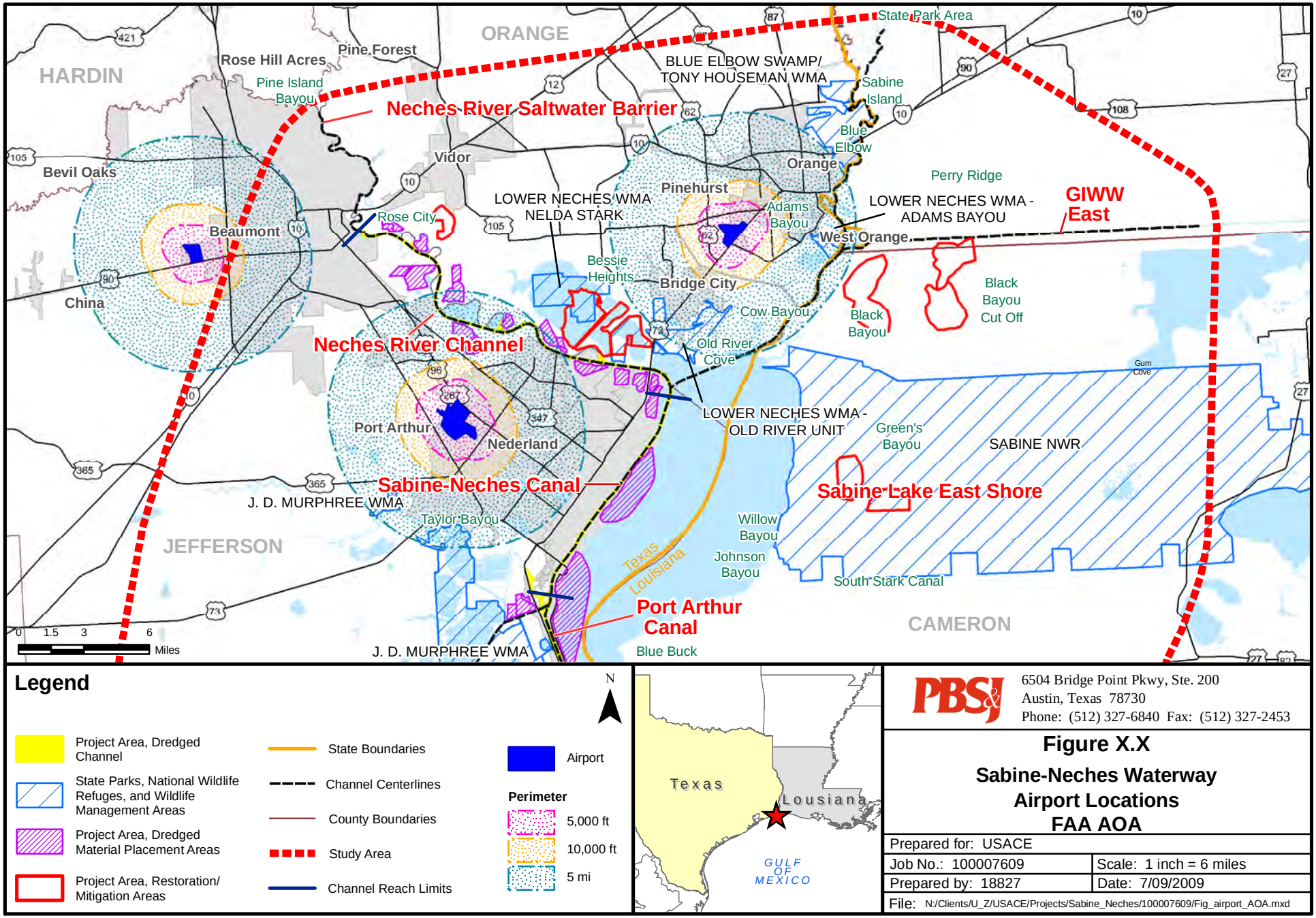
Figure 1

Sabine-Neches Waterway Project and Study Area

Prepared for: USACE	
Job No.: 100007609	Scale: 1" = 6 miles
Prepared by: AP	Date: 07/09/2009

N:\Clients\U_Z\USACE\Projects\Sabine_Neches\100007609\Fig_1_BA.mxd

Figure 2



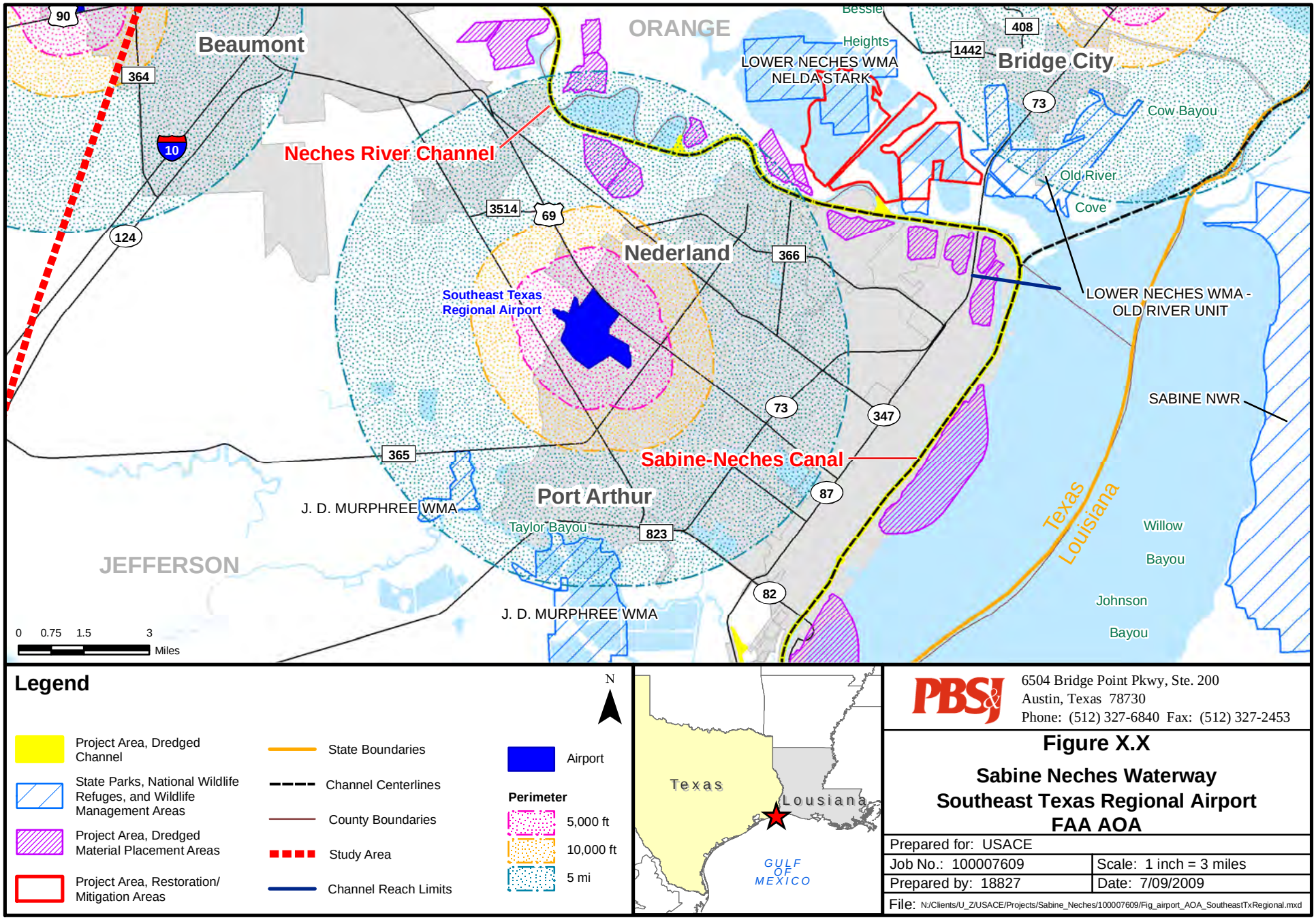
PBSJ
6504 Bridge Point Pkwy, Ste. 200
Austin, Texas 78730
Phone: (512) 327-6840 Fax: (512) 327-2453

Figure X.X

Sabine-Neches Waterway Airport Locations FAA AOA

Prepared for: USACE	
Job No.: 100007609	Scale: 1 inch = 6 miles
Prepared by: 18827	Date: 7/09/2009
File: N:/Clients/U_Z/USACE/Projects/Sabine_Neches/100007609/Fig_airport_AOA.mxd	

Figure 3



PBSJ

6504 Bridge Point Pkwy, Ste. 200
Austin, Texas 78730
Phone: (512) 327-6840 Fax: (512) 327-2453

Figure X.X

Sabine Neches Waterway
Southeast Texas Regional Airport
FAA AOA

Prepared for: USACE	
Job No.: 100007609	Scale: 1 inch = 3 miles
Prepared by: 18827	Date: 7/09/2009
File: N:/Clients/U_Z/USACE/Projects/Sabine_Neches/100007609/Fig_airport_AOA_SoutheastTxRegional.mxd	

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
101 South Main Street
Temple, TX 76501

March 16, 2010

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

Subject: LNU--Farmland Protection, Draft Environmental Impact Statement
for the Sabine-Neches Waterway Channel Improvement Project
Texas Ocean Dredged Material Disposal Site Designation
Jefferson and Orange Counties, Texas

We have reviewed the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project/Texas Ocean Dredged Material Disposal Site Designation in Jefferson and Orange Counties, Texas, as outlined in your letter of March 5, 2010. This is part of the National Environmental Policy Act (NEPA) evaluation for the U.S. Army Corps of Engineers.

The soil mapped in the proposed project area is not Important Farmland and is, therefore, exempt from the FPPA. We have completed a Farmland Conversion Impact Rating (form AD-1006) indicating the exemption. 1

We are enclosing the completed AD-1006 for the project indicating the approval status. Thank you for the resource materials you provided. If you have any questions please contact Micki Yoder at (254) 742-9826, Fax (254) 742-9859.

Sincerely,

For DONALD W. GOHMERT
State Conservationist

Enclosure

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request March 5, 2010
Name of Project Proposed Sabine-Neches Waterway Channel Improvement Project	Federal Agency Involved Dept. of the Army-U.S. Army Corps of Engineers
Proposed Land Use Texas Ocean Dredged Material Disposal Site	County and State Jefferson/Orange Counties, Texas
PART II *(To be completed by NRCS)*	Date Request Received By NRCS March 9, 2010

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☒	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS March 10, 2010	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160				
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side)

Form AD-1006 (03-02)

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
101 South Main Street
Temple, Texas 76501-7602
Telephone: 254-742-9800 Fax: 254-742-9819

January 14, 2010

Ms. Janelle Stokes
Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Dear Ms. Stokes:

We have reviewed the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Site, as outlined in your letter of December 16, 2009. This is part of the National Environmental Policy Act (NEPA) evaluation for the U.S. Army Corps of Engineers. We are unable to evaluate the proposed areas as required by the Farmland Protection Policy Act (FPPA) until exact locations are identified.

Please find enclosed a Jefferson and Orange Counties Prime Farmland Site Map and a Jefferson and Orange Counties Hydric Rating. If there are other soils criteria needed please let us know and we will send those as well.

If you have any questions, please contact Micki Yoder, state resources inventory coordinator, at (254)-742-9826; Fax (254)-742-9859.

Sincerely,

Donald W. Gohmert

DONALD W. GOHMERT
State Conservationist

Enclosure

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

March 4, 2010

Environmental Section

Mr. Donald W. Gohmert
State Conservationist
Natural Resources Conservation Service
101 South Main Street
Temple, Texas 76501-7602

Dear Mr. Gohmert,

As requested by your letter of January 14, 2010, we are hereby providing additional information on the precise location of Tentatively Recommended Plan features for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana. A map is enclosed that locates the navigation channel, placement areas and marsh restoration areas relative to hydric soils and prime farmland in the study area (Enclosure 1). All of the project features are located within existing waterways, unclassified areas, or in hydric soil areas with the exception of 49 acres in proposed Placement Area (PA) 24A, which is classified as "Prime Farmland Soil When Drained."

We have completed Form AD-1006 (Farmland Conversion Impact Rating) and the site has received a total Part VI point score of 37 (Enclosure 2). Neither the site nor the areas around it are currently being farmed, and it is adjacent to urban areas and an existing leveed PA. We are proposing to convert the 49 acres to a leveed PA for the containment of dredged material from the adjacent Sabine-Neches Waterway Navigation Channel.

We request your evaluation of the proposed action's impacts as required under the Farmland Protection Policy Act. If you have any questions, please contact Ms. Janelle Stokes at 409/766-3039.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

CF
Micki Yoder, NRCS

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1001 Indian School Road NW, Suite 348
Albuquerque, New Mexico 87104

ER 10/32
File 9043.1

February 5, 2010

Via Electronic Mail

Janelle Stokes
U.S. Army Corps of Engineers
Galveston District
PO Box 1229
Galveston, Texas 77553-1229

Subject: Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Texas and Louisiana

Dear Ms. Stokes:

The U.S. Department of the Interior has reviewed the U.S. Army Corps of Engineers, Galveston District's Draft Feasibility Study (DFS) and Draft Environmental Impact Statement (DEIS) for the proposed Sabine-Neches Waterway Channel Improvement Project. The Corps proposes to deepen and maintain, for 50-years, the existing 64-mile-long by 40 feet-deep inland Sabine-Neches channel to 48 feet-deep with 4 feet of additional advanced and overburden dredging (52 feet-deep total), deepen the existing Sabine-Neches Gulf of Mexico channel from 42 feet-deep to 50-feet-deep with 4 feet of additional advanced and overburden dredging (54 feet-deep total), and dredge a 13.2 mile-long new Gulf of Mexico channel 54-feet-deep by 700-feet-wide. Existing channel widths of 400 to 500 feet-wide for the inland reach and 700 feet-wide for the Gulf reach will not be changed.

Project benefits include more efficient vessel loading/off-loading and reduced navigation delays by accommodating larger vessels. In order to compensate for environmental impacts to fish, wildlife and wetland resources, the project includes beneficial use (BU) of dredged material in a Dredged Material Management Plan (DMMP) in Texas, beneficial use at the Louisiana Point and Texas Point Gulf shorelines, and BU and compensatory mitigation in the form of marsh restoration using dredged material on Sabine National Wildlife Refuge and in marshes north of Black Bayou, LA.

We reviewed the information provided, and offer the following comments in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.), the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.),

Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d), and the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The draft Feasibility Report and DEIS provide an excellent description of fish and wildlife resources within the study area, the purpose and need for the proposed action, program objectives, critical needs and opportunities, and potential risks and uncertainties. Implementation of the greater than $1.2 billion, 50-year Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) would increase economic shipping efficiency by deepening the existing channel to allow larger vessels (primarily crude oil) to access and dock at the ports of Port Arthur and Beaumont. The Sabine-Neches Waterway (SNWW) provides 12% of the nation's crude oil transportation and an average of 141 million tons of shipping per year (2004-2006). Larger vessels must lighter their loads in the Gulf of Mexico and are prevented from two-way traffic in inland parts of the Sabine-Neches waterway. These practices cause transportation delays and increased costs. 1

The Galveston District established an Interagency Coordination Team (ICT) composed of Federal and state agency representatives from Texas and Louisiana to review the SNWW CIP's environmental impacts and recommend BU and mitigation. The Louisiana and Clear Lake Texas Ecological Services Field Offices represented the U.S. Fish and Wildlife Service on that ICT. The Corps and the ICT evaluated over 120 different combinations of depths (from 43 to 55 feet-deep) and widths. Three alternatives were carried forward after the analysis: the no-action alternative, a deepening and widening alternative, and the preferred alternative. In the no-action alternative, it is assumed that the SNWW enlargement would not be implemented and the existing shipping delays would continue. Channel dredging and disposal activities, including existing beneficial use projects, would continue in accordance with the current Federal standard. The Preferred alternative would increase the existing SNWW channel depth by 12 feet in the inland and Gulf channels (52 feet and 54 feet respectively), including advanced and overdraft dredging.

Specific Comments

<u>DEIS 2.4.2 Dredged Material Placement Areas, Page 2-45; 2.4.2.2 DMMP Beneficial Use Features, Page 2-46; 5.5 Recommended Mitigation Plan, Pages 5-21 to 5-26</u> – The FWS recommends the creation of an interagency work group (i.e., Interagency Coordination Team) during post-authorization planning, and continue the work group through the detailed planning and construction phases. The work group would execute important design, inspection, and monitoring functions for habitat creation features. 2

The FWS recommends that the Corps implement a DMMP BU and mitigation monitoring program to consist of aerial photography interpretation, elevation, and vegetation surveys to be conducted periodically during the project life to ensure that the BU and mitigation is successful at offsetting project impacts during the project life. In addition, the FWS recommends the creation and implementation of an invasive species control plan that addresses both invasive flora and fauna in the project area. 3

<u>DEIS 2.4.2 Dredged Material Placement Areas, Pages 2-45 to 2-46; 5.0 Mitigation Plan, Pages 5-20 to 5-26</u> - SNWW Dredged Material Management Plan (DMMP) that will use dredged 4

material from the SNWW channel beneficially, restoring 3,190 acres of marshes adjacent to the lower Neches River and 337 acres at the Texas Point Gulf shoreline, for a net + 3,280 acres (+ 656 AAHUs) benefit in Texas. Louisiana Point Gulf shoreline beneficial use with dredged maintenance material from the SNWW CIP (+ 337 acres), BU and compensatory mitigation [+ 2,783 acres (1,181 AAHUs] yields a net + 2,429 acres (+ 22 AAHUs) in Louisiana. We concur that the beneficial use and compensatory mitigation fully compensates for predicted SNWW CIP impacts to wetlands within the project area.

In accordance with the January 2003 Partnership Agreement for Water Resources and Fish and Wildlife between the FWS and the Corps, sufficient continuous funding should be provided to the FWS to fulfill our responsibilities under Section 2(b) of the FWCA throughout post-authorization planning and evaluation for individual beneficial use projects. Accordingly, to ensure that optimum fish and wildlife resource benefits are achieved, the FWS will continue to work closely with the Corps and the States of Louisiana and Texas throughout the plan implementation process as a member of the ICT during the detailed design and implementation phase. Our findings and recommendations for each of the mitigation projects approved for implementation will be provided in draft and final supplements to this DEIS under the authority of the FWCA. Fulfillment of Section 7 of the ESA of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) responsibilities would also be accomplished at that time. 5

<u>DEIS 3.12 Threatened and Endangered Species, Pages 3-94 to 3-95</u> – The FWS actively participated in the development and review of the Biological Assessment of the SNWW's effects on threatened and endangered species. In the FWS's March 22, 2007, letter, the FWS Lafayette, Louisiana, Field Office concurred with the Corps' determination that the SNWW CIP project would not be likely to adversely affect the threatened Louisiana black bear (*Ursus americanus luteolus*), endangered West Indian manatee (*Trichechus manatus*), endangered brown pelican (*Pelecanus occidentalis*), endangered interior least tern (*Sterna antillarum*), endangered red-cockaded woodpecker (*Picoides borealis*), threatened bald eagle (*Haliaeetus leucocephalus*), and threatened piping plover (*Charadrius melodus*), and its designated critical habitat in Louisiana. Minor project revisions would not result in additional effects to those species beyond what was already considered; therefore our determinations remain unchanged. 6

Brown pelicans (*Pelecanus occidentalis*) occur throughout the study area and are currently known to nest on Rabbit Island in Calcasieu Lake in southwestern Louisiana. Although no brown pelican nesting sites are known to occur within the proposed project area, they may occasionally use portions of the project area that contain suitable habitat (i.e., Sabine Pass Channel, Louisiana Point) for feeding and/or loafing. The brown pelican was officially removed from the List of Endangered and Threatened Species on December 17, 2009. For additional information please refer to the following links: 7
http://www.fws.gov/home/feature/2009/pdf/brownpelicanfinaldelisting11-10-09_to_OFR.pdf
http://www.fws.gov/home/feature/2009/pdf/brown_pelicanfactsheet09.pdf.

Although the brown pelican was officially removed from the List of Endangered and Threatened Species, it continues to be protected under the Migratory Bird Treaty Act (MBTA). Accordingly, the FWS recommends all activity in Louisiana occurring within 2,000 feet of a brown pelican rookery be restricted to the non-nesting period (i.e., September 15 through March 31). However, nesting periods vary considerably among Louisiana's brown pelican colonies, so it is possible that this activity window could be altered based upon the dynamics of the individual 8

colony. The Louisiana Department of Wildlife and Fisheries' Fur and Refuge Division should be contacted to obtain the most current information about the nesting chronology of individual brown pelican colonies. In Texas, the FWS recommends all activity occurring within 1,000 feet of a brown pelican rookery be restricted to the non-nesting season.

The bald eagle (*Haliaeetus leucocephalus*) occurs throughout the study area. Since bald eagles often nest and forage on river channels and reservoirs, steps should be taken to determine whether bald eagles may be nesting within or near the project area. While the bald eagle was officially removed from the List of Endangered and Threatened Species on July 9, 2007, it is still afforded protection under the MBTA and the Bald and Golden Eagle Protection Act. 9

Twenty-three species, including cormorants, pelicans, herons, egrets, spoonbills, gulls, terns, and skimmers, regularly nest in large numbers along the Texas and Louisiana coasts, frequently on both natural and manmade bay islands. The Texas Colonial Waterbird Census indicates that there are 25 documented rookery sites, with an estimated 2,835 nesting pairs annually since 1995, located within the study area. Colonial waterbirds are an important wildlife resource along the Gulf Coast and in the project area because of their abundance, their economic significance to the tourism industry, and their status as indicators of aquatic ecosystem health.

In recent years, the majority of successful Texas colonies have been located on islands wholly or partially maintained by dredged material. The FWS recommends using project-dredged material to construct a 2-to 12-acre, colonial waterbird nesting island located at least 1 mile from the shore in Sabine Lake. This island should include a sloping sand beach protected by a rock breakwater. The FWS can assist in the final design, location and management of the island. 10

<u>DEIS 4.0 Environmental Consequences, Pages 4-1 to 4-81</u> – Salinity and water level hydrodynamic and Wetland Value Assessment models, reviewed and approved by the ICT, predicted a loss of 691 acres [-1,709 Average Annual Habitat Units (AAHUs)] and – 247 acres (-412 AAHUs) for Louisiana and Texas wetlands adjacent to Sabine Lake over the 50-year project life. Beneficial use and compensatory mitigation plans were developed by the ICT to compensate for these losses. 11

<u>DEIS 4.11.2 Marine; 4.11.2.1.2 Preferred Alternative, Page 4-70</u> – If oyster reefs are encountered during project implementation, the Galveston Corps should replace any reefs damaged by the project on a 1:1 basis with suitable bottoms within Sabine Pass or in the southern portion of Sabine Lake. Oyster habitat mitigation should be accomplished concurrently with channel construction, and should consist of at least a 1-foot thick layer of shell or suitable cultch material (i.e., limestone or fly-ash rock), and should be followed up at one (1) year post-construction with bottom profiling survey and grab sampling to insure adequate relief (minimum average 0.5 feet above bay and pass bottom) and oyster spat coverage. This mitigation is not needed if no Sabine Lake or Pass oyster habitat is disturbed by project features. 12

<u>DEIS 5.5 Recommended Mitigation Plan, Pages 5-21 to 5-26</u> - The FWS concurs with Willow Bayou Unit mitigation Alternative "B," restoring marsh on the Sabine NWR through dedicated dredging of material from Sabine Lake and placing that material in open water areas on that Refuge north of the Willow Bayou Canal**.** However if Alternative "B" should not prove viable, the FWS recommends that Alternative "C," beneficial use of new work material from the SNWW, be used to restore marsh on Sabine NWR, or the rock breakwater shoreline stabilization 13

measures, or Sabine NWR terracing measures be implemented as long as the acres protected/restored and AAHUs gained fully compensate for project impacts.

The FWS recommends that the Corps construct the Sabine-Neches project mitigation at the same time as waterway enlargement construction is performed and that the Corps require protective easements on privately owned lands where Sabine-Neches BU and mitigation is to be performed to ensure that the habitat restoration and enhancement work is not compromised by future development activities. 14

The FWS recommends the construction of tidal creek channels (or trenasses) at least 10 feet-wide and 2 feet-deep in the restored marsh, 6 months to a year, if necessary, after disposal in order to return the area to natural hydrology for tidal movement and estuarine aquatic organism access to the restored marshes. The tidal creeks could be constructed by tracking marsh buggy track-hoes, or similar equipment, over proposed creek channel routes. The dredged material pipeline for marsh restoration (i.e., Willow Bayou and Black Bayou Units mitigation) should be placed in existing canals and waterways to the greatest extent practicable to minimize marsh damage. 15

DEIS 5.51 Willow Bayou Mitigation, Table 5.5-1 Recommended Mitigation Plan, Page 5-22 - The FWS recommends that the Corps review their calculations for volumes of dredged material needed to achieve the listed Louisiana mitigation and questions whether the Corps would be able to achieve the degree of marsh restoration depicted in the recommended mitigation plan with unconfined placement of dredged material. 16

The FWS recommends that the Sabine Lake borrow area be located at least 1,000 feet westward of the eastern Sabine Lake shoreline to minimize borrow area shoreline impacts. The Corps should acquire a refuge Special Use Permit from the Sabine NWR (Don Voros, Manager, Southwest Louisiana Refuges Complex, 1428 Hwy 27, Bell City, LA 70630; 337-598-2216) to coordinate the final planning for the dedicated dredging marsh restoration mitigation on Sabine NWR. 17

DEIS 5.2.2 Agency Participation, Page 154 – The FWS will provide a revised FWCA Report in February 2010, which will provide additional recommendations. Many of the FWS's draft SNWW FWCA recommendations have been addressed in the DFR and DEIS. 18

Comments from the National Park Service

The potential environmental impacts that are of concern to Big Thicket National Preserve are that a deeper channel in Sabine Lake and the Neches River will increase the influence of Gulf tides, increase salinity, and raise water surface elevation at Preserve lands within the study area, leading to degradation of freshwater marsh, bottomland hardwood forest habitat, and salinity effects to cypress-tupelo swamps. The effects of the deeper channel, in concert with potential reductions in freshwater in-flows from the Neches River during times of subsistence or dry base flow (i.e., drought) could cause damage to salinity-intolerant species including tupelo trees and benthic macroinvertebrates. 19

Big Thicket National Preserve acquired lands by donation from The Conservation Fund in April 2009 (http://www.conservationfund.org/news/big_thicket_land_gift) including approximately 20

6,000 acres of cypress-tupelo swamp, bottomland hardwood forest, and freshwater marsh that lie below the Saltwater Barrier, at the upper margins of the project study area. The new Preserve lands, which are not identified anywhere in the DEIS as being part of the Preserve, are referred to in the DEIS as hydrologic units "TX-1 North Neches River" and "TX-2 Neches-Lake Bayou." Preserve lands comprise much of these two units, mainly on the east side of the Neches River, extending south to Interstate Highway 10 (I-10). The DEIS notes severely stressed marshes, marsh subsidence, and wetland loss in the Neches River reach between Sabine Lake and I-10, directly adjacent to the Preserve. Our concern is that the Preserve may become the new frontline separating intact and degraded systems, or that worsening conditions and wetland loss may spread northward and engulf areas of Big Thicket National Preserve.

Areas of the Preserve would be influenced by the proposed project according to analysis in the DEIS: the Hydrodynamic-Salinity model (Table 4.6-3) forecasts an increase in salinity in the upper Neches River from 0.1 ppt to 0.26 ppt under low flow conditions; salinities in the cypress- 21
tupelo swamps in the upper Neches reaches are predicted to increase by 0.3 ppt; and surface water elevations are expected to increase an average of 0.8 inch in the upper reaches of the Neches River due to greater tidal influence. These conditions have the potential to reduce primary productivity in Preserve freshwater marsh habitat, reducing biomass, and leading to eventual submergence and loss.

We would like to see discussion of how the channel deepening would affect the magnitude of tidal and storm surge from Tropical storms, greater consideration for mitigation measures to prevent long-term and short-term increases in salinity in the Neches River and adjacent freshwater marsh habitat, and modeling of salinities and freshwater inflows for dry base flow and 22
subsistence flow conditions that are described in the Sabine and Neches Rivers and Sabine Lake Bay, Basin and Bay Expert Science Team Environmental Flows Recommendations Report (November 2009).

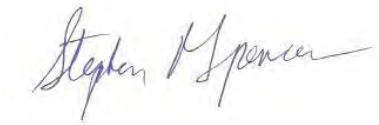
On page 3-148 Big Thicket National Preserve should be described as 106,684 acres, and being in 23
portions of seven counties in southeast Texas (Hardin, Jefferson, Orange, Tyler, Polk, Jasper, and Liberty). Throughout the document, Preserve lands should be represented on maps and 24
figures that show refuges and other conservation lands. Additionally, the DEIS was apparently 25
sent to the Preserve at a pre-Hurricane Rita address that is no longer in use. Please send future correspondence to:

Todd W. Brindle, Superintendent
Big Thicket National Preserve
6044 FM 420
Kountze, TX 77625

If you have any questions or if we can be of any further assistance in providing maps or other information, please contact David Roemer, Chief of Resources Management, Big Thicket National Preserve, at (409) 951-6820.

We appreciate the opportunity to comment on the draft SNWW CIP DFR and DEIS. If your staff has questions regarding our comments, please feel free to contact me at (505) 563-3572.

Sincerely,



Stephen R. Spencer
Regional Environmental Officer

cc: Barbara Keeler, EPA Region 6, Dallas, TX
Richard Hartman, NOAA/NMFS, Baton Rouge, LA
Kyle Balkum, LDWF, Baton Rouge, LA
Natural Heritage Program, LDWF, Baton Rouge, LA
David Fruge, Louisiana Office of Coastal Protection and Restoration, Baton Rouge, LA
Greg Ducote, Louisiana Department of Natural Resources, Baton Rouge, LA

Mr. Stephen R. Spencer
Regional Environmental Officer
U.S. Department of the Interior
Office of Environmental Policy and Compliance
1001 Indian School Road NW, Suite 348
Albuquerque, New Mexico 87104

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comment.
2	If the proposed project is approved, U.S. Army Corps of Engineers (USACE) would continue working with the existing Interagency Coordination Team (ICT) during preconstruction, engineering, and design (PED), construction and operation of the project. Specific ICT involvement relative to the design, inspection and monitoring of beneficial use (BU) features and mitigation measures are described in the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) Mitigation and Beneficial Use Monitoring Plan (Final Environmental Impact Statement (FEIS) Appendix J).
3	FEIS Appendix J presents the SNWW CIP Mitigation and Beneficial Use Monitoring Plan. The frequency and periodicity of aerial photography and interpretation and vegetation surveys are specified in the plan. Construction contracts would ensure that elevations appropriate for marsh survival are achieved by the initial construction. The plan includes monitoring and control of invasive, noxious and/or exotic plants.
4	The FEIS has been revised to note that the USFWS concurs that the beneficial use features and compensatory mitigation fully compensate for predicted SNWW CIP impacts.
5	USACE looks forward to continuing our work with the USFWS throughout post authorization planning. The U.S. Fish and Wildlife Service (USFWS) Coordination Act Report (CAR) is presented in FEIS Appendix A3.
6	The FEIS sections on Endangered Species impacts and coordination have been revised to note that minor project revisions subsequent to the original coordination do not change the March 22, 2007 determination.
7	The threatened and endangered species section of the FEIS will be updated to reflect the fact that the brown pelican was officially removed from the List of Endangered and Threatened Species on December 17, 2009.
8	Draft EIS (DEIS) Section 7.7 (Migratory Bird Treaty Act and Migratory Bird Conservation Act) states that construction contracts will include instructions to avoid impacts to migratory birds (including brown pelicans) and their nests from all activities related to the SNWW CIP. During the preparation of plans and specifications, USACE will check with designated state agencies to obtain the most current information about nesting colonies. All construction activity in Louisiana occurring within 2000 ft of a brown pelican rookery will be restricted to the non-nesting period. In Texas, all activity occurring within 1,000 feet of a rookery will be restricted to the non-nesting season.
9	During the preparation of plans and specifications, USACE will check with state and federal agencies to obtain the most current information about bald eagle nests in the SNWW CIP construction areas.
10	Creation of a bird island in Sabine Lake using dredged material from the proposed SNWW CIP was evaluated and eliminated from consideration when the cost was found to be about $ 2 million higher than the use of existing placement areas, and since no non-Federal sponsor has been identified to share the incremental cost (see DEIS Section 2.5.3.1).
11	USACE concurs that project impacts, as determined by the Wetland Value Assessment (WVA) model and reviewed by the ICT, are a predicted loss of 691 acres (-1709 AAHUs) in Louisiana and a loss of 247 acres (-412 Average Annual Habitat Units [AAHUs]) in Texas, prior to application of BU feature benefits and compensatory mitigation (See DEIS Table 2.4-16 and Section 4.1.4.1)
12	FEIS Section 4.11.2.1.2 evaluates the potential for impacts to oyster reef by the proposed SNWW CIP. No impacts to oyster reef are anticipated in Sabine Pass because the channel is not being widened and no slumping is expected at the top of cut. No impacts to oyster reef in Sabine Lake are

	anticipated because salinities are generally too low to support spat growth, as confirmed by recent survey. Furthermore, as stated in FEIS Section ES.5 and Section 5.5.1, USACE has proposed that a water bottom survey of the borrow and access channel areas in Sabine Lake be conducted during the preconstruction engineering and design (PED) phase of the project. In the unlikely event that oyster reef is encountered, plans will be revised to avoid impacts.
13	The FEIS has been revised to note that the USFWS concurs with the selected Willow Bayou mitigation plan, which would use material from the dedicated dredging of Sabine Lake. If the proposed SNWW ICT is approved, USACE would continue consultation with the ICT (which includes USFWS) during the PED phase to perform and evaluate geotechnical analyses of the proposed source material.
14	USACE plans to construct the proposed Willow Bayou, Black Bayou East and first phase of Black Bayou West concurrently with proposed channel deepening. The remaining 5 phases of the Black Bayou West mitigation measure would be completed over approximately the next 30 years in conjunction with maintenance dredging of the Sabine River Channel. The Black Bayou East and West mitigation measures are located on private property. USACE has determined that conservation easements are not required because all restored areas would remain jurisdictional wetlands and would continue to be subject to the navigational servitude (Feasibility Report [FR] Section VIII.E).
15	The FEIS Section 5.5.1 description of proposed mitigation measures includes tidal creek channels, as recommended by USFWS. USACE will consult with the ICT (which includes USFWS) during PED to minimize impacts to existing marsh during construction of the mitigation measures.
16	As recommended, USACE has reviewed our calculations for volumes of dredged material required for Louisiana mitigation measures, and it has been determined that the calculations are sufficient for the feasibility level of design.
17	FEIS Section 5.5.1 states that the borrow trench would be located at least 1000 feet from the SNWR shoreline, and that the exact location of the trench would be determined in consultation with the ICT (which includes USFWS) during PED. USACE has requested a compatibility determination from the SNWR for the proposed Willow Bayou mitigation area.
18	The USFWS's revised CAR, dated March 2010, is presented in FEIS Appendix A-3. USACE responses to the CAR are presented in the same appendix.
19	Potential impacts of the deeper navigation channel to hydrounits containing the newly acquired areas of the Big Thicket National Preserve downstream of the Neches River Saltwater Barrier were evaluated by ERDC's Hydrodynamic Salinity modeling (HS model) (Brown and Stokes 2009). This modeling, summarized in FEIS Section 4.1, incorporated Year 2060 future flow projections that are based upon assumptions of the 2007 Texas State Water Plan and projected effects of relative sea level rise. As described in FEIS Sections 4.1.2.2, Table 4.1-1, and Section 4.6.3.2.2, no project impacts are expected during median or low flows.
20	The new preserve lands were acquired by the National Park Service (NPS) during the final preparation of the DEIS, and thus were not identified in that document. See response to comment 19 concerning potential for proposed SNWW CIP to affect these areas of the Big Thicket National Preserve.
21	See response to comment 19 above.
22	A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010).The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5. Given the fact that impacts of the proposed SNWW CIP are related primarily to salinity intrusion, extensive efforts have already been made to identify effective mitigation measures that could minimize or eliminate the projected increase in salinity. The results of this effort are presented in FEIS Section 5.4.1.1. The HS modeling performed for this study by ERDC employed a state-of-the-art model to evaluate potential salinity impacts for both median and low flows, and the technical adequacy of the HS modeling has been sustained by Agency Technical Review (ATR) and Independent External Peer Review (IEPR). USACE believes that further HS modeling is not warranted.
23	The acreage of the Big Thicket National Preserve has been changed to reflect this updated information. Text has been changed to clarify that Big Thicket National Preserve is located within portions of Hardin and Orange counties, Texas in the vicinity of the study area.

24	New preserve lands have been included in FR/FEIS maps, and are discussed in FR (Chapter 1, Sensitive Areas), FEIS Section 3.9.2, and FEIS Appendix C, Section 1.5.1.
25	The mail list has been updated to reflect this information.

TEXAS GENERAL LAND OFFICE

JERRY PATTERSON, COMMISSIONER

February 8, 2010

DCW 10 FEB 2010 TO P.E.M.

Colonel David C. Weston
U. S. Army Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

RE: **Sabine Neches Waterway Improvement Project**

Dear Col Weston:

The proposed project consists of the deepening and expanding of navigation channels in the Sabine Neches Waterway and placement of the associated dredge material. Based on the information contained in the Draft Environmental Impact Statement and the Feasibility Report, much of the proposed dredging and dredge material placement is located on state owned submerged lands.

The General Land Office (GLO) and School Land Board are responsible for managing and authorizing the use of state owned submerged land dedicated to the Permanent School Fund. While Navigational Servitude covers the project and no lease or easement will be required, there may be impacts that the GLO will need to address. Based on a review of the project, there appear to be multiple pipelines with easements authorizing their placement on state owned submerged land that will be impacted. Also the project may impact current mineral leases and future mineral leases on state land that are managed by the GLO.

The GLO is requesting an additional 90 days (until May 10, 2010) to review the Draft Environmental Impact Statement to determine the impact the project will have on state mineral leases and pipeline easements, and other possible impacts from the project. The GLO has also been contacted by representatives for the pipeline operators who will be impacted by this project and who are also seeking additional time to evaluate this proposal. This seems like a reasonable request given the amount of state owned submerged land that will be impacted by the project. After a complete review, the GLO may have additional comments and concerns about the project. 1

If you have any questions concerning this request, please contact Deputy Commissioner Rene D. Truan at (512) 463-5200 or by e-mail at rene.truan@glo.state.tx.us .

Sincerely,

JERRY PATTERSON
Commissioner, Texas General Land Office

CC: Larry Laine, General Land Office
Rene Truan, General Land Office
Janelle Stokes, U.S. Army Corps of Engineers

Mr. Jerry Patterson
Commissioner
Texas General Land Office
Stephen F. Austin Building
1700 North Congress Avenue
Austin, TX 78701-1495

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period was extended an additional 30 days to March 12, 2010.

LOWER NECHES VALLEY AUTHORITY

MUNICIPAL • INDUSTRIAL • AGRICULTURAL WATER

February 18, 2010

Ms. Janelle Stokes
Galveston District
U.S. Army Corps of Engineers
CESWG-PE-PR
P. O. Box 1229
Galveston, TX 77553

RE: Resolution Concerning the Sabine-Neches Waterway Channel Project

Dear Ms. Stokes:

The attached Resolution supporting the Sabine-Neches Waterway Channel Project was approved by the Board of Directors at its February 16, 2010 meeting. Please call me at 409-892-4011 if you have any questions or if you need additional information.

Yours very truly,

Scott Hall

Scott Hall, P.E.
General Manager

Office Location 7850 Eastex Freeway, Beaumont, Texas 77708-2815 • (409) 892-4011
Mailing Address P.O. Box 5117, Beaumont, Texas 77726-5117 • FAX (409) 898-2468
Internet Address • http://www.lnva.dst.tx.us

STATE OF TEXAS	§	**LOWER NECHES VALLEY AUTHORITY**
COUNTY OF JEFFERSON	§	

BE IT REMEMBERED at a meeting of BOARD OF DIRECTORS OF THE LOWER NECHES VALLEY AUTHORITY held on the 16th day of February, 2010, on motion made by Director Kathleen Jackson and seconded by Director Jordan Reese, the following Resolution was adopted:

Resolution Concerning the Sabine-Neches Waterway Channel Project

WHEREAS, the U.S. Army Corps of Engineers (USACE), in concert with Sabine-Neches Navigation District has proposed a project to deepen the Sabine-Neches Waterway; and

WHEREAS, USACE has prepared a study analyzing the feasibility and environmental impacts of the proposed improvement to the Sabine-Neches Waterway that serves the ports of Beaumont and Port Arthur, Texas and the proposed improvements reasonably accommodate environmental concerns; and

WHEREAS, the USACE study clearly demonstrates the necessity for these improvements to provide a safe and efficient waterway that will accommodate the current and future needs of our ports and industry; and

WHEREAS, the project is also critical for the National Defense, and the proposed improvements are clearly cost effective and will enable our ports to facilitate the handling of vital military cargo; and

WHEREAS, the project would provide a positive economic benefit and would benefit the people of Jefferson County, the State of Texas, and many States beyond our region;

NOW THEREFORE, be it resolved that the Board of Directors of the LOWER NECHES VALLEY AUTHORITY urge all elected officials and citizens to support this project and the adoption of the plan for these improvements as proposed.

AND BE IT FURTHER RESOLVED that the Corps affirm its plan and submit the plan to its headquarters for finalization.

PASSED AND ADOPTED by the Lower Neches Valley Authority Board of Directors this **16th day of February, 2010.**

President

Secretary

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

FEB 1 8 2010

Mr. Dolan Dunn
Chief, Planning, Environmental &
Regulatory Division
New Orleans District
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Dunn:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the DEIS for the Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation.

EPA rates the DEIS as "LO", i.e., EPA has a "Lack of Objections" to the proposed action described in the DEIS. EPA has enclosed detailed comments for further consideration in the development of the Final EIS and asks that these comments be responded to in that document. 1

Our rating of this DEIS will be published in the Federal Register according to our responsibility under Section 309 of the Clean Air Act to inform the public of our views on proposed Federal actions. If you have any questions, please contact me at (214) 665-7451 or by e-mail at jansky.michael@epa.gov.

EPA appreciates the opportunity to review the DEIS. Please send our office two copies of the Final EIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,

Cathy Gilmore

Cathy Gilmore, Chief
Office of Planning
and Coordination 6ENXP

Enclosure

DETAILED COMMENTS
ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE
SABINE NECHES WATERWAY CHANNEL
IMPROVEMENT PROJECT
SOUTHEAST TEXAS AND SOUTHWEST LOUISIANA

The Region 6 Office of the EPA has reviewed the DEIS and Draft Feasibility Report prepared by the Galveston District of the Corps for the Sabine-Neches Waterway Channel Improvement Project. We currently have only one outstanding issue to raise which is that the Draft U.S. Fish and Wildlife Service Coordination Action Report is pending and the results of that report should be used to make any necessary adjustments to the mitigation and dredged material disposal plans for the tentatively selected plan. 2

Five years ago, EPA Region 6 set up a NEPA Cooperating Agency agreement with the Galveston Corps District for this project. The Corps was starting feasibility studies on a channel expansion and they knew that, in addition to options for widening and deepening, they would look at extending the channel out into the Gulf for 13-17 more miles. That distance would make it expensive to transport material to the four existing Ocean Dredged Material Disposal Sites (ODMDS) and they might propose an additional four more ODMDS's further out and along the expanded channel.

EPA Region 6 and the Galveston District Corps set up a process whereby the Corps' channel improvement DEIS (which would involve a new DMMP devised by an interagency team) would contain an appendix that would essentially be a stand alone ODMDS DEIS, including a Site Management and Monitoring Plan (SMMP). As a NEPA Cooperating Agency and a member of the Interagency Coordination Team and various sub-committees, Region 6 could direct the analyses for the ODMDS work. The thought was that if the Corps did the analyses and NEPA documentation as we instructed, the Region could then basically take a "ready to go" NEPA document prepared by the Corps, make any revisions as necessary, publish it as an EPA ODMDS DEIS (if necessary), and follow with EPA rulemaking. This could optimize project planning and public involvement, as well as making effective use of federal funding.

As a member of the interagency team, Region 6 worked for several years on the dredged material disposal plan (DMMP), beneficial use (BU) options, salinity change analyses, and wetland mitigation issues. The Region has followed the development and analysis of project alternatives. We support the project planning process that was used, which included an evaluation of non-structural alternatives and which applied the principles of Regional Sediment Management in evaluating alternatives and in developing the DMMP for the tentatively selected plan.

The tentatively recommended plan would result in an estimated 98 million cubic yards of new work dredged material and 650 million cubic yards of maintenance material over the 50-year period of analysis. Disposal of this material would be managed in accordance with the new DMMP, which is described in these documents. The DMMP includes an extensive BU plan that

would direct the use of both new work and maintenance dredged material to restore degraded marshes and to nourish Gulf shorelines.

BU features of the DMMP (Neches River and Gulf shoreline features) would minimize and offset all direct and indirect marsh impacts in Texas by creating 2,853 acres of emergent marsh vegetation, improving 871 acres of open water habitat, and nourishing 1,234 acres of existing marsh. Therefore, no compensatory mitigation is proposed to offset projected wetland impacts from the tentatively selected plan in Texas. Unavoidable losses to marshes in Louisiana are fully mitigated, according to WVA analyses, by marsh creation in the Willow Bayou and Black Bayou watersheds east of Sabine Lake. In addition to offsetting projected wetland habitat losses, the mitigation plan would compensate for the projected salinity increase and associated losses in biological function and productivity by marsh creation in the Willow and Black Bayou watersheds.

Region 6 supports the decision not to recommend the creation of a topographic high offshore of Louisiana Point as an additional mitigation measure, using new work material dredged the Sabine Bank and Extension Channels. The ecological benefits of such a feature have not been sufficiently demonstrated and, if the projected benefits were realized, they would be short-lived. Additional information would be needed to justify the associated project feature expense. 3

Additional Comments

On Page I-21, under Outdoor Recreation, the total state revenues from wildlife associated activities in Louisiana should be $3.0 billion with sporting revenues of $1.4 billion and wildlife watching bringing in $1.6 billion. 4

EPA is concerned about salinity increases in the upper Neches and the Blue Elbow Swamp mitigation bank area and other "sensitive" freshwater wetlands along the channels that are subject to tidal influences. We recommend that even though the Corps models indicate only slight increases in salinity due to widening of the channel, that the Corps monitor salinity increases and vegetative response before, during, and after project completion. We are specifically concerned about Baldcypress/Tupelo plant communites that may be sensitive to only slight increases in salinity. EPA suggests a 10-year annual monitoring plan. 5

Finally, the Document appears to adequately address the potential adverse effects of the Ocean Dredged Material Disposal Sites and therefore this EIS will suffice EPA's NEPA responsibilities to use in designating the four ODMDS at a later date. 6

If you have any other questions about this review, please give me a call. Thank you for the opportunity to provide comments at this stage in the process.

Barbara Keeler
Coastal & Wetlands Planning Coordinator
EPA Region 6 6WQ-EC)
1445 Ross Ave.,Suite 1200
Dallas, TX 75202-2733
tel: 214-665-6698
fax: 214-665-6689

Ms. Cathy Gilmore
Chief, Office of Planning and Coordination
U.S Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RESPONSE TO COMMENTS

Comment No.	Response
1	The FEIS has been revised to note that the EPA has rated the project as "LO," which means that it has no objections to the proposed SNWW CIP.
2	The USFWS CAR, dated March 16, 2010, has been included in the FEIS, Appendix A along with USACE responses to the report. USFWS concurred with the USACE mitigation and BU plans for the proposed SNWW CIP.
3	USACE notes U.S. Environmental Protection Agency (EPA) concurrence in the Ocean Dredged Material Disposal Sites (ODMDS) BU alternatives analysis related to the creation of a topographic high using new work material. USACE did not adopt this alternative.
4	The text has been revised to correct the total economic impact of wildlife-related activities in Louisiana.
5	Salinity monitoring is conducted by many state and Federal agencies throughout the SNWW study area. It is expected that this data will be available for use in assessing future conditions within the study area.
6	USACE will note in the FEIS that EPA has approved the ODMDS FEIS for use in designating the four new ODMDS at a later date.

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

February 22, 2010

Dolan Dunn
Chief, Planning, Environmental & Regulator Division
Dept. of the Army
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, TX 77563-1229

RE: **C20090667,** Coastal Zone Consistency
U. S. Army Corps of Engineers, Galveston District
Direct Federal Action
Draft EIS for the Sabine-Neches Waterway Improvements Project, Southeast Texas and Southwest, **Louisiana**

Dear Mr. Dunn:

This office has received the above referenced federal application for consistency review with the approved Louisiana Coastal Resources Program in accordance with Section 307(c) of the Federal Coastal Zone Management Act of 1972, as amended. NOAA Regulations on Federal Consistency, at 15 CFR '930.41(a), allow 60 days for the review of Direct Federal Activities, and at '930.41(c)(b) allow additional review time upon mutual agreement between the Federal agency and the State Coastal Zone Program. Please be advised that, by this letter, Interagency Affairs/Field Services Division and the Galveston Corps District have mutually agreed to extend the State review time to March 12, 2010. 1

A final determination will be made within the authorized time period, ending March 12, 2010. If you have any questions please call Brian Marcks of the Consistency Section at (225) 342-7591.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm

cc: Janelle Stokes, Galveston COE

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Mr. Gregory J. DuCote
Administrator, Interagency Affairs/Field Services Division
State of Louisiana, Department of Natural Resources
Office of Coastal Management
617 North Third Street, 10th Floor, Suite 1078
Baton Rouge, LA 70804-4487

RESPONSE TO COMMENTS

Comment No.	Response
1	The Louisiana Department of Natural Resources Office of Coastal Management (LDNR-OCM) review period for the Federal application for consistency review was extended to March 12, 2010.

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 9, 2010

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

Re: Sabine-Neches Waterway Channel Improvement Project Draft Feasibility Report and Draft Environmental Impact Statement

Dear Ms. Stokes:

As described in the Public Notice, dated December 18, 2009, the applicant, Sabine Neches Navigation District, proposes the Channel Improvement Project (CIP) to deepen and widen the Sabine-Neches Waterway (SNWW). The project is located along the Texas and Louisiana border, in Jefferson and Orange counties in southeast Texas and Cameron Parish, Louisiana.

In addition to the information contained in the public notice, the following information is needed for review of the proposed project. Responses to this letter may raise other questions that will need to be addressed before a water quality certification determination can be made.

1. Title 30, Texas Administrative Code (TAC), Chapter 279.11(c)(1), states that "No discharge shall be certified if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, ..." As noted in the Draft Feasibility Report, the primary environmental concern is increased saltwater intrusion and further degradation of marshes and cypress marshes as a result of the CIP. In addition, the Draft Environmental Impact Statement (DEIS) acknowledges in Section 3.5.3 the accelerated marsh deterioration and increased saltwater intrusion in the Calcasieu/Sabine River Basin. The DEIS identifies approximately 174 structures water control structures that had been constructed as of 1990 to address marsh deterioration, saltwater intrusion, and erosion within the project study area. Please provide a clear demonstration that no practical alternatives exist for the proposed project. Please complete the enclosed 401 Certification Questionnaire and Alternatives Analysis Checklist.

2. Section 3 (Affected Environment) of the DEIS states that there are 19 classified stream segments in Texas within the study area. However, only nine classified segments and their respective water quality standards are listed in Table 3.2-1. It should be noted that Sabine Pass (Segment No. 2411) and Sabine Lake (Segment No. 2412) are also located within the CIP study area and their designated uses are contact recreation, oyster waters, and exceptional and high aquatic life use, respectively. Please provide a complete list of the classified water segments and their appropriate designated uses and water quality criteria for the CIP study area.

3. Section 3.3.1 of the DEIS states that "based on available data, there is no indication of current water or elutriate contaminant problems along the SNWW." However, numerous classified segments (e.g. Segments No. 0501, 0508, 0511, 0701, and 0704) are currently listed as non-supporting on the Clean Water Act Section 303(d) list for impaired waters. Constituents of concern include low dissolved oxygen levels, bacteria, chlorophyll-*a*, ammonia, and nutrients. In addition, Segment 0702 (Intracoastal Waterway Tidal) is listed on the draft 2010 Texas 303(d) list as non-supporting for dioxin in edible tissue and PCBs in edible tissue. Please provide a complete list of the waterbodies (classified and unclassified) in the study are that have been identified as non-supporting or with concerns for non-attainment or screening levels with regard to applicable water quality standards.

4. Section 3.10.2.1 of the DEIS provides a list of the dominant nekton species inhabiting the Sabine Lake estuary. The species list includes white shrimp (*Litopenaeus setiferus*) and the discussion of the nekton assemblage concludes that all the listed species "are ubiquitous along the Texas and Louisiana coast and are unaffected by changes in salinity." However, subsequent paragraphs in this section note the significant decline in the white shrimp fishery and attribute the decline to "changes in freshwater inflow and concurrent isolation of wetlands from Sabine Lake." A current update of the status of this commercially important species and the species' response to salinity variations should be included in both the DEIS and Draft Feasibility Report.

5. Section 4.16 (Cumulative Effects) of the DEIS concludes that "past, existing, and reasonably foreseeable future projects, along with the Preferred Alternative, are not expected to have significant adverse effects within the study area." Quantifiable impacts are summarized in Table 4.16-1 and numerous categories and potential benefits or impacts in the table are noted with an * or ** symbol. The meaning or significance of these symbols is unclear with respect to categories (e.g., Past and Present Actions*) and individual assessments (e.g., NI*, Minimal*, 79 ac**, etc.). Please provide clarification and an explanation of the purpose intended.

6. Texas Commission on Environmental Quality (TCEQ) requires that total suspended solids (TSS) concentrations in effluent associated with dredging activities be controlled to a maximum of 300 milligrams per liter (mg/L). Please provide a list of best management practices (BMPs) and operational procedures that will be used to minimize TSS levels during dredging operations and the placement of dredged material.

7. As noted in the Draft Feasibility Report and DEIS, members of the Interagency Coordination Team (ICT) and the agencies and organizations represented on the ICT, have extended substantial time and resources during the DEIS development process. Please provide an overview and tentative schedule for the inclusion ICT members and organizations in the resolution of outstanding project issues and the development of the Final EIS for the proposed project.

The TCEQ looks forward to receiving and evaluating other agency or public comments. Please provide any agency comments, public comments, as well as the applicant's comments, to Mr. Robert Hansen of the Water Quality Division MC-150, P.O. Box 13087, Austin, Texas 78711-3087. Mr. Hansen may also be contacted by e-mail at *rhansen@tceq.state.tx.us*, or by telephone at (512) 239-4583.

Sincerely,

Charles W. Maguire, Director
Water Quality Division
Texas Commission on Environmental Quality

CWM/RSH/sp

Enclosure

cc: Mr. Ben Rhame, Secretary, Coastal Coordination Council, P.O. Box 12873, Austin, Texas 78711-2873

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

March 19, 2010

Environmental Section

Mr. Charles W. Maguire
Director
Water Quality Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Maguire:

Reference is made to your letter dated March 9, 2010 regarding the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) Draft Feasibility Study and Draft Environmental Impact Statement (DEIS), issued for public and agency review on December 24, 2009. In response to several requests, Galveston District (District) extended the public comment period to March 12, 2010. An Interagency Coordination Team (ICT) comprised of Federal and State resource agency representatives from Texas and Louisiana has assisted Galveston District in modeling and analyzing environmental impacts, and selecting beneficial use (BU) and mitigation measures for the Tentatively Recommended Plan. The Texas Commission on Environmental Quality (TCEQ) has had a representative on the ICT since its inception in 2000 through the last ICT meeting on August 27, 2009. Although TCEQ has been unable to send a representative to most of these meetings, the District has kept your agency apprised of studies and models performed to evaluate potential environmental impacts of the SNWW CIP. We offer the following information to assist you in review of the proposed project.

1. You have requested that Galveston District complete a "401 Certification Questionnaire and Alternatives Analysis Checklist" and demonstrate that no practicable alternatives exist for the proposed project. We understand that TCEQ requires this form to facilitate Section 401 reviews of U.S. Army Corps of Engineers Section 404 permit applications. The Galveston District is not applying for a permit to construct this Federal project, and therefore completion of this form should not be required.

However, we understand that your agency requires information in order for you to complete Section 401 review. All of the questions posed by the certification questionnaire and alternatives analysis checklist are answered by information presented in the Draft Feasibility Report (DFR), the Draft Environmental Impact Statement (DEIS), and DEIS Appendix E (Section 404(b)(1) Evaluation). For example, questions concerning impacts to state surface waters (1.A of the Questionnaire) are answered by information provided by DEIS Appendix E, and the compensatory mitigation plan (Questionnaire 1.B) is described in DEIS Section 5.5. Information regarding the alternatives analysis is provided in DFR Chapter IV and DEIS Chapter 2.0. These

chapters provide a thorough description of the alternative evaluation process, the specific alternatives that were evaluated (including non-structural alternatives, project alternatives with smaller dimensions, and the no-action alternative), and the rationale for selecting the Tentatively Recommended Plan.

A thorough description of salinity control structures that were evaluated in the screening of mitigation alternatives is provided in DEIS Section 5.4. None of the salinity control structures were selected because the net effect of the structures was determined to be negative. Beneficial salinity effects were modest and could not overcome the adverse effects of restrictions to marine organism access. The alternatives analysis provided in the DFR/DEIS clearly demonstrates that there is no practicable alternative to the proposed discharges which would have less adverse impact to the aquatic ecosystem.

2. FEIS Section 3.3 and Table 3.2-1 will be revised to provide a complete list of the classified water segments, their designated uses and water quality criteria. The DEIS reference to 19 classified stream segments refers to the total number of assessment units (sub-segments of the primary stream segments) in the study area. The number is correct, but the text will be corrected to refer to assessment units instead of stream segments. This number already includes Segments 2411 (Sabine Pass) and 2412 (Sabine Lake). Table 3.2-1 currently identifies all of the primary stream segments in the study area, with the exception of Segments 2411 and 2412. Table 3.2-1 will be revised to include Segments 2411 and 2412, their designated uses and water quality criteria.

3. As noted in your comment, Section 3.3.1 of the DEIS states that "...based on available data, there is no indication of current water or elutriate contaminant problems along the SNWW." The SNWW refers to the Sabine-Neches Waterway navigation channel, not the entire study area. We believe that a complete listing of impaired waterbodies in the study area would not be relevant to the assessment of environmental impacts of the Tentatively Recommended Plan. However, we will add the following information to FEIS Section 3.3.1 as clarification. "Stream segments 601, 703, and 2411 comprise the SNWW and none of these segments are classified as non-supporting on the Clean Water Act Section 303(d) list of impaired waters. While several impaired stream segments (0501, 0508, 0511, 0701, 0704) are located within the study area boundaries, they would not be affected by the direct or indirect effects of channel deepening or construction of any project features and, therefore are not evaluated further."

4. The DEIS discusses the decline of the white shrimp fishery in the study area, attributing the decline to "changes in freshwater inflow and concurrent isolation of wetlands from Sabine Lake." The Tentatively Recommended Plan would not affect freshwater inflows or increase the isolation of wetlands from Sabine Lake. The proposed beneficial use feature that restores significant marsh acreage on the Neches River and the marsh restoration proposed as compensatory mitigation east of Sabine Lake would provide a net benefit to marine and estuarine fish and wildlife species. None of the other resource agencies with the expertise and responsibility for marine fisheries and essential fish habitat expressed a concern over the effects

of the projected small salinity increase on white shrimp, and therefore an analysis of this species' responses to salinity variations is not warranted.

5. The superscripts, footnotes and abbreviation of terms for Table 4.16-1 (Impact Summary for Past, Present, and Reasonably Foreseeable Project with Publicly Available Information" will be revised in the FEIS to make the table easier to use. To help you interpret the DEIS table, we offer the following:

> Single asterisks after the column headings "Past or Present Actions" and "Reasonably Foreseeable Actions." refer to the footnote included with the table. "*Although not included in the table, several other projects are included in Section 4.16 Cumulative Impacts." The reason a particular project is not included in the table is provided in the text description of each project.
>
> Single asterisks in table cells referred to a footnote that was inadvertently left out of the table: "*Offset by engineering design, mitigation, data recovery, adaptive management plans/activities based on monitoring, procedures, and project controls." Likewise, double asterisks referred to another absent footnote: **Includes acreages from permit amendment applications.
>
> Cell contents are further explained below:
> "Benefit" or Net Benefit refers to results which have an overall positive effect when compared to the FWOP (baseline, existing) condition of the resource. "Benefit" infers direct benefit and "Net Benefit" infers a culmination of resource-related effects which are advantageous to the resource category as a whole.
> NI = No long-term impacts; NA = Not Applicable; UN = Unavailable; I = Impact

6. The TCEQ requirement that total suspended solid (TSS) concentrations in effluent associated with dredging activities be controlled to a maximum of 300 milligrams per liter could only be met for confined placement areas where outlet structures control the ponding of water and the settling of TSS before release. The management of TSS during the proposed unconfined discharge of dredged material for the Neches River and Gulf Shore BU features cannot meet this standard, but Best Management Practices (BMPs) would be utilized to minimize TSS to the maximum extent practicable. DEIS Appendix E, Part I.f (page E-13) states that BMPs, such as silt curtains, may be implemented where appropriate to control and reduce turbidity during dredging and placement. Part II.c.(4) on page E-19 states that BMPs, such as temporary containment levees/spill boxes or silt curtains could be utilized to minimize impacts during discharged to construct BU marsh restoration features. Galveston District coordination with the ICT (of which TCEQ is a member) of the proposed SNWW CIP would continue after project approval to obtain resource agency input into the identification of BMPs and the development of plans and specifications for BU features and compensatory mitigation measures.

7. All ICT member agencies were provided the opportunity to comment on the Preliminary DEIS (September 29, 2009) and the publically released DEIS (December 24, 2009) to ensure that

resource issues were adequately and appropriately addressed. ICT involvement prior to completion of the Final EIS for the SNWW CIP will be limited to consistency review by representatives from the following Coastal Coordination Council member agencies: Texas General Land Office, Texas Parks and Wildlife Department, Texas Water Development Board, Texas Commission on Environmental Quality and the Texas Department of Transportation. This review will be conducted pursuant to the Coastal Coordination Act's Implementation Rules 31 TAC §506.28 "Guidance for Conducting Consistency Reviews in Coordination with an Interagency Coordination Team," issued on December 11, 2003. Galveston District has requested concurrence that the Tentatively Recommended Plan for the SNWW CIP is consistent, to the maximum extent practicable, with the Texas Coastal Management Program goals and policies. The ICT would remain active through the preconstruction, engineering and design (PED) and project construction phases to provide input during the development of plans and specifications for BU features and mitigation measures, and on BMPs as described in response 6 above. The ICT would continue into the operations phase to ensure that the BU and mitigation measures have been constructed as specified in the DEIS and that the goals of the compensatory mitigation plan have been fully achieved.

In conclusion, we hope this additional information will be helpful in your review. We trust that we have provided sufficient information for you to provide §401 State Water Quality certification. However, we would be happy to meet with you to provide further information if needed. All public and agency comments on the DEIS and our responses will be available for your review when they are presented in the FEIS. Please do not hesitate to contact Ms. Janelle Stokes at 409/766-3039 should you need further assistance.

Sincerely,

for Carolyn Murphy
Chief, Environmental Branch

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

March 9, 2010

Dolan Dunn
Chief, Planning, Environmental & Regulator Division
Dept. of the Army
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, TX 77563-1229

RE: **C20090667,** Coastal Zone Consistency
U. S. Army Corps of Engineers, Galveston District
Direct Federal Action
Draft EIS for the Sabine-Neches Waterway Improvements Project, Southeast Texas and Southwest, **Louisiana**

Dear Mr. Dunn:

This office has received the above referenced federal application for consistency review with the approved Louisiana Coastal Resources Program in accordance with Section 307(c) of the Federal Coastal Zone Management Act of 1972, as amended. NOAA Regulations on Federal Consistency, at 15 CFR '930.41(a), allow 60 days for the review of Direct Federal Activities, and at '930.41(c)(b) allow additional review time upon mutual agreement between the Federal agency and the State Coastal Zone Program. Please be advised that, by this letter, Interagency Affairs/Field Services Division and the Galveston Corps District have mutually agreed to extend the State review time to March 26, 2010. 1

A final determination will be made within the authorized time period, ending March 26, 2010. If you have any questions please call Brian Marcks of the Consistency Section at (225) 342-7591.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm
cc: Janelle Stokes, Galveston COE

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Mr. Gregory J. DuCote
Administrator, Interagency Affairs/Field Services Division
State of Louisiana
Department of Natural Resources
Office of Coastal Management
617 North Third Street, 10th Floor, Suite 1078
Baton Rouge, LA 70804-4487

RESPONSE TO COMMENTS

Comment No.	Response
1	The LDNR-OCM review period for the Federal application for consistency review was extended to March 12, 2010.

TEXAS PARKS & WILDLIFE

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Commissioners

Peter M. Holt
Chairman
San Antonio

T. Dan Friedkin
Vice-Chairman
Houston

Mark E. Bivins
Amarillo

Ralph H. Duggins
Fort Worth

Antonio Falcon, M.D.
Rio Grande City

Karen J. Hixon
San Antonio

Dan Allen Hughes, Jr.
Beeville

Margaret Martin
Boerne

S. Reed Morian
Houston

Lee M. Bass
Chairman-Emeritus
Fort Worth

Carter P. Smith
Executive Director

March 11, 2010

Ms. Janelle Stokes
Environmental Section
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Re: Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Site Designation

Dear Ms. Stokes:

Texas Parks and Wildlife Department (TPWD) staff has reviewed the above referenced documents provided to our agency on December 18, 2009. TPWD staff has also participated in the Interagency Coordination Team (ICT) for this project. Through the ICT process TPWD was able to provide our input into the project design, beneficial use components and mitigation options. As a result of this process, our agency comments have been incorporated into the Draft Environmental Impact Statement and we have no outstanding issues with the project.

Without proper execution of the mitigation plan and beneficial use features, this project would have deleterious impacts on an already significantly altered and fragile Sabine Lake coastal ecosystem. Therefore, we cannot stress enough the importance of continued coordination with our agency through the planning, engineering and design phase, the construction phase, and the maintenance phase of this project. We strongly recommend that the U.S. Army Corps of Engineers and the Sabine Neches Navigation District adopt the Beneficial Use Group model developed for the Houston Ship Channel project to facilitate this coordination. 1

We appreciate the opportunity to participate in the ICT process for this project and fully endorse use of the ICT process to facilitate federal projects that avoid and minimize impacts on the natural resources of Texas.

Questions can be directed to Mr. Jamie Schubert, Upper Coast Ecosystem Assessment Team Leader at (281) 534-0135.

Sincerely,

Ross Melinchuk
Deputy Executive Director, Natural Resources

RM:RR:dh

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

Mr. Ross Melinchuk
Deputy Executive Director, Natural Resources
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744-3291

RESPONSE TO COMMENTS

Comment No.	Response
1	The SNWW ICT will continue into the engineering, design, construction and monitoring phases of the SNWW CIP. Specific ICT involvement relative to the BU features and mitigation measures are described in the SNWW CIP Mitigation and Beneficial Use Monitoring Plan (FEIS Appendix J).

BOBBY JINDAL
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY

JIMMY L. ANTHONY
ASSISTANT SECRETARY

March 11, 2010

Ms. Janelle Stokes
Regional Environmental Specialist
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

RE: Sabine-Neches Waterway Channel Improvement Project – DEIS

Dear Ms. Stokes:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the Sabine-Neches Waterway Channel Improvement Project Draft Environmental Impact Statement (EIS). As a Cooperating Agency and a member of the Interagency Coordination Team, LDWF submits the following recommendations. These recommendations shall be given thorough consideration and be individually and adequately addressed in the Final EIS.

Compensatory Mitigation

The U.S. Army Corps of Engineers (USACE) intends to restore more marsh in Louisiana than the project is predicted to destroy over the initial 50-year project life. Despite this, there remains a 318 AAHU deficiency in Louisiana. **The 318 AAHU deficiency indicates that project construction, including beneficial use and mitigation measures, is expected to result in an overall loss of fish and wildlife habitat quality in Louisiana.**

USACE proposes to use excess Texas BU benefits to offset this deficiency of compensatory mitigation in Louisiana. **LDWF will not concur in plans to mitigate in Texas for wetland impacts occurring in Louisiana.**

Therefore, LDWF recommends that additional mitigation measures be implemented in Louisiana to offset the current 318 AAHU deficiency. 1

Beneficial Use

LDWF recommends that new work material from the Sabine Pass Channel and Sabine Pass Jetty Channel be used beneficially to create, restore, or nourish emergent marsh in the vicinity of the project. Instead of using only maintenance material composed of fine-grained sediment, the new work material, composed predominantly of clay, should be placed along the shoreline at Louisiana Point. New work material would have a greater likelihood of remaining in the existing marsh and on the shallow nearshore slope in front of the shoreline than maintenance material. 2

LDWF License to Dredge; Royalties

LDWF's legal staff is investigating USACE's claim that the Supremacy Clause of the U.S. Constitution allows USACE to avoid acquiring a license from, and pay royalties to, LDWF for dredging state owned water bottoms. 3

Public Oyster Areas

Sabine Lake in Louisiana is a public oyster area and LDWF is mandated to diligently protect and conserve such areas. It has been a long-standing practice that water bottoms associated with a proposed project within a public oyster area must be assessed prior to project implementation, and that compensation is required for impacts to those water bottoms. Adverse impacts to the public oyster area from the mitigation dredging areas, including any access channels, must be assessed. The applicant shall contact LDWF's Heather Finley at 225-765-2956 or hfinley@wlf.la.gov for further information. 4

LDWF has consistently asserted that these recommendations must be satisfactorily addressed by USACE. Unfortunately, the DEIS failed to do so. LDWF will continue to urge USACE to correct the inequitable wetland mitigation plan and to adequately address all other outstanding LDWF concerns. Please do not hesitate to contact LDWF's Kyle Balkum at 225-765-2819 should you need further assistance.

Sincerely,

Robert J. Barham
Secretary

kb

c: Heather Finley, LDWF
Mike Windham, LDWF
Gregory DuCote, LDNR
David Fruge, OCPR
Jeff Harris, LDNR
Richard Hartman, NMFS
Ismail Merhi, OCPR
Darryl Clark, USFWS

Mr. Robert J. Barham
Secretary
Louisiana Department of Wildlife and Fisheries
Office of Wildlife
P.O. Box 98000
Baton Rouge, LA 70898-9000

RESPONSE TO COMMENTS

Comment No.	Response
1	Please see USACE response in letter dated March 4, 2010. USACE maintains that all impacts have been fully compensated. Therefore, this will be reported as an unresolved issue in the FEIS.
2	Please see USACE response in letter dated March 4, 2010. USACE has explained that the beneficial use of new work material was thoroughly explored by the FEIS, and that dredged material would used to the maximum extent practicable in the proposed SNWW CIP. Therefore, this will be reported as an unresolved issue in the FEIS.
3	Please see USACE response in letter dated March 4, 2010. USACE understands that this issue is still under review by Louisiana Department of Wildlife and Fisheries (LDWF). If it is not resolved prior to publication, it will be reported as an unresolved issue in the FEIS.
4	Please see USACE response in letter dated March 4, 2010. USACE has proposed that a water bottom survey of the borrow area and access channels be conducted after project approval. In the event that oyster reef is encountered, plans would be revised to avoid impacts. Therefore, this will be reported as an unresolved issue in the FEIS.

BOBBY JINDAL
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY

JIMMY L. ANTHONY
ASSISTANT SECRETARY

October 23, 2009

Ms. Janelle Stokes
Regional Environmental Specialist
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

RE: Sabine-Neches Waterway Feasibility Study DEIS

Dear Ms. Stokes:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the preliminary Sabine-Neches Waterway Feasibility Study Draft Environmental Impact Statement (DEIS). Based upon this review, LDWF staff submits the following comments below. These comments, shall require thorough consideration and be individually and adequately addressed in the DEIS.

Compensatory Mitigation
Excess Texas BU Benefits are being used to offset a deficiency of compensatory mitigation in Louisiana. **LDWF will not concur in plans to mitigate in Texas for wetland impacts occurring in Louisiana.** LDWF recommends that additional Louisiana mitigation measures be implemented to offset the current 318 AAHU deficiency.

Beneficial Use
The tentatively Recommended Plan would result in an estimated 98,000,000 cubic yards of new work material (i.e., material dredged during initial channel deepening and widening). With the exception of a portion of the material dredged from the Neches River Channel in Texas, all new work material would be pumped to upland placement areas and ocean dredged material disposal sites, not used beneficially.

Of particular concern to LDWF is the Sabine Pass Channel segment which begins just north of the jetties and extends 5.6 miles upstream to Mesquite Point, Texas and the Sabine Pass Jetty Channel which begins at the jetties and extends 4.1 miles downstream. All 9,701,000 cubic yards of new work material from these segments (6,723,000 cubic yards from Sabine Pass Channel and 2,978,000 cubic yards from Sabine Pass Jetty Channel) would be pumped to upland placement areas or ocean dredged material disposal sites. **LDWF recommends that new work material from the Sabine Pass Channel and Sabine Pass Jetty Channel be used beneficially to create, restore, or nourish emergent marsh in the vicinity of the project.**

LDWF License to Dredge; Royalties
Sabine Lake and Sabine Pass in Louisiana are state owned water bottoms. No fill material shall be dredged from state owned water bottoms without a license issued by LDWF. A royalty payment, based on cubic yards, shall also be made to LDWF. The applicant shall contact LDWF's Mike Windham at 504-284-5268 or cwindham@wlf.la.gov for further information.

Public Oyster Areas
Sabine Lake in Louisiana is a public oyster area and LDWF is mandated to diligently protect and conserve such areas. It has been a long-standing practice that water bottoms associated with a proposed project within a public oyster area must be assessed prior to project implementation, and that compensation is required for impacts to those water bottoms. Adverse impacts to the public oyster area from the mitigation dredging areas, including any access channels, must be assessed. The applicant shall contact LDWF's Heather Finley at 225-765-2956 or hfinley@wlf.la.gov for further information.

LA2-ADD B/LA2-18B
LDWF needs more information about the access channel and borrow trench for LA2-ADD B/LA2-18B. For instance, why was the proposed route chosen? Why not a more direct route? What is the depth of the channel? What is the depth and length of the borrow trench? What is the distance from shore of the borrow trench? All of these questions are a concern due to the potential to create hypoxic conditions in dredged water bottoms and increase shoreline erosion rates through increased wave energy or sinking of the shoreline to fill the excavated trench.

WVA Modeling – Submerged Aquatic Vegetation (SAV)
The WVA model predicts no change in the percentage of SAV cover for either Future Without Project (FWOP) or Future With Project (FWP) condition despite increases in salinity. However, the FWP results in adverse impacts to native SAV in two hydrologic units (i.e., TX 3 and LA 1). Furthermore, the salinity ranges appear high for some of the species and, according to discussions at the August 27, 2009 ICT meeting, some native SAV species were not included in the analysis. More work is necessary to justify the "no change" determination for FWP or else adverse impacts need to be accounted for in the WVA model and adequate and appropriate mitigation provided.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact LDWF's Kyle Balkum at 225-765-2819 should you need further assistance.

Sincerely,

Robert J. Barham
Secretary

kb/hf

c: Heather Finley, LDWF
Mike Windham, LDWF
Gregory DuCote, LDNR
Karl Morgan, LDNR
Ismail Merhi, OCPR
Darryl Clark, USFWS

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

REPLY TO
ATTENTION OF

March 4, 2010

Environmental Section

Mr. Robert J. Barham
Secretary
Louisiana Department of Wildlife and Fisheries
Office of Wildlife
P.O. Box 98000
Baton Rouge, Louisiana 70898-9000

Dear Mr. Barham:

Reference is made to the letter dated October 23, 2009 from your agency regarding the preliminary Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) Feasibility Study and Draft Environmental Impact Statement (DEIS). The DEIS, issued for public and agency review on December 24, 2009, included your comments and identified them as unresolved issues in the DEIS Executive Summary (Section ES.5, page ES-10). An Interagency Coordination Team (ICT) comprised of Federal and State resource agency representatives from Texas and Louisiana has assisted Galveston District in modeling and analyzing environmental impacts, and selecting beneficial use (BU) and mitigation measures for the Tentatively Recommended Plan. The Louisiana Department of Wildlife and Fisheries (LDWF) has had a representative on the ICT since its inception in 2000. For your convenience, we are providing responses to each of your comments with this correspondence.

Compensatory Mitigation

The proposed mitigation plan would more than compensate for all impacts of the proposed SNWW CIP. Benefits of the BU measures are being used to offset impacts in both Texas and Louisiana. DEIS Table 5.1-2 provides a summary accounting of BU benefits and compensatory mitigation for the proposed project. In Louisiana, the benefits of BU measures offset the loss of 210 average annual habitat units (AAHUs) to private lands along the coast at Louisiana Point, and the loss of 340 AAHUs to Federal land in the Sabine National Wildlife Refuge. Although the net impact of the project as a whole after application of all BU benefits (including significant other BU benefits in Texas) is the loss of 843 AAHUs, the proposed mitigation plan would provide 1,181 AAHUs in order to fully compensate for the loss of 1,499 AAHUs to non-Federal lands in Louisiana. The marsh mitigation measures would compensate for the predicted loss of 691acres in Louisiana over 50 years by the restoration of 2,783 acres of emergent marsh, the improvement of 957 acres of shallow water habitat and the nourishment of 4,355 acres of existing marsh. Since the marsh restoration is several times greater than the predicted marsh loss, there would be no net less of wetlands.

Beneficial Use

The ICT participated in an exhaustive search for least-cost beneficial use opportunities throughout the project area. The screening of potential BU measures is described in the DEIS

Section 2.5.3. Given the large amount of dredged material that would be generated from the proposed SNWW CIP, considerable effort was expended to identify areas in both Texas and Louisiana that could benefit from its beneficial use. All degraded marsh areas near the SNWW navigation channels, including the marshes inland from Louisiana Point, were investigated. The ICT identified no interior marsh areas in need of nourishment or restoration adjacent to Sabine Pass in Louisiana. Areas in Louisiana that could benefit from BU measures are all located in marshes east of Sabine Lake. However, these were found to be too distant from the navigation channel to permit cost effective use of dredged material from the SNWW navigation channels.

The tentatively-recommended BU plan includes the only measure in Louisiana that was identified as a least costly method of disposal. The Gulf Shore Nourishment Feature would use material from regular maintenance dredging of the eastern section of the Sabine Pass Channel to nourish eroding marsh along shorelines at Louisiana Point and Texas Point. Maintenance material would be hydraulically-pumped along a 3-mile reach of shoreline (from 0.5 to 3.5 miles from each jetty) during each 3-year dredging cycle. The unconfined placement would alternate between Texas and Louisiana, so that dredged material would be placed on each state's shoreline every 6 years, for a total of 16 placement events over 50 years. Dredging and pumping costs for new work material are higher, and therefore shoreline nourishment during construction in the Sabine Pass Channel would be more expensive than placement in the existing Placement Area (PA) 5. The Sabine Pass Jetty Channel would be dredged by hopper dredge; beneficial use of this material would require double handling and would cost more than placement in the existing Ocean Dredged Material Disposal Site (ODMDS) A. Current Corps of Engineers guidance requires that a cost share sponsor be identified for any environmentally beneficial use of dredged material that is not the least costly method of disposal. No potential non-federal sponsors have been identified for BU measures that are not the least costly method of disposal. The proposed BU plan uses dredged material to the maximum extent practicable to protect and nourish the Gulf shoreline, and existing upland PA5 and ODMDS A would be utilized rather than creating new placement areas.

LDWF License to Dredge; Royalties

Galveston District maintains that the United States is not bound by Louisiana statute (R.S. 56:2011) pursuant to the Supremacy Clause of the United States Constitution, Article VI, paragraph 2, and that Louisiana is not entitled to compensation under the Fifth Amendment, pursuant to the doctrine of Navigation Servitude. This servitude gives the Federal Government the right to use the "Navigable Waters" of the United States without compensation for navigation projects. The connection between the navigation project and the proposed removal of fill from Sabine Lake is simple. The removal of fill material for the Willow Bayou marsh mitigation areas would not be necessary but for construction of the proposed project.

Public Oyster Area
Galveston District understands that the area proposed for the one-time borrow area and access channel are located within the Sabine Lake Public Oyster Area. While the area is designated as a public oyster area, several recent bay bottom assessments conducted in the vicinity by Department of Army permit applicants have identified no live oyster reefs in the area. Nevertheless, as stated in DEIS Section ES.5 and Section 5.5.1, we propose that a water bottom survey of the borrow and access channel areas be conducted after approval of the Chief of Engineer's report, during the preconstruction engineering and design (PED) phase of the project. In the unlikely event that oyster reef is encountered, plans will be revised to avoid impacts.

LA2-ADD B/LA2-18B
DEIS Section 5.5.1 answers many of the questions posed by your letter. "The dedicated dredging would take approximately 3.1 million cubic yards of material from a 1.8-mile-long borrow trench in Sabine Lake. The borrow trench would be located at least 1,000 feet from the Sabine National Wildlife shore and would average 1,030 feet wide by 7.5 feet deep. The borrow trench would be continuous and parallel to the current shoreline, in line with the common long shore circulation pattern in Sabine Lake. The circulation is expected to prevent the development of hypoxic conditions that would be detrimental to aquatic organisms, and would eventually fill the trench with Sabine River sediments. An access channel, approximately 8 miles long, from the GIWW near the mouth of the Sabine River would be needed for the dredge to reach the proposed borrow area. The exact locations of the borrow trench and access channel would be determined in consultation with the ICT after PED bottom surveys of potential locations." The proposed route of the access channel was chosen to keep dredging impacts to a minimum; it takes advantage of deeper water in the center of the lake, thereby minimizing dredging and bottom impacts. The depth of the access channel would be dependent upon water depth and the draft of the dredge. ICT coordination during the PED phase would ensure that LDWF concerns with these features are adequately addressed.

WVA Modeling – Submerged Aquatic Vegetation (SAV)
DEIS Appendix C, Section 4.2 describes the WVA modeling of the variable "Percent Submerged Aquatic Vegetation." The WVA model documentation described in DEIS Appendix C, Section 2.6.1.2, defines SAV as any of the diverse array of floating-leaved and submerged aquatic plants that are typically found in a study area. SAV coverage is included as an important model variable because SAV provides important food and cover to a wide variety of fish and wildlife. The model evaluates the percentage of open water that is dominated by aquatic vegetation, without consideration as to whether it is native or invasive. The WVA modeling utilized an inventory of SAV species in the study area that was prepared using recent monitoring reports and other available literature. Potential project impacts would be related to the increase in salinity that would occur with deepening of the SNWW navigation channel. As described in DEIS

Section 4.2.1, one native and one invasive SAV species out of 10 species present in LA 1 would be affected by the predicted salinity change. It is expected that any SAV cover lost due to the gradual salinity change would be replaced by salinity tolerant SAV species continuing to grow within their tolerance ranges. As a result, no actual impact to percent SAV cover would be expected. The best available scientific information was used to establish salinity ranges for the evaluation; differences in scientific opinion regarding these ranges are readily apparent in the literature. No new information has yet been provided by LDWF or any other resource agency and, therefore, we see no reason to revise the WVA modeling at this time.

We hope this additional information will be helpful to your agency in evaluating the SNWW CIP Draft EIS. The issues and area of concern raised by your letter have been individually and adequately addressed in the DEIS. Please do not hesitate to contact Ms. Janelle Stokes at 409/766-3039 should you need further assistance.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

CF:
Kyle Balkum, LDWF
Heather Finley, LDWF
Gregory DuCote, LDNR
Jeff Harris, LDNR
Ismail Merhi, OCPR
Darryl Clark, USFWS

Stokes, Janelle S SWG

From: Tammy Brooks [Tammy.Brooks@GLO.STATE.TX.US]
Sent: Friday, March 12, 2010 11:11 AM
To: rcantu@dot.state.tx.us; Robert Hansen; william.schubert@tpwd.state.tx.us; guthrie.karla@twdb.state.tx.us; Stokes, Janelle S SWG
Subject: Re: SNWW -CIP Consistency

Jan,

I request a two-week extension of time (3/26/10) to review the information. 1

Sincerely,
Tammy

Tammy S. Brooks
Coastal Coordination Council Secretary
Consistency Review Coordinator
Coastal Resources
Texas General Land Office
P. O. Box 12873
Austin, TX 78711-2873
(512) 463-9212
(512) 475-0680 fax
tammy.brooks@glo.state.tx.us

>>> "Stokes, Janelle S SWG" <janelle.s.stokes@usace.army.mil> 3/12/2010 10:12 AM >>>
Good morning,

A couple of you requested additional information on the ICT process for consistency concurrence. I'm attaching the 2003 CCC Guidance for ICT Consistency Review. It describes the approved process that we would like to follow for the SNWW CIP. If you have further questions about this, I believe Ms. Tammy Brooks, GLO Coastal Management Program, (512) 463-9212 may be able to provide additional information.

And please don't hesitate to call me if you have any other questions or concerns. <<CCC_Guidance_ICT_Consistency_Review_2003.pdf>>

Janelle Stokes
Regional Environmental Specialist
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553
409/766-3039
janelle.s.stokes@usace.army.mil

Ms. Tammy Brooks
Coastal Coordination Council Secretary
Consistency Review Coordinator
Coastal Resources
Texas General Land Office
P.O. Box 12873
Austin, TX 78711-2873

RESPONSE TO COMMENTS

Comment No.	Response
1	The Texas Coastal Coordination Council (TX CCC) review period for the Federal application for consistency review was extended to March 26, 2010.

A GOVERNMENT AGENCY
OF THE
State of Texas

(409) 746-2192
FAX (409) 746-3780

SABINE RIVER AUTHORITY
of Texas

P.O. BOX 579
ORANGE, TEXAS
77631

March 12, 2010

Ms. Janelle Stokes, Regional Environmental Specialist
U.S. Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553-1229

Re: Comments on December 2009 Draft Documents for Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

The Sabine River Authority of Texas (SRA-TX) appreciates this opportunity to provide its comments on the December 2009 draft documents for the Sabine-Neches Waterway Channel Improvement Project. The SRA-TX has been an active participant in the USACE Interagency Coordination Team and is familiar with the proposed project.

The SRA-TX was created by the Legislature in 1949 as an official agency of the State of Texas. SRA-TX was created as conservation and reclamation district with responsibilities to control, store, preserve and distribute the waters of the Sabine River and its tributary streams in Texas for useful purposes. The Texas portion of the Sabine River Basin originates in Texas with headwaters east of Dallas and flows southeast to the Stateline near Logansport, Louisiana where waters are divided equally between the two States. The total drainage area of the Basin is 9,756 square miles which includes all or part of twenty-one counties in Texas (ahout 76 percent of the basin) and seven parishes in Louisiana (about 24 percent of the basin). The downstream reach ends at the confluence of the Sabine River with Sabine Lake. The STA-TX, the Sabine River Authority, State of Louisiana (SRA-LA) and the Sabine River Compact Administration all have responsibilities relating to the waters of the Sabine Basin.

The SRA-TX has taken an active role in water supply and water quality protection activities for many years, including work with regional state water planning groups, drought planning, and water conservation. As a partner in the Texas Clean Rivers Program since the program's inception, SRA-TX collects water quality data throughout the Sabine River Basin under a state-approved quality assurance project plan and the data is accepted by the state for standards compliance assessment. SRA-TX monitors water quantity and quality for SRA-TX and SRA-LA in Toledo Bend Reservoir and the Lower Sabine River Basin. SRA-TX has actively participated in review of state water quality standards, nutrient standards development, waste load evaluations, and industrial and municipal permit compliance monitoring. SRA-TX is

currently gathering available data and conducting studies on the Lower Sabine River relevant to the renewal of its Federal Energy Regulatory Commission (FERC) license for the Toledo Bend Hydropower facility. Other recent environmental flows work includes several years of work with Senate Bill 2, Texas Instream Flow Program and Senate Bill 3, Sabine and Neches Rivers and Sabine Lake Bay Basin and Bay Area Stakeholder Committee and Expert Science Team. As a part of these environmental flows activities, the SRA-TX has maintained that solutions for preservation and protection of the ecology of Sabine Lake and the surrounding wetlands should be based on retarding saltwater intrusion into the wetlands which has resulted from numerous secondary channels in Texas and Louisiana.

Over the past 130 years, secondary channels emanating from the open waters of Sabine Lake, the tidal waters of the lower Sabine and Neches Rivers as well as the Gulf Intracoastal Waterway have exposed the adjacent wetlands (bottomland hardwoods, cypress-tupelo swamps and open marshes) to increased tidal exchange of higher salinity water from the Gulf of Mexico via the Sabine-Neches Waterway to areas such as Bessie Heights, Keith Lake and the Sabine National Wildlife Refuge. SRA-TX agrees that wetlands mitigation/habitat restoration efforts outlined in the report will need the beneficial use of dredged material to re-establish marsh elevations along with revegetation in order to rebuild these areas. However, SRA-TX believes saltwater intrusion into these areas will require more control structures to retard saltwater intrusion and slow freshwater drainage from wetland areas back into Sabine Lake and the lower Sabine and Neches Rivers. In this regard, SRA-TX requests additional consideration be given to such control structures to mitigate wetland loss resulting from secondary channels. 1

Thank you again for this opportunity to submit our comments. We have also attached specific comments for your consideration. Please contact our office if further details or clarification is needed.

Sincerely,

Jack W. Tatum
Water Resources Manager
Sabine River Authority of Texas

Attachment

SRA-TX Comments

Volume I, Draft Feasibility Report for Sabine-Neches Waterway Channel Improvement Project

p. I-11

2

During periods of normal rainfall, high salinity water transported by the SNWW is buffered by ~~discharges~~ inflows from ~~upstream reservoirs~~the Sabine and Neches Rivers, direct rainfall, and coastal watershed inflows that have little effect on the salinity levels of Sabine Lake and the surrounding marshes.

Comment [JDP1]: It's inaccurate to describe inflows from the Sabine and Neches Rivers in terms of the reservoirs. 56% of fresh water entering Sabine Lake originated from watersheds and direct precipitation other than flows passing through Sam Rayburn and Toledo Bend dams 147 miles upstream of Sabine Lake.

p. I-14

Table I-2

Totals in bottom right column don't agree with other data in the table.

3

Summary of Habitat Acreages by State, 2004

	Fresh	Inter-mediate	Brackish	Saline	Total Marsh	Bottomland Hardwood	Swamp	Total Wetlands
Texas								
Acreage	13,580	30,336	24,047	4,898	72,861	5,458	10,157	88,476
Water	2,117	9,240	8,254	810	20,421	0	0	20,421
Totals	15,697	39,576	32,301	5,708	93,282	5,458	10,157	108,897
Louisiana								
Acreage	20,336	101,405	23,112	3,551	148,404	3,206	6,641	158,251
Water	4,772	31,872	2,049	586	39,279	0	0	39,279
Totals	25,108	133,277	25,161	4,137	187,683	3,206	6,641	197,530
Total								
Acreage	33,916	131,741	47,159	8,449	221,265	8,664	16,798	451,386
Water	6,889	41,112	10,303	1,396	59,700	0	0	119,476
Totals	40,805	172,853	57,462	9,845	280,965	8,664	16,798	570,872

Volume II, Draft Environmental Impact Statement for Sabine-Neches Waterway Channel Improvement Project

p.3-28

3.5.3.1 Flow Diversions

The area within Calcasieu/Sabine River Basin has experienced accelerated marsh deterioration and conversion to shallow open water as a result of the construction of Calcasieu Ship Channel, the SNWW, ~~and~~ the GIWW, land subsidence from mineral extraction, and relative sea level rise. Efforts to combat the increased flow of saltwater into the area include both structural and vegetative methods. A 1990 inventory of water control structures along the perimeter and interior of the Calcasieu/Sabine River Basin located 174 structures.

4

SRA Comment: The Recommended Plan includes beneficial use of dredge material but doesn't include water control structures such as those listed in section 3.5.3.1 to restrict the flow of saltwater into the marshes. The SRA-TX understands the need for beneficial use of dredge material and recognizes cost/benefits analyses have been done to select mitigation options that are most cost-effective, however these beneficial use areas aren't expected to prevent saltwater from entering the marshes. Marsh perimeter control structures reduce tidal hydraulics and erosion of surface sediments, restrict inflows from Sabine Lake, and retain fresh water from rainfall and local watersheds. 5

p. 4-112

4.16.4.6 Toledo Bend Reservoir Relicensing

Toledo Bend Reservoir is located on the Sabine River in Texas and Louisiana and forms a portion of the boundary between the two states. The reservoir is approximately 65 miles long and inundates land in Newton, Sabine, Shelby, and Panola counties, Texas, and Sabine and DeSoto parishes, Louisiana. Toledo Bend Reservoir has 1,200 shoreline miles, normally covers an area of 185,000 acres, and has a controlled storage capacity of 4,477,000 acre-feet. The reservoir was constructed by Sabine River Authority of Texas and Sabine River Authority, State of Louisiana (SRA-LA) for water ~~conservation~~supply, with secondary uses of 6
hydroelectric power generation, and recreation. On December 12, 2002, the SRA-TX approved an application to the TCEQ to amend Certificate of Adjudication No. 05-4658 to include the right to divert 293,300 acre-feet per year of the available unappropriated portion of the stored Texas water from Toledo Bend Reservoir for multiple
use (municipal, industrial, agricultural) (SRA-TX and LNVA, 2006). TCEQ is mandated to consider environmental flows (instream and freshwater needs) during permit evaluations for new reservoirs or amended water rights.

The SRA-TX and ~~Louisiana~~ SRA-LA (Authorities, hereafter) 7
~~propose to revise their FERC license to eliminate~~
~~peaking hydropower generation during the summer months at Toledo Bend Reservoir~~. With this proposed change, water would be used for public water supply.
~~The SRA-TX and LNVA commissioned Sabine~~
~~Lake: Ecological Condition of the Sabine-Neches Estuary report (SRA-TX and LNVA, 2006) to facilitate preparation of the FERC pre-application document for relicensing new operations (an EIS would be required to evaluate the impacts of such a change)~~. If the Toledo Bend Reservoir were to be operated solely as a public water supply, the hydropower operational increase in freshwater inflows to Sabine Lake during the summer months would not occur, resulting in a flow regime similar to pre-reservoir or naturalized conditions (SRA-TX and LNVA, 2006). The current FERC license expires October 14, 2013 (SRA-TX and LNVA, 2006).

Comment [JDP2]: The new license will not eliminate summertime hydropower peaking.

Comment [JDP3]: This document was an important reference in the FERC Pre-Application Document but wasn't commissioned for that purpose.

The SRA-TX and SRA-LA (Authorities, hereafter) have initiated the process to renew the FERC license which allows the generation of Hydro-electric generation. The current FERC license expires October 14, 2013. The intention of the Authorities is to continue current operations as a hydropower peaking unit during the summer months. However, as water supply sales increase, hydropower generation may be reduced resulting in a flow regime that is more similar to pre-reservoir or naturalized conditions.

Comment [JDP4]: [illegible]

The SRA-TX recommends long-term salinity monitoring as a part of the Monitoring Plan to evaluate accuracy of the prediction model, subsequent assumptions that were made on the basis of salinity modeling, and the ultimate success potential for adopted mitigation measures.

Mr. Jack Tatum
Water Resources Manager
Sabine River Authority of Texas
P.O. Box 579
Orange, TX 77631

RESPONSE TO COMMENTS

Comment No.	Response
1	Given the fact that impacts of the proposed SNWW CIP are related primarily to salinity intrusion, extensive efforts have been made to identify effective mitigation measures that could minimize or eliminate the projected increase in salinity and tidal amplitude. The results of this effort are presented in FEIS Section 5.4.1.1. None of the salinity control structures were selected because the net effect of the structures was determined to be negative. Beneficial salinity effects were modest and could not overcome the adverse effects of restrictions to marine organism access.
2	The FR was revised as suggested.
3	Totals in FR Table I-2 have been corrected.
4	The effect of relative sea level rise (which by definition includes subsidence from any cause) on existing interior marshes is discussed in FEIS Section 4.10.1.2.1. Existing coastal marshes appear to have adapted to gradual changes in sea level rise, and in recent years there has been a decrease in the loss rate in the Sabine-Calcasieu area. The text has not been revised.
5	See USACE response to Comment 1.
6	The FEIS was revised as suggested.
7	The FEIS has been revised.
8	Salinity monitoring is conducted by many state and Federal agencies throughout the SNWW study area. It is expected that this data will be available for use in assessing future conditions within the study area.

TEXAS WATER DEVELOPMENT BOARD

James E. Herring, *Chairman*
Lewis H. McMahan, *Member*
Edward G. Vaughan, *Member*

J. Kevin Ward
Executive Administrator

Jack Hunt, *Vice Chairman*
Thomas Weir Labatt III, *Member*
Joe M. Crutcher, *Member*

March 18, 2010

Janelle Stokes
Regional Environmental Specialist
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

Ms. Stokes,

The Texas Water Development Board (TWDB), as a member of the interagency coordination team for the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) and as a member of the Coastal Coordination Council (CCC), concurs that the tentatively recommended plan for the SNWW CIP is consistent with the Texas Coastal Management Program's goals and policies regarding *Dredging and Dredged Material Disposal and Placement* (TAC §501.25).

We have reviewed the analysis of compliance for the goals and policies related to TAC §501.25 *Dredging and Dredged Material Disposal and Placement* (Appendix I-1 of the Draft Environmental Impact Statement) and agree that the plans for beneficial use of dredged material meet the goals and policies of the Texas Coastal Management Plan. If you have further questions, please contact me at 512-936-0825 or at junji.matsumoto@twdb.state.tx.us. 1

Sincerely,

Junji Matsumoto

Junji Matsumoto, Ph.D., P.E.
Engineer, Bays & Estuaries Program

Our Mission
To provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.
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TNRIS

Mr. Junji Matsumoto, Ph.D., P.E.
Engineer, Bays & Estuaries Program
Texas Water Development Board
1700 N. Congress Avenue
Austin, TX 78711-3231

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for your comment.

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

March 25, 2010

Dolan Dunn
Chief, Planning, Environmental & Regulator Division
Dept. of the Army
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, TX 77563-1229

RE: **C20090667,** Coastal Zone Consistency
U. S. Army Corps of Engineers, Galveston District
Direct Federal Action
Draft EIS for the Sabine-Neches Waterway Improvements Project, Southeast Texas and Southwest, **Louisiana**

Dear Mr. Dunn:

This office has received the above referenced federal application for consistency review with the approved Louisiana Coastal Resources Program in accordance with Section 307(c) of the Federal Coastal Zone Management Act of 1972, as amended. NOAA Regulations on Federal Consistency, at 15 CFR '930.41(a), allow 60 days for the review of Direct Federal Activities, and at '930.41(c)(b) allow additional review time upon mutual agreement between the Federal agency and the State Coastal Zone Program. Please be advised that, by this letter, Interagency Affairs/Field Services Division and the Galveston Corps District have mutually agreed to extend the State review time to March 31, 2010. 1

A final determination will be made within the authorized time period, ending March 31, 2010. If you have any questions please call Brian Marcks of the Consistency Section at (225) 342-7591.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm
cc: Janelle Stokes, Galveston COE

Post Office Box 44487 • Baton Rouge, Louisiana 70804-4487
617 North Third Street • 10th Floor • Suite 1078 • Baton Rouge, Louisiana 70802
(225) 342-7591 • Fax (225) 342-9439 • http://www.dnr.louisiana.gov
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Mr. Gregory J. DuCote
Administrator, Interagency Affairs/Field Services Division
State of Louisiana
Department of Natural Resources
Office of Coastal Management
617 North Third Street, 10th Floor, Suite 1078
Baton Rouge, LA 70804-4487

RESPONSE TO COMMENTS

Comment No.	Response
1	The review period for the Federal application for consistency review was extended to March 31, 2010 for LDNR-OCM.

Stokes, Janelle S SWG

From: William Schubert [William.Schubert@tpwd.state.tx.us]
Sent: Monday, March 29, 2010 12:35 PM
To: Stokes, Janelle S SWG
Subject: RE: Consistency Determination for SNWW Channel Improvement Project

Jan,

Texas Parks & Wildlife Department concurs that the Tentatively Recommended Plan for the Sabine Neches Waterway Channel Improvement Project is consistent with the goals and policies of the Texas Coastal Management Program. 1

Jamie Schubert

Upper Coast Ecosystem Assessment Team Leader

Texas Parks and Wildlife Department

phone (281)534-0135

fax (281)534-0122

From: Stokes, Janelle S SWG [mailto:janelle.s.stokes@usace.army.mil]
Sent: Tuesday, March 09, 2010 2:00 PM
To: Tammy.Brooks@GLO.STATE.TX.US; William Schubert; Junji.Matsumoto@twdb.state.tx.us; Robert Hansen; rcantu@dot.state.tx.us
Cc: Murphy, Carolyn E SWG
Subject: Consistency Determination for SNWW Channel Improvement Project

Dear Tammy/Jamie/Junji/Robert and Raul,

The consistency review for the proposed SNWW CIP project will be conducted pursuant to the Coastal Coordination Act's Implementation Rules 31 TAC §506.28 "Guidance for Conducting Consistency Reviews in Coordination with an Interagency Coordination Team," issued on December 11, 2003. The Corps of Engineers, Galveston District, has established an interagency coordination team (ICT) that includes as voting members representatives from the following Coastal Coordination Council member agencies: Texas General Land Office, Texas Parks and Wildlife Department, Texas Water Development Board, Texas Commission on Environmental Quality and the Texas Department of Transportation.

Please provide by return email your agency's concurrence that the Tentatively Recommended Plan for the SNWW CIP (as described in the Draft Environmental Impact Statement and Draft Feasibility Report, issued on 24 December 2009) is consistent, to the maximum extent practicable, with the Texas Coastal Management Program goals and policies. Please respond to this request as soon as possible because the deadline for receiving comments on the Texas consistency determination is 12 March 2010.

Thank-you

Janelle Stokes
Regional Environmental Specialist
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

Mr. Jamie Schubert
Upper Coast Ecosystem Assessment Team
Texas Parks and Wildlife Department
1502 FM 517
Dickinson, TX 77539

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for your comment.

BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

MAR 30 2010

U.S. Army Corps of Engineers- Galveston District
CESWG-PE-RE
P.O. Box 1229
Galveston, TX 77553-1229

Attention: Janelle Stokes

RE: Water Quality Certification (WQC 100330-01/AI 104985/CER 20100001)
Sabine-Neches Waterway Channel Improvements Project
Cameron Parish

Dear Ms. Stokes:

We have received notice of your application for a 401 Water Quality Certification to dredge waterbottoms and place spoil material for marine vessel access improvements, along Sabine Pass in southwestern Cameron Parish. Prior to processing the certificate, this office requires:

1. **A proof of publication of the Public Notice in THE ADVOCATE of Baton Rouge.**
2. **A proof of publication of the Public Notice in THE AMERICAN PRESS of Lake Charles.** 1
3. **Assurance that any excavated material will be, to the best of your knowledge, free of contaminants and/or will be disposed of in an approved landfill.** 2
4. **A list of landowners, adjacent to the project site.** 3

Be sure to include our reference number (WQC 100330-01/AI 104985) on all responses. Please send all correspondence to the Louisiana Department of Environmental Quality to the following address:

Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Quality Certifications

Enclosed are copies of public notices to be published by you one time in the official State Journal, THE ADVOCATE of Baton Rouge and THE AMERICAN PRESS of Lake Charles. (As provided for by LRS 30:2074 A(3), the cost of this publication is to be at your expense). PLEASE REQUEST THAT THESE NEWSPAPERS FURNISH US WITH PROOFS OF PUBLICATION OF THIS NOTICE TO THE FOLLOWING ADDRESS:

Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Quality Certifications

A ten-day period after the date of publication will allow for public comment. After this ten-day period has expired, a decision as to whether to grant the certificate will be made in accordance with LAC 33:IX.1507.A-E and provisions of Section 401 of the Clean Water Act.

If we haven't received this information within 30 days from the date of this letter, your application will be considered inactive. If you have any questions, please call Jamie Phillippe at 225-219-3003.

Sincerely,

Tom Killeen

Tom Killeen, Environmental Scientist Manager
Municipal and General Water Permits Section

TK/jjp

PUBLIC NOTICE TO BE RUN IN

THE ADVOCATE OF BATON ROUGE
P.O. Box 588
Baton Rouge, LA 70821
Phone: 225-388-0128
Fax: 225-388-0164

Attn: Public Notices

Notice is hereby given that the Corps of Engineers- Galveston District has applied for a 401 Water Quality Certification to dredge waterbottoms and place spoil material for marine vessel access improvements, along Sabine Pass in southwestern Cameron Parish. The applicant is applying to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with statutory authority contained in the LAC 33:IX.1507.A-E and provisions of Section 401 of the Clean Water Act.

Comments concerning this application can be filed with the Water Permits Section within ten days of this notice by referencing WQC 100330-01/AI 104985 to the following address:

Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Quality Certifications
225-219-3003

A copy of the application is available for inspection and review at the LDEQ Public Records Center, on the first floor of the Galvez Building, Room 127 at 602 North Fifth, Street Baton Rouge, LA 70802 from 8:00 a.m. to 4:30 p.m.

PUBLIC NOTICE TO BE RUN IN

THE AMERICAN PRESS OF LAKE CHARLES
P.O. Box 2893
Lake Charles, LA 70602
Phone: 337-433-3000
Fax: 337-494-4008

Attn: Public Notices

Notice is hereby given that the Corps of Engineers- Galveston District has applied for a 401 Water Quality Certification to dredge waterbottoms and place spoil material for marine vessel access improvements, along Sabine Pass in southwestern Cameron Parish. The applicant is applying to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with statutory authority contained in the LAC 33:IX.1507.A-E and provisions of Section 401 of the Clean Water Act.

Comments concerning this application can be filed with the Water Permits Section within ten days of this notice by referencing WQC 100330-01/AI 104985 to the following address:

Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Quality Certifications
225-219-3003

A copy of the application is available for inspection and review at the LDEQ Public Records Center, on the first floor of the Galvez Building, Room 127 at 602 North Fifth, Street Baton Rouge, LA 70802 from 8:00 a.m. to 4:30 p.m.

Mr. Jamie Phillippe
Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313

RESPONSE TO COMMENTS

Comment No.	Response
1	Public notices meeting the requirements of Louisiana Department of Environmental Quality (LDEQ) have been published in the these newspapers.
2	Information on the potential for contaminants in the dredged material is provided in FEIS Section 3.4 and Section 4.5. In consideration of LDEQ requirements, Sabine Pass sediment was compared to Louisiana's RECAP non-industrial Screening Standards. All detected analytes were below the lowest value for the respective standard. PBS&J also compared water and elutriate results to the Louisiana Water Quality Standards (WQS), and found no exceedances.
3	Information on adjacent landowners is provided in FEIS Section 5.5.4.2, page 5-28 and FR, Appendix 4, Section 21.

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

REPLY TO
ATTENTION OF

Environmental Section

April 07, 2010

Mr. Jamie Phillippe
Louisiana Department of Environmental Quality
Water Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Quality Certifications

Dear Mr. Phillippe:

Reference is made to your letter dated March 30, 2010 regarding Galveston District's request for §401 Water Quality Certification for the proposed Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). We offer the following information to assist in your continuing review.

- You requested proof of publication for public notices in THE ADVOCATE of Baton Rouge and THE AMERICAN PRESS of Lake Charles. Upon review, we found that Galveston District's original public notice publications had not included the Baton Rouge newspaper, and had not required that comments concerning water quality certification be sent directly to your agency. Therefore, we have initiated new notices in both newspapers utilizing the draft language you provided. The public notices were published in THE ADVOCATE of Baton Rouge on April 5, 2010, and in THE AMERICAN PRESS of Lake Charles on April 6, 2010. We have requested that both newspapers furnish your office proofs of publication, and the public notice directs that comments be sent directly to you.

- You requested assurance that any excavated material will be, to the best of our knowledge, free of contaminants and/or disposed of in an approved landfill. The SNWW CIP Draft Environmental Impact Statement (DEIS) Section 3.4 and Section 4.5 discuss sediment analyses conducted for the proposed project, and conclude that there are no causes for concern related to contaminants. We have compared the Sabine Pass sediment data presented in the DEIS with the Louisiana RECAP non-industrial Screening Standards. All detected analytes were below the lowest value for the respective standard. The DEIS compared water and elutriate results to the Louisiana water quality standards, and found no exceedances. This information will be added to the SNWW CIP §404(b)(1) evaluation, Section II.d (Contaminant Determinations).

- You requested a list of landowners adjacent to the project site in Louisiana - the Sabine Pass Channel and Placement Area 5 in Cameron Parish. The SNWW CIP DEIS Section 5.5.4.2 and Draft Feasibility Report, Appendix 4 (Real Estate Plan) provide adjacent landowner information.

In conclusion, we hope this additional information will be helpful in your review. We trust that we have provided sufficient information for you to provide §401 State Water Quality certification. However, we would be happy to meet with you to provide further information if needed. Please do not hesitate to contact Ms. Janelle Stokes at 409/766-3039 should you need further assistance.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

Coastal Coordination Council

P.O. Box 12873 ♦ Austin, Texas 78711-2873 ♦ (800) 998-4GLO ♦ FAX (512) 475-0680

Chairman

Jerry Patterson
Texas Land Commissioner

♦

Members

Karen Hixon
Parks & Wildlife Commission of Texas

Jose Dodier
Texas State Soil & Water Conservation Board

Edward G. Vaughan
Texas Water Development Board

Ned Holmes
Texas Transportation Commission

Elizabeth Jones
Railroad Commission of Texas

H. S. Buddy Garcia
Texas Commission on Environmental Quality

Robert R. Stickney
Sea Grant College Program

Robert "Bob" Jones
Coastal Resident Representative

Jerry Mohn
Coastal Business Representative

George Deshotels
Coastal Government Representative

Bob McCan
Agriculture Representative

♦

Tammy Brooks
Council Secretary

Jesse Solis, Jr.
Permit Service Center
Corpus Christi
1-866-894-3578

Permit Service Center
Galveston
1-866-894-7664

March 30, 2010

Ms. Carolyn Murphy
Chief, Environmental Section
Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553

Re: Sabine - Neches Waterway Improvements Project
CMP # 10-0048-F2

Dear Ms. Murphy,

As required by 31 T.A.C. § 506.28(b), the Coastal Coordination Council (Council) issues this consistency agreement for the Sabine - Neches Waterway Improvements Project (Project), a federal development project conducted by the US Army Corps of Engineers (USACE).

USACE established an interagency coordination team (ICT) for the Project pursuant to 31 T.A.C. § 506.28(b). Its duties included advising the USACE on the consistency of the Project and included among its voting members a minimum of three Council member agency representatives. A majority of the Council member agency representatives on the ICT found the Project to be consistent, to the maximum extent practicable, with the CMP goals and policies. USACE adopted the ICT consensus position on consistency and submitted it to the Council as its consistency determination for the Project. None of the Council member agency representatives on the ICT objected to USACE's consistency determination in writing within 15 days after the close of the public comment period.

Therefore, the Council accepts and adopts the consistency determination for the Project as submitted by the USACE in accordance with 31 Texas Administrative Code § 506.28(b).

Sincerely,

Tammy S. Brooks
Consistency Review Coordinator
Texas General Land Office

Ms. Tammy Brooks
Coastal Coordination Council Secretary
Consistency Review Coordinator
Texas General Land Office
P.O. Box 12873
Austin, TX 78711-2873

RESPONSE TO COMMENTS

Comment No.	Response
1	The FEIS has been revised to note that the TX CCC accepts and adopts the consistency determination for the proposed SNWW CIP as submitted by USACE in accordance with 31 Texas Administrative Code § 506.28(b).

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

March 12, 2010

Dolan Dunn
Chief, Planning, Environmental & Regulatory Division
Dept. of the Army
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, TX 77563-1229

RE: Draft Feasibility Report and Draft EIS for the Sabine – Neches Waterway Improvements Project, Southeast Texas and Southwest Louisiana

Dear Mr. Dunn:

The Louisiana Department of Natural Resources, Office of Coastal Management (LDNR OCM), has reviewed the above-referenced Draft Feasibility Report and Draft EIS for the Sabine – Neches Waterway Improvements Project, and we offer the following comments. The Consistency Determination submitted by your agency for the proposed activity continues to be under review by this Office; the issues noted below will have to be resolved prior to the construction phase, in order for OCM to concur that the final design is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program in accordance with Section 307(c) of the Coastal Zone Management Act of 1972, as amended.

In addition, the Louisiana Office of Coastal Protection and Restoration (OCPR) has commented to LDNR that there are significant uncertainties about the compliance of the Draft Report's Tentatively Recommended Plan (TRP) with the attached "Louisiana's Integrated Ecosystem Restoration and Hurricane Protection: Comprehensive Master Plan for a Sustainable Coast" (Master Plan). Since conformance with the Master Plan is an enforceable policy of the State of Louisiana's coastal management program, it is essential that these uncertainties are addressed so that Master Plan compliance can be more accurately determined prior to final project design.

Storm Surge:

- Effects of the deeper shipping channel, Gulf Intracoastal Waterway (GIWW) deepening, and borrow area excavation in Sabine Lake may be significant and have not been modeled thoroughly enough to identify all potential impacts.
- Upland confined disposal sites on the Texas side of the project may create a barrier to storm surge, redirecting water to Louisiana that under present circumstances goes to Texas. Though

OCM acknowledges that the areas which are threatened by this potential inundation are not heavily populated, storm surge does adversely affect coastal resources.
- Offshore disposal sites from the bar channel dredging may alter storm currents, potentially increasing set-up and erosion on Louisiana shores.

Bar Channel deepening:
- Modeling of potential impacts on wave climate and resulting shoreline impacts was not performed. There is no objective means of estimating potential impacts to the Gulf shoreline due to the bar channel deepening.

Salinity:
- Modeling of potential salinity changes used questionable assumptions and boundary conditions, and data collected over a short and non-representative time period, casting doubt on the reliability of the model results.

Borrow Site in Sabine Lake:
- Specific site locations must be identified.
- Flotation access channel route must be identified.
- Disposal plans for material removed from the access channel route must be described.
- Disposal plans for access channel material and overburden, if any, from borrow site(s) must be described.
- Mitigation must be accomplished for submerged aquatic vegetation and oyster seed ground impacts to the satisfaction of LDWF.
- Effects of excavation on wave and tidal climate and potential shoreline erosion must be more thoroughly modeled and evaluated.
- Geotechnical information on borrow quality should be collected and evaluated.
- Royalty payments and license issues over sediment resources must be resolved with LDWF.

Borrow Site in Gulf Intracoastal Waterway:
- Geotechnical data must be collected and analyzed for sediment suitability.
- Geotechnical data must be collected and analyzed for slope stability.
- Shoreline stabilization plans must be proposed.
- The location and configuration of the channel bottom to be left undisturbed to prevent salt water intrusion must be fully described. Analysis of its response to routine scour as well as storm surge, over the project life, must be presented.

Mitigation:
- In general, the details of proposed mitigation are insufficient to determine whether all potential losses to the coastal resources of Louisiana will be adequately compensated.
- Disposal site final locations and design are not identified.
- Geotechnical data for disposal site design must be collected and evaluated.
- Mitigation project lifetime maintenance and repair must be addressed. Can the Local Sponsor do such work in Louisiana?
- Average Annual Habitat Units (AAHUs) generated by proposed mitigation fall at least 318 AAHUs short of replacing the anticipated habitat losses to Louisiana. Additional mitigation will need to be performed in Louisiana to offset this deficit.
- 210 AAHUs are claimed to be created by the shoreline deposition of bar channel maintenance material onto the Gulf shoreline east of the Sabine jetties. The material has only 18% sand; it

is unlikely that such fine grained material will remain in place for the project life and the DEIS notes that the effects of large storm systems were not included in the consideration. Even with periodic maintenance, the ability of such a deposit to provide 210 AAHUs is questionable. Additional mitigation in Louisiana will be required to make up for those AAHUs unless an acceptable technical justification of the projected benefits is provided.

Pipelines:

- Plats showing all pipelines affected by the deepening of the navigation channel, GIWW, flotation access channel and borrow site must be provided. The Galveston District must also provide a plan for the re-location of any pipelines that might be required as a result of the recommended plan and each of the alternatives.
- Any potential impacts to Louisiana industries as a result of pipeline re-locations or other construction and/or maintenance related activities must be fully evaluated, and minimized and/or mitigated.

As ever, the Office of Coastal Management appreciates the opportunity to comment on this proposed project, and we look forward to working with your staff to resolve these many issues. If you have any questions please call me at (225) 342-5052.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm

ATTACHMENT

cc: David Frugé, OCPR
Ismail Merhi, OCPR
Keith Lovell, OCM
Rick Hartman, NMFS
Myles Hebert, Cameron Parish
Rickey Broulliet, OCPR
Kyle Balkum, LDWF
Dave Butler, LDWF
Darryl Clark, USFWS

ATTACHMENT

Office of Coastal Protection and Restoration Master Plan Consistency Comments on Tentatively Recommended Plan for Sabine-Neches Waterway Channel Improvement Project

March 11, 2010

The U.S. Army Corps of Engineers' (USACE) Galveston District is conducting a feasibility study of the Sabine-Neches Waterway Channel Improvement Project in Southeast Texas and Southwest Louisiana. Louisiana Office of Coastal Protection and Restoration (OCRP) staff reviewed the December 2009 Draft Environmental Impact Statement (EIS) and Draft Feasibility Report (Draft Report), and had telephone conversations with USACE Galveston District personnel about aspects of those documents. That review indicates there are still significant issues and uncertainties relative to the consistency of the Draft Report's Tentatively Recommended Plan (TRP) with "Louisiana's Integrated Ecosystem Restoration and Hurricane Protection: Comprehensive Master Plan for a Sustainable Coast" (Master Plan). While we are not stating at this time that the TRP is inconsistent with the Master Plan, it is essential that these issues and uncertainties be sufficiently addressed prior to final project design so Master Plan consistency can be more accurately determined.

The following comments identify key uncertainties and deficiencies and offer recommendations for addressing them prior to a final consistency determination to be provided by the USACE to the Louisiana Department of Natural Resources pursuant to the Coastal Zone Management Act. These comments are grouped by relevant components of the Master Plan.

Master Plan Objective #1

Reduce economic losses from storm based flooding to residential, public, industrial, and commercial infrastructure, assuring that assets are protected, at a minimum, from a storm surge that has a 1% chance of occurring in any given year.

OCPR technical staff has serious concerns about the adequacy of the modeling of storm surge impacts on the Louisiana portion of the study area. The current standard for storm surge impacts to still water elevation and waves during tropical storm events uses "coupled" ADCIRC/STWAVE modeling. To date, such evaluations have not been performed for the TRP. Such modeling should include the project's "annual" impacts not only occurring under the "normal" tidal conditions, but also considering statistically based evaluations using appropriate sets of storms to establish the project's impacts for multiple return interval conditions so that the total damages/impacts/benefits are established (integrated over the full realm of return intervals). Verbal communications with USACE personnel suggest that three storms (with two scenarios) will be modeled. OCPR staff does not believe that the number of storms currently planned for

modeling is sufficient to adequately assess impacts. Thus, formal assurances by the USACE are needed, indicating that sufficient modeling of project-related storm surge and wave impacts will be performed prior to completion of final design, and that the results and methodology will be provided to the State of Louisiana for further review.

The USACE modeling has not demonstrated that spoil placement and consequent increased elevation of upland confined disposal sites on the Texas side will not deflect storm surge to the Louisiana side. Such modeling is needed to determine whether project-induced changes to storm surge and wave conditions could cause economic damages to Louisiana infrastructure. Offshore disposal sites created from dredging the bar channel may create partial barriers to storm currents, potentially increasing set-up on Louisiana shores under "normal" annual conditions and under larger tropical storm events.

Master Plan Objective #3

Provide habitats suitable to support an array of commercial and recreational activities coast-wide.

Adverse habitat impacts are to be offset via restoration of 2,783 acres of marsh, nourishment of 4,355 acres of existing marsh, and improvement of 957 acres of shallow water habitat. However, we are concerned that, under the TRP, adverse impacts to coastal wetlands in Louisiana will not be fully mitigated within Louisiana. The TRP assigns 318 Average Annual Habitat Units (AAHUs) of "excess benefits", resulting from the beneficial use of dredged material in Texas, to Louisiana in order to mitigate impacts to wetlands on the federally owned Sabine National Wildlife Refuge, located in Louisiana. From a Master Plan consistency standpoint, we believe that it is inappropriate to apply "excess benefits" in that manner; those impacts will still occur within Louisiana's boundaries, so the mitigation should occur within those boundaries.

OCPR technical staff also has concerns about the amount of mitigation projected to result from beneficial use of dredged material along the Gulf shoreline near Louisiana Point. Since the involved materials are predominantly clays and silts (less than 20% sand), OCPR technical staff are not convinced this project feature will achieve a net benefit of 210 AAHUs. A full explanation of the calculation of these benefits should be presented, as additional mitigation in Louisiana will be required if those projections cannot be adequately justified.

Elevation surveys and geotechnical information/analysis/design will be required to determine if the borrow quantities and fill areas are adequately designed to help ensure the success of the mitigation plan in fully compensating for project impacts.

Given the above issues and uncertainties, the USACE should provide written assurance that the final mitigation project plans and designs will fully offset project impacts to Louisiana's coastal wetlands (including impacts to federal lands within Louisiana); that assurance should provide for review and concurrence by the State of Louisiana.

The Ecological Model assumes that the marshes in western Cameron Parish will recover to existing conditions following a storm event; based on observations following Hurricane Rita, OCPR technical staff do not believe that assumption is correct.

OCPR has concerns that project's alteration of seafloor, lake and channel topography may result in significant adverse effects on additional marshes in Louisiana if storm surge into those marshes is increased by the project's enlarged channel dimensions.

The Ecological Model states that drainage in the Chenier Plain marshes (under normal conditions) is ". . . impaired by numerous hydrologic modifications such as the GIWW [and] the SNWW." These marshes are primarily brackish and intermediate types. OCPR technical staff has concerns that removal of borrow material for marsh creation from the GIWW channel bottom, as well as some of the borrow excavation within Sabine Lake, will introduce greater levels of salinity into these marshes during normal tidal conditions, possibly resulting in marsh vegetation die-offs and conversion of marsh to open water.

Changes to the tides, storm surge and wave conditions associated with the project could potentially increase shoreline erosion rates, and increase storm surge and salinity-induced changes to surrounding marshes.

Of the 16 total hydrologic monitoring sites, 7 were located in Louisiana. Of those 7 sites, 3 sites (#7, # 9, and #12) experienced equipment malfunctions resulting in 1.5 to 8 months of lost data, thus limiting comparison of the data to other sites.

The salinity model report concludes that the project would result in only a 0 to 2 parts per thousand (ppt) salinity change impact. However, OCPR technical staff has several concerns regarding use of the modeling results referenced in the December 2009 Draft Report to reach conclusions on project impacts and related habitat mitigation needs for the TRP. USACE Galveston District personnel have indicated that there is no plan to perform additional modeling work. Key OCPR concerns include:

1. No access to data reports on which some of the initial and boundary conditions were based.
2. Data collection involved very short periods to judge the effectiveness of model calibration and verification.
3. Modeling used little salinity information outside the channels to perform the calibration and verification.
4. The model generally performed poorly in salinity predictions as compared to salinity measurements in the channels and lakes. In some cases, differences between predicted and measured salinity ranged from 5 to 15 ppt. Attempts were made to reconcile the differences by "introducing salinity" into the modeling effort.

5. The model domain ignored the boundary/interaction between the Calcasieu and Sabine basins.
6. It appears that most of the marsh in Louisiana was not modeled and only limited areas were considered in an ad hoc way (ignoring over-marsh flows); this approach will not capture project impacts on the marsh for larger tropical storm and hurricane salinity impacts.
7. The project will deepen the channel to 48 feet, not including 2 more feet of advanced maintenance and another 2 feet of allowable over-depth. Thus, during larger tidal and tropical storm events the channel could be 52 feet deep rather than 48 feet. Louisiana's marshes are susceptible to damages from salinity increases during larger tropical storms, so it is very likely that this modeling approach will underestimate damages to the marshes resulting from the channel deepening. The modeling effort also ignores the potential impacts associated with major hurricane (Ike/Gustav) years. Complicating the evaluation is the use of future relative sea level rise conditions that tend to "muddy the waters" regarding the estimated project impacts.
8. Pool 3 in Sabine National Wildlife Refuge was not included in the study (p. 4-26) because it has historically been a freshwater impoundment, hydrologically isolated from the surrounding marsh. The containment levees were breached in 2005 as a result of Hurricane Rita. Therefore, this area should be considered in the model since it will be impacted by the project. Because of extensive landscape alterations resulting from Hurricanes Rita and Ike (land loss, vegetation stress and instability of the soils), the conditions in the model may not apply.
9. The modelers were apparently not aware of the existence of Louisiana's Coast Wide Reference Monitoring System. OCPR has 15 CRMS sites in the impacted area. It would be prudent to review the available data to assess the reasonableness of model baseline assumptions compared to the 2007 non-storm and 2008 storm (Ike/Gustav) years.

We recommend that the USACE provide a written commitment to rectify the above deficiencies in their Dec. 2009 salinity modeling not later than the engineering and design phase of the project, and to include language in the final feasibility study report indicating that additional adverse salinity impacts to wetlands anticipated as a result of that additional salinity modeling will be fully mitigated at project cost.

Master Plan Recommendations

The Master Plan recommends stabilizing key areas along the Chenier Plain's bay and lake shorelines that, if breached, would have catastrophic results for the landscape.

It is not clear that the USACE has evaluated the potential effects of excavating marsh creation material at the proposed borrow sites on shoreline erosion and bank stability. The results of those evaluations should be provided, and included in the impacts and mitigation analyses. The borrow source(s) may need to be moved to eliminate such impacts, depending on the results.

The Master Plan seeks to maintain the integrity of freshwater resources by fortifying and maintaining spoil banks along the GIWW and placing saltwater barriers at deep draft shipping channels to manage salinity levels

Potential effects of excavating the GIWW borrow source, such as on shoreline erosion and slope stability, should be evaluated and included in the impacts and mitigation analyses. The recommended project plan should include installing shoreline stabilization measures along the GIWW borrow site, or avoiding use of that site, if those evaluations disclose such a need. The recommended project plan should also ensure the continued function of the salinity plug at the western boundary of the GIWW segment to be used as a borrow site.

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL RESTORATION AND MANAGEMENT

March 31, 2010

Dolan Dunn
Chief, Planning, Environmental and Regulatory Division
Dept. of the Army
Galveston District, Corps of Engineers
P. O. Box 1229
Galveston, TX 77563-1229

RE: **C20090667**, Coastal Zone Consistency
Galveston District, Corps of Engineers
Direct Federal Action
Feasibility Study and Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, **Cameron Parish, Louisiana**

Dear Mr. Dunn:

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. This office finds that the project, as proposed in the application, is conditionally consistent with the LCRP.

Pursuant to NOAA regulations on federal consistency at 15 CFR 930.4(a)(1), a conditional consistency concurrence must include the conditions which must be satisfied; an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies.

Explanation of necessity:

The Louisiana Department of Natural Resources (LDNR) Office of Coastal Management (OCM) has concluded, based on staff review and comments from the Louisiana Office of Coastal Protection and Restoration, the Louisiana Department of Wildlife and Fisheries, and other agencies, that the Draft Feasibility Study and Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement project is generally consistent with the LCRP provided that the conditions described herein are met. As outlined in our comment letter of March 12, 2010, the project as described lacks many significant details as to design features and locations, potential impacts, and the means by which these impacts will be avoided, reduced, minimized, and compensated for. This would include, but not be limited to, the topics of storm surge, bar channel deepening, salinity, borrow from Sabine Lake, mitigation plans and adequacy, and pipeline relocation. Further, the

adequacy of completed and planned modeling of potential salinity changes, storm surge, and other impacts is of significant concern, and must be conducted in a way in which this State can have full confidence in the analytical results. Please note in particular that your response letter, dated March 19, 2010, does not constitute an adequate resolution to the issues described.

Conditions:

In order to be consistent, to the maximum extent practicable with the LCRP, the Corps of Engineers-Galveston District must prepare an additional consistency determination, which will be submitted to LDNR pursuant to 15 CFR 930 Subpart C, when this project has reached a point in the planning or design process where all project elements can be described in detail, but modifications may still be made if necessary to achieve full consistency with the LCRP. This will be no later than the time at which the draft Contract Plans and Specifications are circulated for internal Corps review. This subsequent consistency determination will include the draft Plans and Specifications as well as detailed information sufficient for the evaluation of all proposed actions for consistency with the LCRP and the Master Plan. 1

Enforceable policies:

Louisiana's State and Local Coastal Resources Management Act (SLCRMA) and the Louisiana Administrative Code (LAC) address the requirements for information necessary for the review of consistency determinations in several places. Relevant enforceable policies may be found in Coastal Use Guidelines in the Louisiana Administrative Code Title 43, Part I:

§701 F 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:

1. type, nature, and location of use;
2. elevation, soil, and water conditions and flood and storm hazard characteristics of site;
3. techniques and materials used in construction, operation, and maintenance of use;
4. existing drainage patterns and water regimes of surrounding area including flow, circulation, quality, quantity, and salinity; and impacts on them;
5. availability of feasible alternative sites or methods of implementing the use;
6. designation of the area for certain uses as part of a local program;
7. economic need for use and extent of impacts of use on economy of locality;
8. extent of resulting public and private benefits;
9. extent of coastal water dependency of the use;
10. existence of necessary infrastructure to support the use and public costs resulting from use;
11. extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited;
12. proximity to and extent of impacts on important natural features such as beaches, barrier islands, tidal passes, wildlife and aquatic habitats, and forest lands;

13. 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 zone as identified in the coastal resources program;

14. proximity to, and extent of impacts on, special areas, particular areas, or other areas of particular concern of the state program or local programs;

15. likelihood of, and extent of impacts of, resulting secondary impacts and cumulative impacts;

16. proximity to and extent of impacts on public lands or works, or historic, recreational, or cultural resources;

17. extent of impacts on navigation, fishing, public access, and recreational opportunities;

18. extent of compatibility with natural and cultural setting;

19. extent of long term benefits or adverse impacts.

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

2. adverse economic impacts on the locality of the use and affected governmental bodies;

4. alterations in the natural concentration of oxygen in coastal waters;

5. destruction or adverse alterations of streams, wetland, tidal passes, inshore waters and waterbottoms, beaches, dunes, barrier islands, and other natural biologically valuable areas or protective coastal features;

7. alterations of the natural temperature regime of coastal waters;

8. detrimental changes in existing salinity regimes;

10. adverse effects of cumulative impacts;

11. detrimental discharges of suspended solids into coastal waters, including turbidity resulting from dredging;

15. fostering of detrimental secondary impacts in undisturbed or biologically highly productive wetland areas;

16. 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 forestlands;

17. 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;

18. adverse disruptions of coastal wildlife and fishery migratory patterns;

19. land loss, erosion, and subsidence;

20. increases in the potential for flood, hurricane and other storm damage, or increases in the likelihood that damage will occur from such hazards;

21. reduction in the long term biological productivity of the coastal ecosystem.

NOAA Regulations at 15 CFR 930.4(a)(2) state that the Federal agency shall modify its project proposal pursuant to the State agency's conditions. The Federal agency shall immediately notify the State agency if the State agency's conditions are not acceptable. Section 930.4(b) states that, if the requirements of §930.4(a)(1) through (3) are not met, all parties shall treat the State agency's conditional concurrence as an objection pursuant to §930 Subpart C.

Finally, pursuant to §930.63(e), your agency has the opportunity to appeal this conditional concurrence/objection to the Secretary of Commerce within 30 days after receipt of this conditional concurrence/objection.

OCM appreciates the opportunities provided by the Galveston District to review this important project. OCM is fully aware of the importance of navigation to this state and the nation and is committed to working together to enable the project to be completed in a manner which does not adversely affect the coastal resources of the state. We anticipate that our participation in future work by the Interagency Coordination Team (ICT) will identify those specific issues which will require detailed assessment by the Corps prior to our final review for consistency with the LCRP.

If you should have any questions on this matter, please contact me at (225) 342-5052.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm

cc: David Frugé, OCPR
Kyle Balkum, LDWF
Dave Butler, LDWF
Darryl Clark, USFWS
Janelle Stokes, COE, Galveston
Rickey Brouillette, OCPR
Keith Lovell, OCM
Rick Hartman, NMFS
Myles Hebert, Cameron Parish

Mr. Gregory J. DuCote
Administrator, Interagency Affairs/Field Services Division
State of Louisiana
Department of Natural Resources
Office of Coastal Management
617 North Third Street, 10th Floor, Suite 1078
Baton Rouge, LA 70804-4487

RESPONSE TO COMMENTS

Comment No.	Response
1	USACE does not consider the condition to be acceptable. USACE has concluded that the proposed SNWW CIP is fully consistent to the maximum extent practicable with the enforceable policies of the Louisiana Coastal Resource Program, though LDNR-OCM objects. This agency has gone to great lengths to demonstrate that we have fulfilled these requirements as demonstrated by nearly ten years of coordination with LDNR and LDWF through the SNWW ICT, and extensive studies and modeling described in our letter of March 19, 2010.

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

REPLY TO
ATTENTION OF

March 19, 2010

Environmental Section

Mr. Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division
Louisiana Department of Natural Resources
Office of Coastal Management
P.O. Box 44487
Baton Rouge, Louisiana 70804-4487

Dear Mr. DuCote,

Reference is made to your letters dated February 5, 2010 and March 12, 2010 regarding the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP) Draft Feasibility Study and Draft Environmental Impact Statement (DEIS), issued for public and agency review on December 24, 2009. In response to several requests, Galveston District (District) extended the public comment period to March 12, 2010. An Interagency Coordination Team (ICT) comprised of Federal and State resource agency representatives from Texas and Louisiana has assisted Galveston District in modeling and analyzing environmental impacts, and selecting beneficial use (BU) and mitigation measures for the Tentatively Recommended Plan. The Department of Natural Resources (LDNR) has had a representative on the ICT since its inception in 2000 through the last ICT meeting on August 27, 2009. The District has consulted with LDNR (as a member of the ICT) concerning most of the technical issues raised in these letters, and many issues originally approved by LDNR as a member of the ICT are now being reopened. Nevertheless, we would like to work with you in resolving the concerns of the Louisiana Department of Natural Resources, Office of Coastal Management (LDNR-OCM) and the LDNR Office of Coastal Protection and Restoration (OCPR) and offer the following point-by-point response to issues discussed in both letters.

Storm Surge

LDNR asserts that the effects of the deeper shipping channel and the borrow of material from the Gulf Intracoastal Waterway (GIWW) and Sabine Lake may be significant and have not been modeled thoroughly enough to identify all potential impacts. The Coastal Hydraulic Laboratory at the Corps of Engineer's Engineering Research and Development Center (ERDC-CHL) was consulted about the need to model the salinity effect of borrowing material from the GIWW and Sabine Lake relative to salinity impacts. Neither feature was expected to increase salinity impacts and so they were not included in the hydrodynamic salinity (HS) modeling.

ERDC was also consulted on the potential for offshore dredged material disposal sites (ODMDS) to increase wave set-up and erosion on Louisiana shores. In a teleconference on February 5, 2010, ERDC explained to LDNR personnel that the ODMDS sites are located too far from shore and in water too deep to affect the Louisiana shore. Waves of any consequence

present within a few hundred meters of the shoreline are generally depth limited because of the mild nearshore slope and the presence of a soft mud (Pacific International Engineering, 2003, Coastal geomorphology of a non-barrier Gulf of Mexico beach: Analysis for protection of Highway 87 and McFaddin NWR in Jefferson County, Texas). The closest ODMDS (#4) is located between 3.8 and 6 miles from Louisiana in 34-43 ft of water. It is used by the existing project for maintenance dredging of the Sabine Pass Jetty Channel. MDFATE modeling (DEIS Appendix B) has shown that it will accommodate new work and maintenance material from the proposed project with mounding to a maximum of 5 to 7.5 feet at the time of placement. Previous monitoring of this ODMDS and studies of bottom ocean currents in the region have determined that the material would disperse between placement cycles and not accumulate. Therefore the height of material placed in this (and all other) SNWW ODMDS would not affect wave set-up or erosion. Further modeling is not warranted.

ERDC has just completed a sensitivity analysis of potential storm surge impacts from the deeper shipping channel and placement areas (Wamsley, Cialone and McAlpin, 2010, Surge Sensitivity Analysis for Sabine Neches Water Navigation Project, ERDC-CHL). The results of this analysis were also presented to LDNR in the March 3, 2010, teleconference. The analysis clearly and unequivocally identifies no impact to Louisiana from the deflection of storm surges by the higher PA levees or from the deeper navigation channel. Therefore, further modeling to identify impacts is not necessary.

Bar Channel Deepening.

LDNR's assertion that modeling of potential impacts on wave climate was not performed is incorrect. Modeling has been performed by ERDC-CHL as reported by Gravens and King (2003, Shoreline impacts study for Sabine-Neches Project) and this fact was communicated to LDNR in the 2/5/2010 teleconference; a link to the report was emailed to them that same day. The report has been presented on SWG's SNWW webpage since 2003, and it is reported in the DEIS in Section 4.6.2.2. Furthermore, the ERDC modeling report was reviewed and approved by ICT (which included LDNR). The Gravens and King (2003) modeling report addressed the changes in the wave climate that would be produced by a deeper and longer offshore channel, including the Outer Bar Channel, to which we assume the comment relates. In the first two miles east of Sabine Pass, the net eastward transport would be slightly reduced (by a maximum of about 1400 yds^3/yr), and further east there would be essentially no change. For a 50 ft project, between a half mile and 3-4 miles of the east jetty, the accretion would decrease by less than 0.5 ft/yr, and further from the jetties than that, the change in the shoreline change would decrease to zero. This small impact would be more than offset by the proposed Gulf Shore beneficial use (BU) feature's regular shoreline nourishment at Louisiana Point.

Salinity

LDNR asserts that the SNWW salinity modeling used questionable assumptions and boundary conditions, and data collected over a short and non-representative time period. Boundary conditions and assumptions were developed by ERDC and coordinated with the ICT in numerous meetings of the ICT and its modeling workgroup from 2000-2004, and the revised HS

modeling presented at the last ICT meeting on August, 27, 2009. While LDNR participated in most of the Modeling Workgroup Meetings, and all prior ICT meetings, no representatives from LDNR attended the last ICT meeting. The ICT presented no objections to the revised modeling at this meeting. The HS modeling (both original and revised) has been subjected to extensive agency technical review (ATR) and Independent External Peer Review (IEPR). ATR identified no significant concerns. The primary IEPR concern related to the need to include the effects of relative sea level rise. This was added in the revised HS Model analysis (Brown and Stokes, 2009, Numerical Model Study of Potential Salinity Impacts Due to Proposed Navigation Improvements to the Sabine-Neches Waterway, Texas, ERDC-CHL).

Borrow Site in Sabine Lake

LDNR lists several types of information that are needed prior to construction. In our February 5, 2010 teleconference, the District stated that we would work with the ICT (which includes LDNR and the Louisiana Department of Wildlife and Fisheries [LDWF]) to obtain all of the information (i.e. geotechnical information on borrow quality, analysis of potential access channels and disposal plans) needed to develop detailed engineering plans during preconstruction, engineering and design (PED). The need for wave climate modeling to support design considerations would be determined at that time. Designs would minimize impacts to the greatest extent possible. The DEIS (Section 5.5.1) fully evaluated potential impacts of the access channels and borrow area and determined that impacts would be minimal and temporary.

LDNR states that mitigation of oyster seed ground impacts must be accomplished to the satisfaction of LDWF. DEIS Section 5.5.1 evaluates the potential impacts by the proposed access route/borrow area. The dedicated dredging would take approximately 3.1 million cubic yards of material from a 1.8-mile-long borrow trench in Sabine Lake. An access channel, approximately 8 miles long, from the GIWW near the mouth of the Sabine River would be needed for the dredge to reach the proposed borrow area. The exact locations of the borrow trench and access channel would be determined in consultation with the ICT after PED bottom surveys of potential locations. The proposed route of the access channel was chosen to keep dredging impacts to a minimum; it takes advantage of deeper water in the center of the lake, thereby minimizing dredging and bottom impacts.

Benthic fauna would be removed when the borrow sediment is excavated; however, benthic organisms can rapidly recolonize and no long-term effects are anticipated. Due to low salinity (1 to 6 parts per thousand [ppt]) in this area of Sabine Lake, live oyster reefs are not likely (Fagerberg, 2003, Field Data Collection Summary Report for the Sabine-Neches Waterway Study, ERDC). A study by T. Baker Smith, Inc. (2006, Oyster Assessment for Proposed Locations, Flow Lines and Facilities to Serve the Ballard Well SL 17131 No. 1 and the MF 102080 Well No. 1, Sabine Lake, Cameron Parish, Louisiana, and Jefferson County, Texas) found no live oyster reefs in this area. Submerged aquatic vegetation (SAV) is not likely to be found in this area due to low salinities and shallow, turbulent water. Nevertheless, as stated in DEIS Section ES.5 and Section 5.5.1 and in our letter dated March 4, 2010 to LDWF, we propose that a water bottom survey of the borrow and access channel areas be conducted after

approval of the Chief of Engineer's report, during the PED phase of the project. In the unlikely event that oyster reef is encountered, plans will be revised to avoid impacts.

LDNR states that mitigation of SAV impacts must be accomplished to the LDWF. In our letter dated March 4, 2010 to LDWF, the District agreed to reevaluate SAV impacts if additional information on potential SAV impacts is provided. To date, no additional information has been provided by LDWF or any other agency. DEIS Appendix C, Section 4.2 describes the Wetland Value Assessment (WVA) modeling of the model variable "Percent Submerged Aquatic Vegetation." The WVA model documentation described in DEIS Appendix C, Section 2.6.1.2, defines SAV as any of the diverse array of floating-leaved and submerged aquatic plants that are typically found in a study area. SAV coverage is included as a model variable because it provides important food and cover to a wide variety of fish and wildlife. The model evaluates the percentage of open water that is dominated by SAV, without consideration as to whether it is native or invasive. The WVA modeling utilized an inventory of SAV species in the study area that was prepared by the District using recent monitoring reports and other available scientific literature. Potential project impacts would be related to the increase in salinity that would occur with deepening of the SNWW navigation channel. As described in DEIS Section 4.2.1, one native and one invasive SAV species out of 10 species present in LA 1 would be affected by the predicted salinity change. It is expected that any SAV cover lost due to the gradual salinity change would be replaced by salinity tolerant SAV species continuing to grow within their tolerance ranges. As a result, no actual impact to percent SAV cover would be expected. The best available scientific information was used to establish salinity ranges for the evaluation; differences in scientific opinion regarding these ranges are readily apparent in the literature. As no new information has yet been provided, we see no reason to revise the WVA modeling at this time.

LDNR asserts that royalty payments and license issues over sediment resources must be resolved with LDWF before the OCM can concur that the final design is consistent, to the maximum extent practicable, with Louisiana Coastal Resources Program. The District maintains that the United States is not bound by Louisiana statute (R.S. 56:2011) pursuant to the Supremacy Clause of the United States Constitution, and that Louisiana is not entitled to compensation under the Fifth Amendment, pursuant to the doctrine of Navigation Servitude. This servitude gives the Federal Government the right to use the "Navigable Waters" of the United States without compensation for navigation projects. The applicability of the Navigation Servitude has been interpreted broadly to include not only traditional navigation projects, such as locks and dams, but also to apply when actions are in furtherance of aesthetic, ecological, environmental, economic or commercial public interests in navigable waterways, United States v. 967,905 Acres in Cook County, 447 F. 2d 764, 771 (8th Cir. Min., 1971). The landmark decision United Transmission Co. v. U.S. Army Corps of Engineers, 772 F. Supp 952 (E.D. Tex., Jul 11, 1991), 7 F. 3d 436 (5th Cir. Tex., Nov 18, 1993, 512 U.S. 1235 (U.S. Jun 27, 1994) Cert. Denied, upheld the Corps' authority to exercise the Navigation Servitude and its "§10 permit authority," as codified in §10 of the Rivers and Harbors Act, 33 U.S.C. §401 et seq., to effect the removal of obstructions to navigation, even though the Federal project was authorized, not for navigation, but for flood control.

Additionally, the State of Louisiana has no compensable interest under the Fifth Amendment, because its interests are subservient to the dominant Navigation Servitude. This is illustrated in a recent case before the United States Court of Appeals, Federal Circuit (July 31, 2009), Northwest Louisiana Fish & Game Preserve Commission v. United States 2009 WL 2341986 (C.A.Fed.) In this case, the State of Louisiana alleged that the U.S. Army Corps of Engineer's construction and operation of the Red River Navigation Project caused a severe hydrilla and coontail infestation in Black/Clear Lake, making some parts of the Lake useless for recreation. The Court held that "the Government's navigational servitude is derived from the principle that all navigable waters in the United States are considered public property, Owen v. United States, 851 F.2d 1404, 1408 (Fed Cir. 1998) (en banc). This court has acknowledged the extraordinary priority given to navigable waters, noting that they are under the 'exclusive control of the federal government.' Id. . . . The dominant servitude defines the limits within which Congress can work to improve navigation without creating an obligation to pay just compensation under the Fifth Amendment." Owen, 851 F.2d at 1408. The Court concluded that "because the Commission's interest is subservient to the Government's dominant servitude, it is not compensable under the Fifth Amendment, 2009 WL 2341986 (C.A.Fed.), p. 5. For the SNWW CIP, an evaluation of the connection between the removal of fill material for the Willow Bayou marsh mitigation areas and the navigation purpose of the underlying project is simple. But for construction of the proposed project, the environmental mitigation and BU marsh restoration would not be necessary.

Borrow Site in GIWW

LDNR lists several types of information that are needed prior to construction. In our February 5, 2010 teleconference, the District stated that we would work with ICT (which includes LDNR) to obtain all of the information (i.e. geotechnical information on sediment suitability and slope stability, and complete an analysis of the "salinity plug" in the GIWW at its intersection with the Sabine River) needed to develop detailed engineering plans. Designs would minimize impacts to the greatest extent possible; instability of emergent shorelines is not anticipated because dredging would remove accumulated maintenance material only, as described in DEIS (Section 5.5.2). In situ sediments beside and below the existing GIWW channel would not be disturbed. However, should analyses determine that stabilization of small areas is needed; the District would propose stabilization plans at that time.

Mitigation

LDNR asserts that details of the proposed mitigation are insufficient to determine whether all potential losses will be adequately compensated. The District disagrees – mitigation site locations have been finalized despite the LDNR assertion to the contrary and conceptual designs are sufficient to support ecological modeling of the compensatory mitigation. In our February 5, 2010 teleconference, the District stated that we would work with the ICT (which includes LDNR) to obtain all of the information needed to develop detailed engineering plans, including geotechnical data relevant to site design, during PED. LDNR was referred to DEIS Appendix J for a description of the mitigation monitoring and contingency plan, which describes the role and responsibilities of the non-Federal sponsor, the Sabine-Neches Navigation District (SNND).

LDNR asserts that the proposed mitigation plan falls "at least 318 Average Annual Habitat Units (AAHUs) short of replacing the anticipated habitat losses to Louisiana" and that additional mitigation will have to be performed in Louisiana to offset this deficit. The District maintains that the proposed mitigation plan would more than compensate for all impacts of the proposed SNWW CIP. Benefits of the BU measures are being used to offset impacts in both Texas and Louisiana. DEIS Table 5.1-2 provides a summary accounting of BU benefits and compensatory mitigation for the proposed project. In Louisiana, the benefits of BU measures offset the loss of 210 average annual habitat units (AAHUs) to private lands along the coast at Louisiana Point, and the loss of 340 AAHUs to Federal land in the Sabine National Wildlife Refuge. Although the net impact of the project as a whole after application of all BU benefits (including significant other BU benefits in Texas) is the loss of 843 AAHUs, the proposed mitigation plan would provide 1,181 AAHUs in order to fully and separately compensate for the loss of 1,499 AAHUs to non-Federal lands in Louisiana. Exclusion of the Federal lands (i.e. the Sabine National Wildlife Refuge) is based upon the definition of "coastal zone" in the Coastal Zone Management Act of 1972, as amended. "Excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents (16 U.S.C. § 1453)." Furthermore, the Louisiana marsh mitigation measures would compensate for the predicted loss of 691 acres in Louisiana over 50 years by the restoration of 2,783 acres of emergent marsh, the improvement of 957 acres of shallow water habitat and the nourishment of 4,355 acres of existing marsh. Since the marsh restoration is several times greater than the predicted marsh loss, there would be no net less of wetlands.

LDNR also questions the benefits of the Gulf Shore BU feature at Louisiana Point, and asserts that additional mitigation in Louisiana will be required unless acceptable technical justification of the projected benefits is provided. The benefits of the BU feature in Louisiana were established by WVA modeling accomplished by the ICT, of which LDWF and LNDR were a part. The technical justification presented in DEIS Appendix C, Section 8.3.1.2 and WVA modeling were reviewed and accepted by the ICT. The monitoring plan (DEIS Appendix J) would determine if benefits are being reached as predicted.

Pipelines

All pipelines in project construction areas would be identified during PED. Plans for pipeline relocations would also be developed at that time. Costs of pipeline relocations have been included in the economic analysis of potential project benefits. Direct and indirect economic benefits of the proposed deepening will accrue to all users of the SNWW, including the energy industries, and to the regional economy in Louisiana as established by an independent economic analysis (Martin Associates, 2006, Economic Impacts of the Sabine-Neches Waterway and Economic Benefits of Maintenance Dredging of the Waterway). The District's economic analysis presented in FR Section V.F establishes that there would be a net economic benefit to the country from the proposed project. Minimal impacts to Louisiana industries are anticipated because construction would work around pipeline relocations as needed to accommodate all parties for a safe, effective and minimally disruptive working plan.

Attachment "Office of Coastal Protection and Restoration Master Plan Consistency Comments on Tentatively Recommended Plan for Sabine-Neches Waterway Channel Improvement Project, March 11, 2010.

Many of the comments in this attachment repeat or expand on bulleted comments in the letter. Responses below address comments that were not already addressed by responses to LDNR-OCM comments above.

Master Plan Objective #1
LDNR states that OCPR technical staff have serious concerns about the adequacy of the storm surge modeling of potential impacts to the Louisiana portion of the study area. The storm surge sensitivity analysis of two "worst case" storms ((Wamsley, Cialone and McAlpin, 2010, Surge Sensitivity Analysis for Sabine Neches Water Navigation Project, ERDC-CHL) was provided to LDNR by email on March 2, 2010. The analysis clearly demonstrates that the proposed project would have no impacts in Louisiana, so there is no need to perform the full scale ADCIRC/STWAVE modeling requested by LDNR. This modeling would be needed to fully evaluate impacts, if impacts had been identified. Since none were identified using a worst-case analysis, further modeling is not justified. The sensitivity analysis clearly demonstrates that the proposed SNWW CIP would not contribute to economic losses in Louisiana from storm based flooding to residential, public, industrial and commercial infrastructure, and thus complies with Master Plan Objective # 1.

Master Plan Objective #3
The majority of the LDNR comments under this objective are covered by District responses to the OCM comments. However, the OCPR comment also contains a number of specific questions and assertions regarding the HS salinity modeling, demands for additional salinity modeling, and a demand that the feasibility study include language "indicating that additional adverse salinity impacts to wetlands anticipated as a result of that additional salinity modeling will be fully mitigated at project cost." The District maintains that the HS modeling (Brown and Stokes, 2009) is technically and scientifically sound and that salinity impacts have been adequately addressed by the DEIS. The District would be happy to arrange for ERDC-CHL to present and discuss details of the modeling effort with your staff at your convenience. The HS model has undergone several technical reviews (by the ICT, the US Army Corps of Engineers Center of Deep Draft Navigation, and an independent peer review by outside academics) and we are confident that it is a technically sound tool for the evaluation of project impacts. With the proper execution of the proposed mitigation plan and BU features, the proposed SNWW CIP would not conflict with Objective #3: "provide habitats suitable to support an array of commercial and recreational activities coast-wide."

- LDNR asks that USACE provide written assurance that the final mitigation project plans and designs will fully offset project impacts in Louisiana's coastal wetlands. Additional assurance should not be necessary, as the FEIS and Record of Decision will obligate the

District and non-Federal sponsor to provide the compensatory mitigation described in these documents.

- One of LDNR's assertions relates to the previous HS modeling report (Brown et al., 2006) in which calibration and verification differences were reconciled by "introducing salinity." These problems were resolved by the revised HS modeling (Brown and Stokes, 2009). The LDNR claim that they were not given access to the latest HS modeling report is incorrect. LDNR did not request access to the report and a final version of this report was not available until late February, 2010. A copy of this report is provided with this letter.
- The LDNR comments question issues such as model calibration and verification, the duration and extent of data collection, and the treatment of marshes in the model. ERDC employed a state-of-the-art model to evaluate potential salinity impacts, and the technical adequacy of the HS modeling has been sustained by ATR and IEPR.
- LDNR asserts that "most of the marsh in Louisiana was not modeled." All of affected marsh in Louisiana was modeled, and the ICT (including LDNR representatives) were involved in determining what areas were modeled.
- LDNR asserts that the HS Modeling did not include the actual dredging depth (48 ft plus 2 ft advance maintenance and 2 ft allowable overdepth). This assertion is incorrect. The full 52 ft of potential dredging depth is included in the modeling
- The LDNR asserts that inclusion of predictions of relative sea level rise (RSLR) conditions "tend to muddy the waters" regarding estimated project impacts. Inclusion of RSLR is required to appropriately determine future without project conditions, a requirement of the US Army Corps of Engineers planning process.
- LDNR asserts that Pool 3 in the SNWR must be included in the HS model because breaches to the containment levee caused by Hurricane Ike would result in impacts from the proposed project. In a recent communication with the SNWR and US Fish and Wildlife Service (USFWS) personnel, that agency reports that the only hurricane-caused breach, a 6 to 7 foot opening in the SE corner of Pool 3, was repaired 3 to 4 months ago by an oil company doing work on the SNWR. Two 6-foot wide bays on each of two 14-bay variable crest weir water control structures located in the northwest and eastern containment levees of the Pool are currently left open for fisherman access and rainwater discharge. Salt water intrusion at these locations is not an issue because most of the water flow is discharging out of the Pool and because of the bay's small size (6 feet wide). It is possible for tidal surges from tropical storms or hurricanes to enter the Pool, but on average tides, water can only currently enter via the two 6-foot wide bays per water control structure. These openings are not sufficient to cause salt water intrusion problems in the Pool. There are no current plans for the USFWS to maintain or raise the Pool levees. They have been inspected and future maintenance noted but, to the knowledge of the SNWR manager, the levee maintenance has not been funded.

  The major salt water intrusion route to the Pool is from Calcasieu Lake to the east. This is not an issue because the southeast gap has been repaired and the fisherman boat bays are not significant in size (2, 6-foot wide bays). The projected salinity increases from the

SNWW CIP would not be a threat to increasing salinities from the west into the Pool because of its hydrologic isolation. Pool 3 was originally eliminated from the Sabine-Neches project area because it was, and remains, hydrologically isolated from the west via the Pool levees even though it contains two water control structures operated as weirs. The model predicted that net salinity increase caused by the Sabine-Neches project in the hydrologic units surrounding the Pool would be from 0.5 ppt to 1.0 ppt (Southeast Sabine = 0.5 ppt, Southwest Gum Cove = 0.9 ppt, Sabine Lake Ridges brackish marsh = 0.6 ppt, East Johnsons Bayou = 1.0 ppt). These salinity increases would not be likely to cause saltwater intrusion in the Pool under the current scenario of intact levees with 2, 6-foot wide bays opened at each of 2 water control structures. Therefore, Pool 3 remains hydrologically isolated from the Sabine-Neches influence area. Furthermore, USFWS believes that re-doing the Sabine-Neches hydrologic model for this reason is not warranted.

Master Plan Recommendations

The exact location of the proposed borrow trench in Sabine Lake would be determined during PED by the District in consultation with the ICT. It would be sited so as to avoid increasing erosion to the shoreline, and therefore would not result in breaches to the Chenier Plain's bay and lake shorelines. The need for wave climate modeling to support design considerations would be determined in consultation with the ICT during PED.

The proposed SNWW CIP would not adversely affect "spoil banks" along the GIWW or the freshwater resources protected by them. Geotechnical investigations during PED would obtain all information needed to evaluate the stability of the emergent GIWW shoreline during proposed borrow activities. If an adverse effect is identified, the borrow activity would be modified to avoid those impacts. Similarly, geotechnical information would be obtained to support the detailed design of the "salinity plug" in the GIWW near the Sabine River.

In conclusion, I hope this additional information will be helpful in resolving your concerns regarding the proposed SNWW CIP and the studies report in the DEIS. The DEIS has provided sufficient information, including numerous scientific analyses and numerical modeling studies, to demonstrate that the proposed DEIS complies with the National Environmental Policy Act and that the proposed SNWW CIP is in compliance, to the maximum extent practicable, with the Coastal Zone Management Act, and other applicable laws and regulations. Several other state and federal agencies have found that the DEIS provides sufficient information for their reviews. The USFWS (letter dated February 5, 2010), National Marine Fisheries Service (letter dated March 8, 2010), Texas Parks and Wildlife Department (letter dated March 11, 2010), and the Environmental Protection Agency (letter dated February 18, 2000) have expressed no outstanding concerns with the proposed project.

If, after review of the information provided herein, your agency still has concerns, I request that you explain how the proposed activity would be inconsistent with the specific enforceable policies (including citations) of your coastal management program, and provide

alternatives, which if adopted would allow the proposed SNWW CIP to proceed in a manner consistent to the maximum extent practicable with the cited enforceable policies. I would like to reiterate that Galveston District has been working through the ICT process with LDNR and 12 other state and Federal agencies for 10 years to perform the appropriate scientific studies and modeling needed to ensure that the proposed project avoids and minimizes environmental impacts to the greatest extent practicable. We stand ready to continue working with ICT during the PED phase to resolve your concerns and develop detailed designs for the Louisiana mitigation measures and BU feature. Please do not hesitate to contact Ms. Janelle Stokes at 409/766-3039 should you need further assistance.

Sincerely,

Arthur Janecka
Deputy District Engineer,
for Project Management

Enclosure
Report

CF:
David Frugé, OCRP
Rickey Broulliet, OCRP
Ismail Merhi, OCRP
Jeff Harris, OCM
Darryl Clark, USFWS
Rick Hartman, NMFS
Kyle Balkum, LDWF
Dave Butler, LDWF
Myles Hebert, Cameron Parish

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

REPLY TO
ATTENTION OF
Environmental Section

April 26, 2010

Mr. Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division
Louisiana Department of Natural Resources
Office of Coastal Management
P.O. Box 44487
Baton Rouge, Louisiana 70804-4487

Dear Mr. DuCote:

Reference your letter dated March 31, 2010 to Mr. Dolan Dunn of my staff. The letter discusses the Louisiana Coastal Resource Program (LCRP) consistency review of the U.S. Army Corps of Engineers, Galveston District (the District) consistency determination for the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). The Louisiana Department of Natural Resources, Office of Coastal Management (LDNR-OCM) found that the proposed SNWW CIP is conditionally consistent with the LCRP. The finding requires that USACE submit an additional consistency determination no later than the time at which draft contract plans and specifications are circulated for internal District review.

A requirement of the conditional consistency is the submission of additional detailed information on topics that "would include, but not be limited to, the topics of storm surge, bar channel deepening, salinity, borrow from Sabine Lake, mitigation plans and adequacy, and pipeline relocation." The District has gone to great lengths to coordinate the proposed project and supporting environmental studies addressing these issues with LDNR, as demonstrated by nearly ten years of analysis and coordination with LDNR through the SNWW Interagency Coordination Team. Through this coordination process we have successfully resolved numerous issues raised by the State of Louisiana, State of Texas, and Federal agencies that participated in the review of the project.

The District has evaluated the proposed SNWW CIP for consistency with the LCRP, and has concluded that the Recommended Plan is consistent to the maximum extent practicable with the enforceable policies of Louisiana's coastal management program. Conditional consistency as proposed in your letter is not acceptable, and you

are hereby notified that, in compliance with 15 CFR 930.43 (d) (2), this agency finds that the proposed action is consistent to the maximum extent practicable with the enforceable policies of the Louisiana program, and we will proceed with the project.

Sincerely,

David C. Weston
Colonel, Corps of Engineers
District Commander

Copies Furnished:
David Frugé, LDNR-OCPR
Jeff Harris, LDNR-OCM
Randall Reese, SNND
Hubert Oxford, III, SNND

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

5 February 2010

USACE – Galveston District
Attn: Ms. Janelle Stokes
P. O. Box 1229
Galveston, TX 77553

RE: **U. S. Army Corps of Engineers, Galveston District**
Notice of Public Meeting of the Draft Environmental Impact Statement (DEIS) for Sabine-Neches Waterway Proposed Channel Improvement Project, Southeast Texas and Southwest Louisiana

Dear Ms. Stokes:

This office has received your December 19, 2009, letter stating that the referenced Draft report was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, Section 102(2)(c) as amended. This document is presently under public review, with written comments to be postmarked by February 10, 2010. This Department would like to request to extend the comment period an additional 90 days to May 10, 2010, in order for this Office to fully evaluate the project and all appurtenant documentation. It is a large body of information and we are trying to be very diligent and thorough in our review. We are particularly concerned about modeling for storm surges, and salinity, the proposed mitigation for unavoidable impacts to wetland habitats, and the potential impacts to extant energy infrastructure and any potential for disruption of services/delivery of product that Louisiana's industries rely on. A more detailed, though not necessarily complete, list of areas of concern is attached.

Please let us know as early as possible if such a time extension for our comments meets with your approval.

If you have any questions please contact me at 225.342.5052 or Gregory.ducote@la.gov.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

Post Office Box 44487 • Baton Rouge, Louisiana 70804-4487
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Storm Surge:
- Effects of the deeper shipping channel, deeper GIWW, and borrow area in Sabine Lake may be significant and have not been appropriately modeled.
- Upland confined disposal sites on the Texas side of the project may create a barrier to storm surge, redirecting it to Louisiana.
- Offshore disposal sites from the bar channel dredging may create partial barriers to storm currents, potentially increasing set-up on Louisiana shores.

Bar Channel deepening:
- Modeling of potential impacts on wave climate and resulting shoreline impact must be performed.

Salinity:
- Modeling efforts are still under review by staff.
- Existing data from CRMS stations evidently was not used in modeling.
- Input parameters may not have been optimal.

Borrow Site in Sabine Lake:
- Justify the selected floatation access channel route. What alternatives were evaluated?
- Describe the disposal of material removed from the access channel route. Were impacts (e.g., SAVs) evaluated & mitigated?
- Mitigation for SAVs and oyster seed ground impacts is required by LDWF. These must be successfully addressed.
- Effects of excavation on wave climate and potential shoreline erosion should be evaluated.
- Geotechnical information on borrow quality should be collected and evaluated.
- Royalty payments and license issues over sediment resources must be resolved with LDWF.

Mitigation:
- Disposal site design must be presented.
- Geotechnical data for disposal site design must be collected and evaluated.
- Mitigation project lifetime maintenance and repair must be addressed. Who will perform? Can the Local Sponsor (TX) do such work in Louisiana?

GIWW deepening for borrow:
- Geotechnical data must be collected and analyzed for sediment suitability.
- Geotechnical data must be collected and analyzed for slope stability.
- Shoreline stabilization plans must be proposed.
- The design and analysis of the proposed salt water plug must be presented.

Pipelines:
- Plats showing all pipelines affected by the deepening of the navigation channel, GIWW, floatation access channel and borrow site must be provided.
- Discussion of impacts to this energy infrastructure and plan for addressing same
- Impacts to Louisiana industries must be fully evaluated and minimized.

Stokes, Janelle S SWG

From: Brian Marcks [Brian.Marcks@LA.GOV]
Sent: Thursday, February 04, 2010 9:38 AM
To: Stokes, Janelle S SWG
Cc: Jeff Harris
Subject: FW: C20090667 COE- GALV

Attachments: Document.pdf

Document.pdf
(615 KB)

Janelle,

Attached please find the LDWF comment letter on the DEIS for the Sabine-Neches Waterway Improvement Channel Project. Our agency has a Memorandum of Understanding with the LDWF whereby this agency requires that the applicant agree to the specifications included in their official comment letter to us to obtain consistency concurrence with our agency on a given project. Please provide information that you will comply with these LDWF specifications, revise the project to meet these specifications, or work with LDWF to resolve any differences you may have with them that are agreeable to LDWF. LDWF normally informs us when they are in agreement with such resolutions of any differences you may have.

Brian Marcks
Consistency Analyst
LDNR/OCM

-----Original Message-----
From: CMDUSER [mailto:CMDUSER@dnr.state.la.us]
Sent: Thursday, February 04, 2010 9:24 AM
To: Brian Marcks
Subject: C20090667 COE- GALV

Please open the attached document. This document was digitally sent to you using an HP Digital Sending device.

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BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE & FISHERIES

ROBERT J. BARHAM
SECRETARY

January 29, 2010

Gregory J. Ducote, Administrator
Louisiana Department of Natural Resources
Coastal Management Division
P.O. Box 44487
Baton Rouge, LA 70804-4487

RE: *Consistency Number: C20090667*
Applicant: Corps of Engineers - Galveston District
Notice Date: December 28, 2009

Dear Mr. Ducote:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the Consistency transmittal and preliminary Draft Environmental Impact Statement (EIS) for the Sabine-Neches Waterway Channel Improvement Project. LDWF has also been an active participant on the project Interagency Coordination Team since 2005.

At this time, LDWF has identified several issues that require further consideration by the natural resource and regulatory agencies. These outstanding issues are identified and described in the attached letter, dated October 23, 2009, submitted to Ms. Janelle Stokes.

LDWF requests that you accept this letter and the attached letter as our comments on the proposed project. We believe that each issue shall require thorough consideration and be individually and adequately addressed in the EIS.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact LDWF Permits Coordinator Dave Butler at 225-763-3595 should you need further assistance.

Sincerely,

Jimmy L. Anthony
Assistant Secretary

Attachment

c: Kyle Balkum, LDWF
Chris Davis, LDWF
Heather Finley, LDWF
Mike Windham, LDWF

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 15, 2010

Ms. Janelle Stokes
Regional Environmental Specialist
United States Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553-1229

Re: General conformity concurrence for the Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

This letter provides general conformity concurrence for the proposed Sabine-Neches Waterway Channel Improvement project. The Texas Commission on Environmental Quality (TCEQ) reviewed the project in accordance with Title 40 Code of Federal Regulations Part 93, and Title 30 Texas Administrative Code (TAC) § 101.30 of the TCEQ general rules. The proposed project is located in the Beaumont-Port Arthur (BPA) area and is classified as moderate nonattainment for the 1997 ozone standard, and emissions are expected to be above the 100 tons per year *de minimis* threshold. Therefore, a general conformity analysis is required.

The TCEQ has determined, pursuant to 30 TAC §101.30(h)(1)(E)(i)(I), that emissions from the proposed project will not exceed the emissions from the applicable state implementation plan, the BPA Rate-of-Progress adopted by the TCEQ Commission on October 27, 2004, and approved by the United States Environmental Protection Agency on February 22, 2006. This general conformity determination is based upon information provided in a September 2009 Draft General Conformity Determination prepared for the U.S. Army Corps of Engineers (USACE).

In support of the ozone National Ambient Air Quality Standard, the TCEQ suggests the USACE adopt pollution prevention and/or reduction measures in conjunction with this and future projects, such as the following:

- encourage construction contractors to apply for Texas Emission Reduction Plan grants;
- establish bidding conditions that give preference to clean contractors;
- direct construction contractors to exercise air quality best management practices;
- direct contractors that will use tugboats during construction to use clean fuels;
- direct operators of the assist tugboats used in maneuvering dredge vessels to use clean fuels;
- select assist tugs based on lowest nitrogen oxides (NO_X) emissions instead of lowest price; or
- purchase and permanently retire surplus NO_X offsets prior to commencement of operations.

Thank you for providing the necessary information and staff assistance for our review. We would also appreciate update(s), as appropriate, as this project moves forward. I look forward to working with you in the future on any upcoming projects you may have that affect air quality in your district. If you require further assistance on this matter, please contact Mr. Koy Howard at (512) 239-2306 or kohoward@tceq.state.tx.us.

Sincerely,

David Brymer, Director
Air Quality Division

DB/KH/kb

cc: Ruben Velasquez, P.E., PBS&J

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 19, 2010

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

Re: Sabine-Neches Waterway Channel Improvement Project §401 Water Quality Certification

Dear Ms. Stokes:

This letter is in response to the United States Army Corps of Engineers – Galveston District (Corps) correspondence dated March 19, 2010, requesting §401 State Water Quality Certification and the Public Notice dated December 18, 2009, on the Sabine Neches Navigation District proposal to deepen and widen the Sabine-Neches Waterway (SNWW). The SNWW Channel Improvement Project (CIP) is located along the Texas and Louisiana border, in Jefferson and Orange counties in southeast Texas and Cameron Parish, Louisiana.

The Texas Commission on Environmental Quality (TCEQ) has reviewed the public notice and related application information provided by the Corps. On behalf of the Executive Director and based on our evaluation of the information contained in these documents, the TCEQ certifies that there is reasonable assurance that the project will be conducted in a way that will not violate Texas surface water quality standards.

The Sabine Neches Navigation District proposes to increase the authorized depth of the channel from 40 to 48 feet along the entire 64-mile-long existing channel and add a 13.2-mile extension to the offshore channels into the Gulf of Mexico. The purpose of the CIP is to improve the transportation efficiency of the SNWW's deep-draft navigation system and support industry at ports within the SNWW navigation channel system.

SNWW CIP proposed mitigation incorporates the Neches River and Gulf Shore Beneficial Use features of the Dredged Material Management Plan (DMMP) and all components of Best Buy Mitigation Plan 6, including emergent marsh restoration in two areas of Willow Bayou (totaling 607 acres) and three areas in the Black Bayou region (totaling 2,096 acres).

The TCEQ has reviewed this proposed action for consistency with the Texas Coastal Management Program (CMP) goals and policies in accordance with the regulations of the Coastal Coordination Council and has determined that the proposed action is consistent with the applicable CMP goals and policies.

This certification was reviewed for consistency with the CMP's development in critical areas policy {Title 31, Texas Administrative Code (TAC), Chapter (§) 501.23} and dredging and dredged material disposal and placement policy {31 TAC §501.25}. This certification complies with the CMP goals {31 TAC §501.12(1, 2, 3, 5)} applicable to these policies.

No review of property rights, location of property lines, nor the distinction between public and private ownership has been made, and this certification may not be used in any way with regard to questions of ownership.

If you require additional information or further assistance, please contact Mr. Robert Hansen, Water Quality Assessment Section, Water Quality Division (MC-150), at (512) 239-4583.

Sincerely,

Charles W. Maguire, Director
Water Quality Division
Texas Commission on Environmental Quality

CWM/RSH/sp

Attachment

cc: Mr. Ben Rhame, Secretary, Coastal Coordination Council, P.O. Box 12873, Austin, Texas 78711-2873

WORK DESCRIPTION: As described in the public notice dated December 18, 2009, and additional information provided by the Corps, dated March 19, 2010.

SPECIAL CONDITIONS: None

GENERAL: **This certification, issued pursuant to the requirements of Title 30, Texas Administrative Code, Chapter 279, is restricted to the work described in the December 18, 2009, Draft Environmental Impact Statement and Draft Feasibility Report.** This certification may be extended to any minor revision of the Environmental Impact Statement (EIS) when such change(s) would not result in an impact on water quality. The Texas Commission on Environmental Quality (TCEQ) reserves the right to require full joint public notice on a request for minor revision. The applicant is hereby placed on notice that any activity conducted pursuant to the EIS and COE project authorization which results in a violation of the state's surface water quality standards may result in an enforcement proceeding being initiated by the TCEQ or a successor agency.

STANDARD PROVISIONS: These following provisions attach to any permit or project authorization issued by the COE and shall be followed by the permittee or any employee, agent, contractor, or subcontractor of the permittee during any phase of work authorized by the COE.

1. The water quality of wetlands shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative, and Numerical Criteria.

2. The applicant shall not engage in any activity which will cause surface waters to be toxic to man, aquatic life, or terrestrial life.

3. Permittee shall employ measures to control spills of fuels, lubricants, or any other materials to prevent them from entering a watercourse. All spills shall be promptly reported to the TCEQ by calling the State of Texas Environmental Hotline at 1-800-832-8224.

4. Sanitary wastes shall be retained for disposal in some legal manner. Marinas and similar operations which harbor boats equipped with marine sanitation devices shall provide state/federal permitted treatment facilities or pump out facilities for ultimate transfer to a permitted treatment facility. Additionally, marinas shall display signs in appropriate locations advising boat owners that the discharge of sewage from a marine sanitation device to waters in the state is a violation of state and federal law.

5. Materials resulting from the destruction of existing structures shall be removed from the water or areas adjacent to the water and disposed of in some legal manner.

6. A discharge shall not cause substantial and persistent changes from ambient conditions of turbidity or color. The use of silt screens or other appropriate methods is encouraged to confine suspended particulates.

7. The placement of any material in a watercourse or wetlands shall be avoided and placed there only with the approval of the Corps when no other reasonable alternative is available. If work within a wetland is unavoidable, gouging or rutting of the substrate is prohibited. Heavy equipment shall be placed on mats to protect the substrate from gouging and rutting if necessary.

8. Dredged Material Placement: Dredged sediments shall be placed in such a manner as to prevent any sediment runoff onto any adjacent property not owned by the applicant. Liquid runoff from the disposal area shall be retained on-site or shall be filtered and returned to the watercourse from which the dredged materials were removed. Except for material placement authorized by this permit, sediments from the project shall be placed in such a manner as to prevent any sediment runoff into waters in the state, including wetlands.

9. If contaminated spoil that was not anticipated or provided for in the permit application is encountered during dredging, dredging operations shall be immediately terminated and the TCEQ shall be contacted by calling the State of Texas Environmental Hotline at 1-800-832-8224. Dredging activities shall not be resumed until authorized by the Commission.

10. Contaminated water, soil, or any other material shall not be allowed to enter a watercourse. Noncontaminated stormwater from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.

11. Storm water runoff from construction activities that result in a disturbance of one or more acres, or are a part of a common plan of development that will result in the disturbance of one or more acres, must be controlled and authorized under Texas Pollutant Discharge Elimination System (TPDES) general permit TXR150000. A copy of the general permit, application (notice of intent), and additional information is available at: http://www.tceq.state.tx.us/nav/permits/wq_construction.html or by contacting the TCEQ Storm Water & Pretreatment Team at (512) 239-4671.

12. Upon completion of earthwork operations, all temporary fills shall be removed from the watercourse/wetland, and areas disturbed during construction shall be seeded, riprapped, or given some other type of protection to minimize subsequent soil erosion. Any fill material shall be clean and of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters.

13. Disturbance to vegetation will be limited to only what is absolutely necessary. After construction, all disturbed areas will be revegetated to approximate the pre-disturbance native plant assemblage.

14. Where the control of weeds, insects, and other undesirable species is deemed necessary by the permittee, control methods which are nontoxic to aquatic life or human health shall be employed when the activity is located in or in close proximity to water, including wetlands.

15. Concentrations of taste and odor producing substances shall not interfere with the production of potable water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, result in offensive odors arising from the water, or otherwise interfere with reasonable use of the water in the state.

16. Surface water shall be essentially free of floating debris and suspended solids that are conducive to producing adverse responses in aquatic organisms, putrescible sludge deposits, or sediment layers which adversely affect benthic biota or any lawful uses.

17. Surface waters shall be essentially free of settleable solids conducive to changes in flow characteristics of stream channels or the untimely filling of reservoirs, lakes, and bays.

18. The work of the applicant shall be conducted such that surface waters are maintained in an aesthetically attractive condition and foaming or frothing of a persistent nature is avoided. Surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.

19. This certification shall not be deemed as fulfilling the applicant's/permittee's responsibility to obtain additional authorization/approval from other local, state, or federal regulatory agencies having special/specific authority to preserve and/or protect resources within the area where the work will occur.

BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

APR 21 2010

U.S. Army Corps of Engineers- Galveston District
CESWG-PE-RE
P.O. Box 1229
Galveston, TX 77553-1229

Attention: Janelle Stokes

RE: Water Quality Certification (WQC 100330-01/AI 104985/CER 20100001)
Sabine-Neches Waterway Channel Improvements Project
Cameron Parish

Dear Ms. Stokes:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to dredge waterbottoms and place spoil material for marine vessel access improvements, along Sabine Pass in southwestern Cameron Parish.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to the U.S. Army Corps of Engineers- Galveston District.

Sincerely,

Melvin C. Mitchell, Sr.
Administrator
Water Permits Division

MCM/jjp

Post Office Box 4313 • Baton Rouge, Louisiana 70821-4313 • Phone 225-219-3181 • Fax 225-219-3309
www.deq.louisiana.gov

Appendix A2

Endangered Species Act Correspondence

State of Louisiana

James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225) 765-2800

M.J. "Mike" Foster, Jr.
Governor

Name	Mr. Dave Munson
Company	PBS&J
Street Address	206 Wild Basin Road, Suite 300
City, State, Zip	Austin, Texas 78746
Project	Sabine-Neches Waterway Feasibility Study and EIS
Date	July 30, 2002
Invoice Number	02073001

Personnel of the Habitat Section of the Fur and Refuge Division have reviewed the preliminary data for the captioned project. In reviewing our database, many rare, threatened, or endangered species or critical habitats were found within the area of the captioned project that lies in Louisiana. I have attached tables containing the information for these element occurrence records, along with explanations of the data fields. Please refer to the LNHP data utilization agreement for restrictions regarding the use of these data. Element occurrence location information is given as point data and do not reflect the local extent of the occurrence. In addition, the precision of the location information may be limited. Please refer to the precision data field which defines the precision to which the element occurrence as described can be located on a topographic map. Due to the preliminary nature of the request, and the fact that no specific project details were given, the Louisiana Natural Heritage Program is unable to make specific comments concerning the project's impact on these species at this time. It will be necessary for you to contact us as your project progresses and specific project details are available, so that we may make the necessary comments in the future. In addition, please be aware that a manatee (Trichechus manatus) was observed in the Sabine River North of the I-10 Bridge in November of 1999. The manatee is listed as endangered on both the federal and state species lists. Your project area is in the Louisiana Department of Wildlife and Fisheries Sabine Island Wildlife Management Area (WMA). Please Contact the WMA Manager John Robinette at 318-491-2575 to coordinate activity. Your project area is in the USFWS Sabine National Wildlife Refuge. Please contact USFWS Wildlife Biologist Diane Borden-Billiot at 318-762-3816 to coordinate activity. Your project area is in the coastal zone. Contact the State of Louisiana Department of Natural Resources Coastal Management Division to determine if a coastal use permit is required. The Sabine Pass Lighthouse State Commemorative Area occurs in your project area. No other state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the

location in question. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here. If you have any questions or need additional information, please call Louisiana Natural Heritage Program Data Manger Jill Kelly at (225) 765-2643.

Sincerely,

Gary Lester, Coordinator
Natural Heritage Program

LOUISIANA NATURAL HERITAGE PROGRAM (LNHP)

DATA UTILIZATION AGREEMENT

We are pleased to provide you with information on the occurrence of threatened and endangered species. Do to the dynamic nature of the LNHP database and the sensitivity of some of the information however, some precautions are necessary in your use of the information.

Please sign and date below and return this document if you are in agreement with the conditions listed below for utilization of the LNHP database.

This agreement allows Dave Munson of PBS&J, 206 Wild Basin Road, Suite 300, Austin, Texas 78746 use of the LNHP records, at $20.00 per quad, for the Sabine-Neches Waterway Feasibility Study and EIS. The information supplied by the LNHP shall be used only for this project. As an employee of PBS&J, Dave Munson is authorized to sign this agreement.

PBS&J shall not use computer and hard copy files of LNHP data for any other projects, and PBS&J shall not release any copy of the LNHP data files to another party, without written consent of the LNHP Director.

All maps and graphs generated by PBS&J, using information provided by the LNHP shall reference in the legend the LNHP program as the source of the data. All text generated by PBS&J using information provided by the LNHP shall reference on the title or acknowledgement page the LNHP program as the source of the data, and the date the data were provided.

The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. The LNHP database represents a compilation of information extracted from published and unpublished literature, museums and herbaria, field surveys, personal communications, and other sources. Records for new occurrences of plants and animals are continuously being added to the database and other occurrence records may change as new information is gathered. For these reasons, PBS&J is authorized to use the data for a period of one year from the date the data are received. At that time, PBS&J shall delete all computerized files containing the LNHP data, or enter into another data utilization agreement with the LNHP.

The LNHP cannot provide a definitive statement on the presence, or absence, or condition of biological elements in any part of Louisiana. LNHP reports summarize the existing information known to the LNHP at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

The LNHP and the State of Louisiana shall not be liable for any damages or loss whatsoever, to any person or legal entity, or property resulting from the use of the data specified here. PBS&J and/or any person or legal entity which receives said information from PBS&J agrees to indemnify and hold harmless the LNHP and the State of Louisiana from and against any and all claims, demands and causes of action of any description in favor of any person for damage or loss whatsoever to persons, legal entities, or property arising from the use of the data specified herein and/or any person or legal entity which receives said information from PBS&J

Information provided by this database transfer may not be published without prior written approval of the LNHP, and the LNHP must be credited as an information source in these publications.

Gary Lester

Gary Lester
Director, Natural Heritage Program
Date: 7-31-02

Dave Munson

Dave Munson
PBS&J
Date: 8/7/02

Louisiana Natural Heritage Program
Biological Conservation Database Field Definitions

EOCODE – (Element Occurrence Code) Represents a unique code for each element in the database

LONG – Longitude of the centrum of the element occurrence. Element Occurrence data is given as point information for the centrum of the occurrence, at this time we can not supply information about the local extent of the occurrence.

LAT – Latitude of the centrum of the element occurrence. Element Occurrence data is given as point information for the centrum of the occurrence, at this time we can not supply information about the local extent of the occurrence.

PRECISION - Precision to which the element occurrence as described can be located on a topographic map.

S = Seconds (accuracy of locality mappable within a three-second radius)
M = Minute (within a one minute radius, approximately 2 km or 1.5 miles from centerpoint)
G = general (to quad or place name precision only, precision within about 8 km or 5 miles)

SNAME – (State Name) The appropriate element name recognized in the state using standard scientific binomial (or trinomial) nomenclature

SCOMNAME– (State Common Name) Common name of the element that is recognized at the state level

USESA – (United States Endangered Species Act) Appropriate standard abbreviation for the U.S. federal register category for the element as proposed or determined by the U.S. Fish and Wildlife Service or the National Oceanic and Atmospheric Administration (marine species)

GRANK– (Global Rank) The global element rank which best characterizes the relative rarity or endangerment of the element worldwide.

SRANK – (State Rank) The state element rank which best characterizes the relative rarity or endangerment of the element in the state.

LASTOBS – (Last Observation) Date the element occurrence was last observed extant at this site; not necessarily date site was last visited.

EXPLANATION OF RANKING CATEGORIES EMPLOYED BY NATURAL HERITAGE PROGRAMS NATIONWIDE

Each element is assigned a single global rank as well as a state rank for each state in which it occurs. Global ranking is done under the guidance of NatureServe, Arlington, VA. State ranks are assigned by each state's Natural Heritage Program, thus a rank for a particular element may vary considerably from state to state. Federal ranks are designated by the U.S. Fish & Wildlife Service under the provisions of the Endangered Species Act of 1973.

FEDERAL RANKS (USESA FIELD):

LE = Listed Endangered

LT = Listed Threatened

PE = Proposed endangered

PT = Proposed Threatened

C = Candidate

PDL = Proposed for delisting

E (S/A) or T (S/A) = Listed endangered or threatened because of similarity of appearance

XE = Essential experimental population

XN = Nonessential experimental population

No Rank = Usually indicates that the taxon does not have any federal status. However, because of potential lag time between publication in the Federal Register and entry in the central databases and state databases, some taxa may have a status which does not yet appear.

(Rank, Rank) = Combination values in parenthesis = The taxon itself is not named in the Federal Register as having U.S. ESA status; however, all of its infraspecific taxa (worldwide) do have official status. The statuses shown in parentheses indicate the statuses that apply to infraspecific taxa or populations within this taxon. *THE SPECIES IS CONSIDERED TO HAVE A COMBINATION STATUS IN LOUISIANA*

(PS) = partial status= Status in only a portion of the species' range. Typically indicated in a "full" species record where an infraspecific taxon or population has U.S. ESA status, but the entire species does not. *THE SPECIES DOES NOT HAVE A STATUS IN LOUISIANA*

(PS: Rank) = partial status= Status in only a portion of the species' range. The value of that status appears because the entity with status does not have an individual entry in Natureserve. *THE SPECIES MAY HAVE A STATUS IN LOUISIANA*

GLOBAL ELEMENT RANKS:

G1 = critically imperiled globally because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extinction

G2 = imperiled globally because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extinction throughout its range

G3 = either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range (21 to 100 known extant populations)

G4 = apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery (100 to 1000 known extant populations)

G5 = demonstrably secure globally, although it may be quite rare in parts of its range, especially at the periphery (1000+ known extant populations)

GH = of historical occurrence throughout its range; i.e., formerly part of the established biota, with the possibility that it may be rediscovered (e.g., Bachman's Warbler)

GU = possibly in peril range-wide, but status uncertain; need more information

G? = rank uncertain. Or a range (e.g., G3G5) delineates the limits of uncertainty

GQ = uncertain taxonomic status

GX = believed to be extinct throughout its range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered

T = subspecies or variety rank (e.g., G5T4 applies to a subspecies with a global species rank of G5, but with a subspecies rank of G4)

STATE ELEMENT RANKS:

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation

S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation

S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)

S4 = apparently secure in Louisiana with many occurrences (100 to 1000 known extant populations)

S5 = demonstrably secure in Louisiana (1000+ known extant populations)

(B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding)

SA = accidental in Louisiana, including species (usually birds or butterflies) recorded once or twice or only at great intervals hundreds or even thousands of miles outside their usual range

SH = of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting

SR = reported from Louisiana, but without conclusive evidence to accept or reject the report

SU = possibly in peril in Louisiana, but status uncertain; need more information

SX = believed to be extirpated from Louisiana

SZ = transient species in which no specific consistent area of occurrence is identifiable

LNHP Element Occurrence Data in or surrounding your project area on the Echo 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNKC10010*185*LA	0934142W	300743N	HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	(PS:LT,PDL)	G4	S2N,S3B	S	1999
AFCJC04010*014*LA	0934035W	301245N	CYCLEPTUS ELONGATUS	BLUE SUCKER		G3G4	S2S3	S	3/27/1996

LNHP Element Occurrence Data in or surrounding your project area on the Cameron Farms 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
CPC5000000*002*LA	0933350W	300415N	BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST			S4	S	-1977
PMCYP090Q0*001*LA	0933130W	300300N	ELEOCHARIS FALLAX	CREEPING SPIKE-RUSH		G4G5	S1?	M	4/6/1984

LNHP Element Occurrence Data in or surrounding your project area on the Black Lake 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNGE05010*013*LA	0932333W	300255N	AJAIA AJAJA	ROSEATE SPOONBILL		G5	S3	M	5/1/1989
ORKER00000*224*LA	0932333W	300255N	WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY				M	5/1/1989

LNHP Element Occurrence Data in or surrounding your project area on the West of Greens Bayou 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
CEA2000000*010*LA	0934510W	295715N	BRACKISH MARSH	BRACKISH MARSH			S3S4	S	-1977

LNHP Element Occurrence Data in or surrounding your project area on the Greens Bayou 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNGE05010*030*LA	0934436W	295707N	AJAIA AJAJA	ROSEATE SPOONBILL		G5	S3	S	5/28/1996
CTB2000000*004*LA	0934414W	295652N	COASTAL PRAIRIE	COASTAL PRAIRIE		G2Q	S1	S	-1986
CTB2000000*021*LA	0934234W	295702N	COASTAL PRAIRIE	COASTAL PRAIRIE		G2Q	S1	S	5/6/1997
ORKER00000*378*LA	0934436W	295707N	WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY				S	3/26/1996

LNHP Element Occurrence Data in or surrounding your project area on the F-R Ranch 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNKD02020*002*LA	0933108W	295857N	CARACARA CHERIWAY	CRESTED CARACARA	(PS:LT)	G5	S1	M	4/2/1987
CPA1000000*015*LA	0933554W	295911N	FRESHWATER MARSH	FRESHWATER MARSH			S1S2	S	4/2/1987
ORKER00000*075*LA	0933300W	295900N	WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY				M	4/26/1990

LNHP Element Occurrence Data in or surrounding your project area on the Port Arthur South 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
PMPOA46010*001*LA	0935334W	294800N	MONANTHOCHLOE LITTORALIS	SALTFLAT-GRASS		G4G5	S1	M	7/14/1984

Element Occurrence Data in or surrounding your project area on the West of Johnsons Bayou 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
CEA2000000*011*LA	0934727W	294703N	BRACKISH MARSH	BRACKISH MARSH			S3S4	S	-1977
CTC1000000*001*LA	0933830W	294506N	COASTAL LIVE OAK-HACKBERRY FOREST	COASTAL LIVE OAK-HACKBERRY FOREST		G1G2Q	S1S2	S	1984-FALL

LNHP Element Occurrence Data in or surrounding your project area on the Johnsons Bayou 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
PDAST7Z020*001*LA	0933830W	294603N	RATIBIDA PEDUNCULARIS	MEXICAN HAT		G4G5	S2S3	S	9/7/1984
PDBOR0L070*001*LA	0933836W	294506N	LITHOSPERMUM INCISUM	NARROW-LEAVED PUCCOON		G5	S1	G	4/8/1966
PMPOA6B010*007*LA	0933907W	294503N	UNIOLA PANICULATA	SEA OATS		G5	S2	M	9/4/1974
CTC1000000*001*LA	0933830W	294506N	COASTAL LIVE OAK-HACKBERRY FOREST	COASTAL LIVE OAK-HACKBERRY FOREST		G1G2Q	S1S2	S	1984-FALL
PDFAB1A0C0*004*LA	0933907W	294502N	DALEA EMARGINATA	WEDGE-LEAF PRAIRIE-CLOVER		G5	S2	M	5/8/1982

Element Occurrence Data in or surrounding your project area on the Texas Point 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNNB03070*011*LA	0934644W	294338N	CHARADRIUS MELODUS	PIPING PLOVER	(LE,LT)	G3	S2N	S	2/19/1988

Element Occurrence Data in or surrounding your project area on the Smith Bayou 7.5 minute Quadrangle Map

Eocode	Long	Lat	Sname	Scomname	Usesa	Grank	Srank	Precision	Lastobs
ABNNB03030*002*LA	0934024W	294452N	CHARADRIUS ALEXANDRINUS	SNOWY PLOVER	(PS:LT)	G4	S1B,S2N	S	2/9/1991
ABNNB03040*002*LA	0934442W	294405N	CHARADRIUS WILSONIA	WILSON'S PLOVER		G5	S1S3B,S3N	M	4/27/1986
ABNNB03070*002*LA	0934024W	294452N	CHARADRIUS MELODUS	PIPING PLOVER	(LE,LT)	G3	S2N	S	2/9/1991
CTB1000000*013*LA	0933959W	294450N	COASTAL DUNE GRASSLAND	COASTAL DUNE GRASSLAND			S1S2	S	5/2/1989
CTC1000000*001*LA	0933830W	294506N	COASTAL LIVE OAK-HACKBERRY FOREST	COASTAL LIVE OAK-HACKBERRY FOREST		G1G2Q	S1S2	S	1984-FALL
PDAMA040N0*002*LA	0933953W	294457N	AMARANTHUS GREGGII	GREGG'S AMARANTH		G4?	S2S3	M	6/30/1984
PDAST7Z020*006*LA	0933959W	294457N	RATIBIDA PEDUNCULARIS	MEXICAN HAT		G4G5	S2S3	S	5/12/1987
PDFAB0F630*008*LA	0934321W	294424N	ASTRAGALUS NUTTALLIANUS	A MILK-VETCH		G5	S2S3	S	5/2/1989
PDFAB1A0C0*004*LA	0933907W	294502N	DALEA EMARGINATA	WEDGE-LEAF PRAIRIE-CLOVER		G5	S2	M	5/8/1982
PDFAB1A0C0*006*LA	0933959W	294457N	DALEA EMARGINATA	WEDGE-LEAF PRAIRIE-CLOVER		G5	S2	S	5/12/1987
PDFAB1A0C0*007*LA	0934321W	294424N	DALEA EMARGINATA	WEDGE-LEAF PRAIRIE-CLOVER		G5	S2	S	5/2/1989
PDFAB5L0K0*007*LA	0934321W	294424N	PEDIOMELUM RHOMBIFOLIUM	ROUNDLEAF SCARF-PEA		G5	S2S3	S	5/2/1989

PBS&J

An employee-owned company

September 14, 2004

National Marine Fisheries Service
Southeast Regional Office
Mr. Andreas Mager
9721 Executive Center Drive north
Saint Petersburg, Florida 33702-2449

Dear Mr. Mager,

The U.S. Army Corps of Engineers, with the Jefferson County Navigation District (JCND) as the local sponsor, has proposed a project to widen and deepen the Sabine-Neches Waterway. The Sabine-Neches Waterway (SNWW) is located in Jefferson and Orange counties in Texas and borders Cameron and Calcasieu Parishes in southwest Louisiana. The project area includes the SNWW from the Gulf of Mexico through the jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont, including an additional 17 miles of new channel extending beyond the end of the existing channel into the Gulf of Mexico. The Sabine Channel, that extends from Sabine Lake to the Port of Orange is not being considered for channel modification.

The study area is larger than the project area due to potential environmental affects and has been developed through consultation with the project Interagency Coordination Team (ICT). The study area is illustrated on the attached map.

PBS&J is currently developing the Biological Assessment (BA) for the proposed project and thereby is requesting your office provide any information regarding federally protected species within the study area. Your comments will be an important consideration in the development of the BA and in the assessment of potential project impacts.

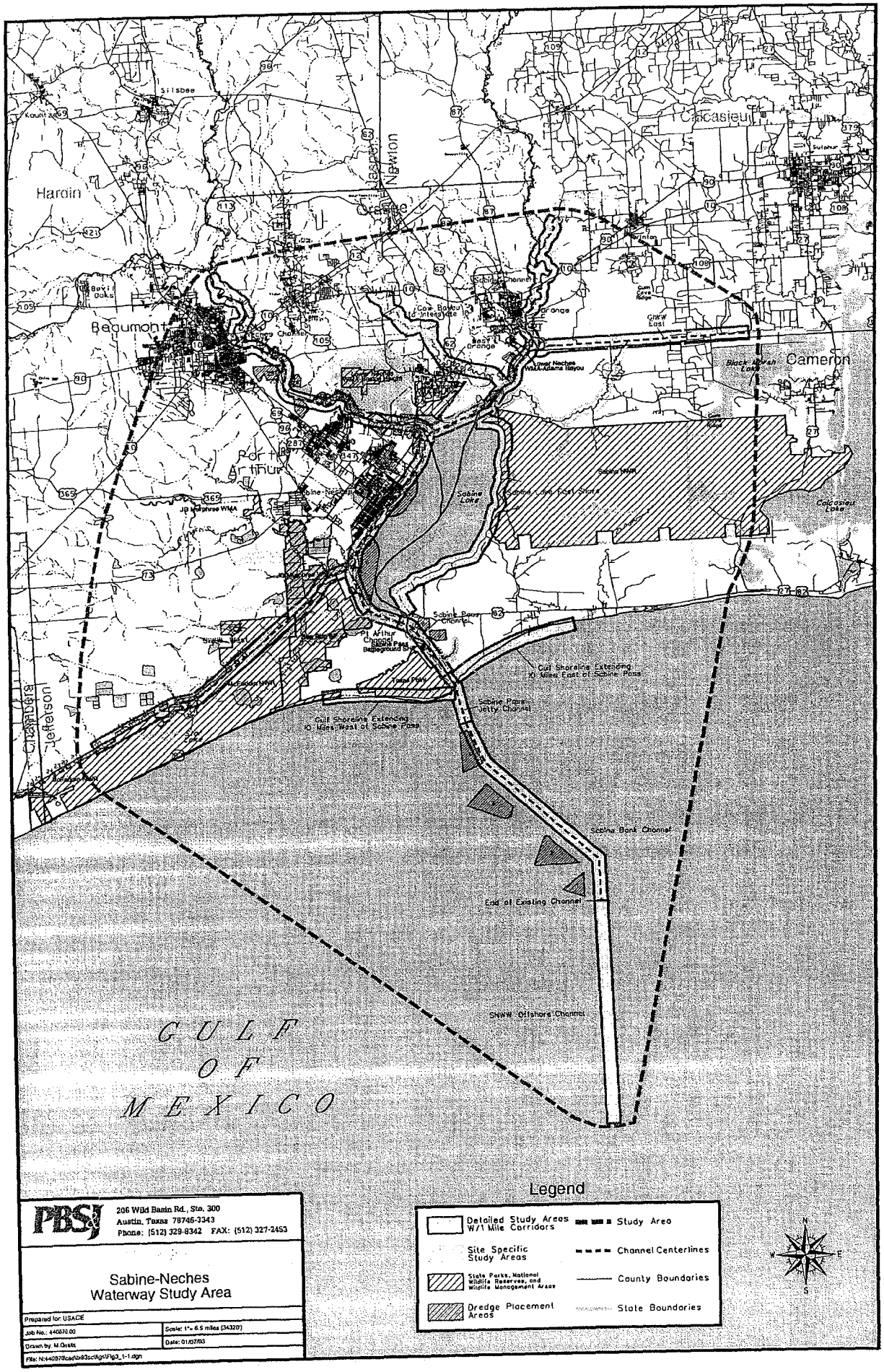
PBS&J looks forward to receiving information from your office and appreciates your time and effort required in responding to this request. Please contact Mike Horvath or me at 512 327-6840 if you have any questions or require additional study area information.

Sincerely,

Martin Arhelger
Project Manager
Vice President

attachment

6504 Bridge Point Parkway • Suite 200 • Austin, Texas 78730 • Telephone: 512.327.6840 • Fax: 512.327.2453 • www.pbsj.com



PBSJ
206 Wild Basin Rd., Ste. 300
Austin, Texas 78746-3343
Phone: (512) 329-8342 FAX: (512) 327-2453

Sabine-Neches
Waterway Study Area

Prepared for: USACE	
Job No.: 440870.00	Scale: 1"= 6.5 miles (34320')
Drawn by: M.Oretts	Date: 01/07/03
File: N:\440870\cad\b83sc\figs\Fig3_1-1.dgn	

PBS&J

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September 14, 2004

Mr. Darryl Clark
U.S. Fish and Wildlife Service
646 Cajundome Blvd.
Suite 4000
Lafayette, Louisiana 70506

Dear ~~Mr. Clark~~ Darryl,

The U.S. Army Corps of Engineers, with the Jefferson County Navigation District (JCND) as the local sponsor, has proposed a project to widen and deepen the Sabine-Neches Waterway. The Sabine-Neches Waterway (SNWW) is located in Jefferson and Orange counties in Texas and borders Cameron and Calcasieu Parishes in southwest Louisiana. The project area includes the SNWW from the Gulf of Mexico through the jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont, including an additional 17 miles of new channel extending beyond the end of the existing channel into the Gulf of Mexico. The Sabine Channel, that extends from Sabine Lake to the Port of Orange is not being considered for channel modification.

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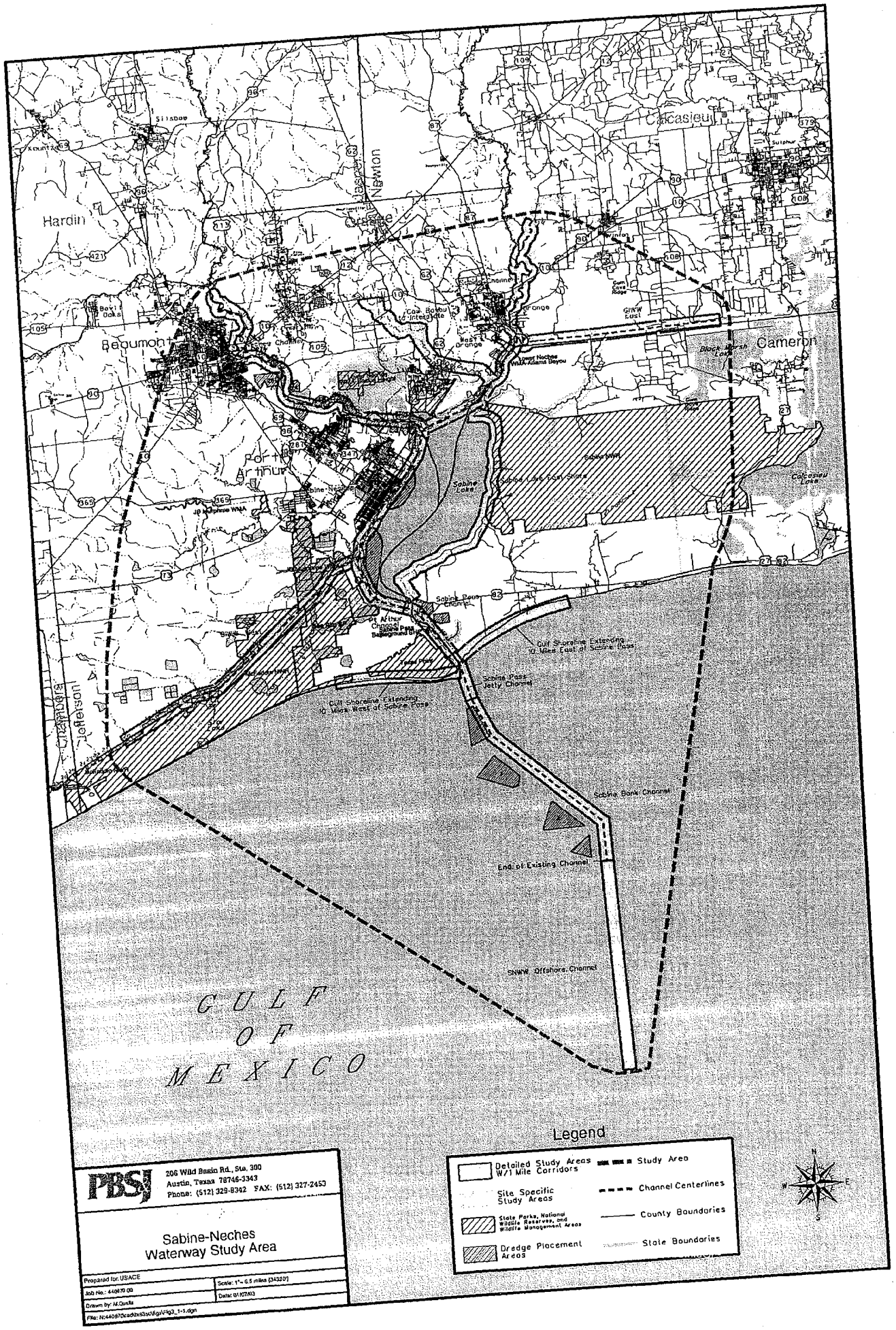
PBS&J looks forward to receiving information from your office and appreciates your time and effort required in responding to this request. Please contact Mike Horvath or me at 512 327-6840 if you have any questions or require additional study area information.

Sincerely,

Martin Arhelger
Project Manager
Vice President

attachment

6504 Bridge Point Parkway • Suite 200 • Austin, Texas 78730 • Telephone: 512.327.6840 • Fax: 512.327.2453 • www.pbsj.com


Hardin
Newton
Jasper
Orange
Calcasieu
Cameron
Beaumont
Port Arthur
Jefferson
Chambers
Sabine Lake
Calcasieu Lake
Sabine Pass Channel
Sabine Bank Channel
End of Existing Channel
SNWW Offshore Channel
Gulf Shoreline Extending 10 Miles East of Sabine Pass
Gulf Shoreline Extending 10 Miles West of Sabine Pass
GULF OF MEXICO
Legend
Detailed Study Areas W/1 Mile Corridors
Study Area
Site Specific Study Areas
Channel Centerlines
State Parks, National Wildlife Reserves, and Wildlife Management Areas
County Boundaries
Dredge Placement Areas
State Boundaries
PBSJ
206 Wild Basin Rd., Ste. 300
Austin, Texas 78746-3343
Phone: (512) 329-8342 FAX: (512) 327-2453
Sabine-Neches Waterway Study Area
Prepared for: USACE
Job No.: 440870.00
Scale: 1" = 6.5 miles (34320)
Drawn by: M.Qualls
Date: 01/07/03
File: N:\440870\cadd\ss3\sv0\fig\Fig2_1-1.dgn

PBS&J

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September 14, 2004

Ms. Kathy Boydston
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Dear Ms. Boydston,

The U.S. Army Corps of Engineers, with the Jefferson County Navigation District (JCND) as the local sponsor, has proposed a project to widen and deepen the Sabine-Neches Waterway. The Sabine-Neches Waterway (SNWW) is located in Jefferson and Orange counties in Texas and borders Cameron and Calcasieu Parishes in southwest Louisiana. The project area includes the SNWW from the Gulf of Mexico through the jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont, including an additional 17 miles of new channel extending beyond the end of the existing channel into the Gulf of Mexico. The Sabine Channel, that extends from Sabine Lake to the Port of Orange is not being considered for channel modification.

The study area is larger than the project area due to potential environmental affects and has been developed through consultation with the project Interagency Coordination Team (ICT). The study area is illustrated on the attached map.

PBS&J is currently developing the Biological Assessment (BA) for the proposed project and thereby is requesting your office provide any information regarding state protected species within the study area. Your comments will be an important consideration in the development of the BA and in the assessment of potential project impacts.

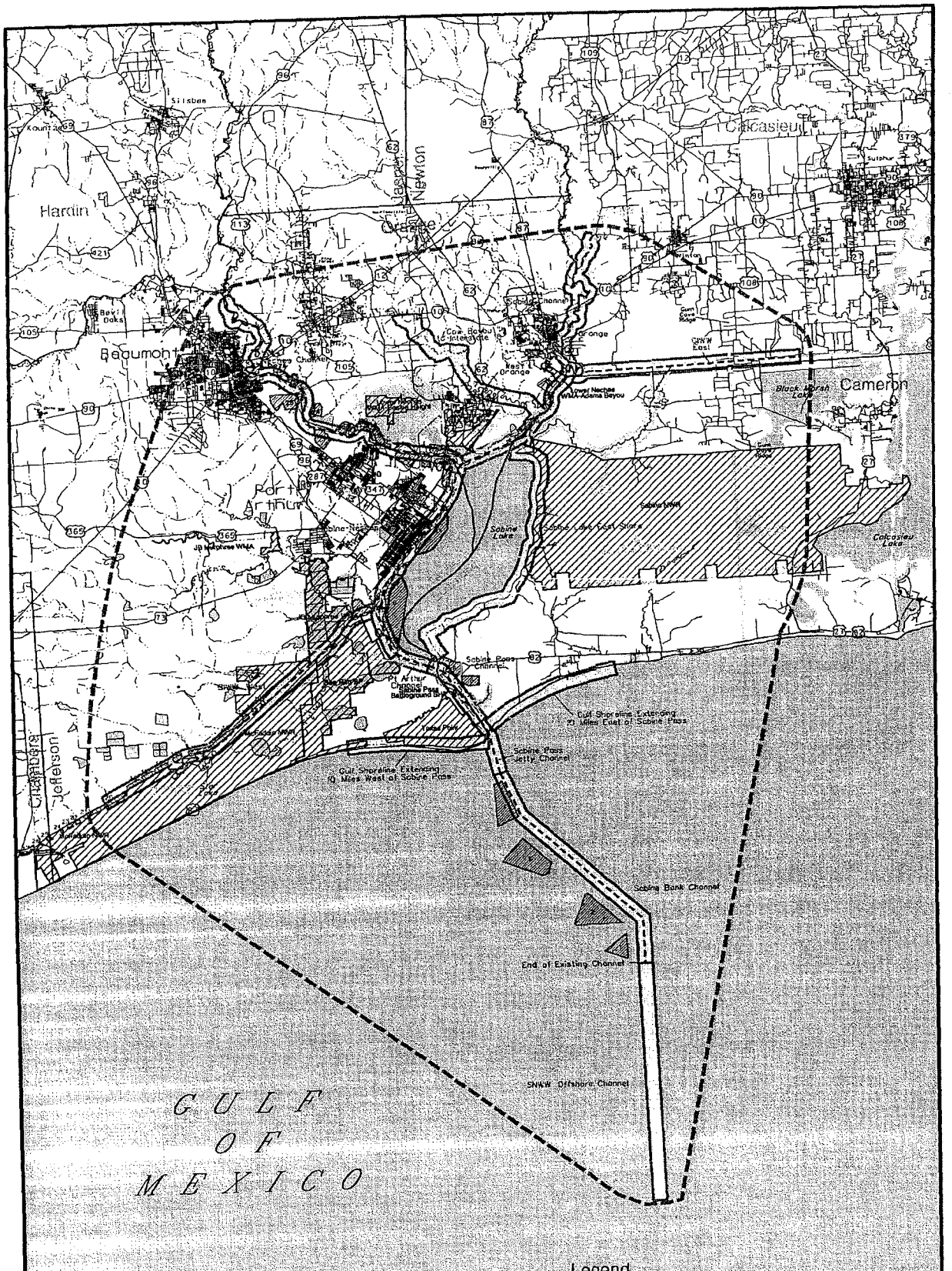
PBS&J looks forward to receiving information from your office and appreciates your time and effort required in responding to this request. Please contact Mike Horvath or me at 512 327-6840 if you have any questions or require additional study area information.

Sincerely,

Martin Arhelger
Project Manager
Vice President

attachment

6504 Bridge Point Parkway • Suite 200 • Austin, Texas 78730 • Telephone: 512.327.6840 • Fax: 512.327.2453 • www.pbsj.com



PBSJ
206 Wild Basin Rd., Ste. 300
Austin, Texas 78746-3343
Phone: (512) 329-8342 FAX: (512) 327-2453

Sabine-Neches Waterway Study Area

Prepared for: USACE
Job No.: 440870.00
Scale: 1" = 8.5 miles (343201)
Drawn by: M.Quaks
Date: 01/07/03
File: N:\440870\cad\b63sw\figs\fig3_1-1.dgn

Legend

- Detailed Study Areas W/1 Mile Corridors
- Site Specific Study Areas
- State Parks, National Wildlife Reserves, and Wildlife Management Areas
- Dredge Placement Areas
- Study Area
- Channel Centerlines
- County Boundaries
- State Boundaries

N S E W

PBS&J

An employee-owned company

September 14, 2004

Ms. Jill Kelly
Louisiana Department of Wildlife and Fisheries
P.O. Box 98000
Baton Rouge, Louisiana 70898

Dear Ms. Kelly,

The U.S. Army Corps of Engineers, with the Jefferson County Navigation District (JCND) as the local sponsor, has proposed a project to widen and deepen the Sabine-Neches Waterway. The Sabine-Neches Waterway (SNWW) is located in Jefferson and Orange counties in Texas and borders Cameron and Calcasieu Parishes in southwest Louisiana. The project area includes the SNWW from the Gulf of Mexico through the jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont, including an additional 17 miles of new channel extending beyond the end of the existing channel into the Gulf of Mexico. The Sabine Channel, that extends from Sabine Lake to the Port of Orange is not being considered for channel modification.

The study area is larger than the project area due to potential environmental affects and has been developed through consultation with the project Interagency Coordination Team (ICT). The study area is illustrated on the attached map.

PBS&J is currently developing the Biological Assessment (BA) for the proposed project and thereby is requesting your office provide any information regarding state protected species within the study area. Your office (Mr. Gary Lester) initially responded to our data request in 2002 (attached), however, we are currently updating our agency contacts. Please provide written response since your comments will be an important consideration in the development of the BA and in the assessment of potential project impacts. If there has been no change since your 2002 response, please let us know and we will utilize your earlier information.

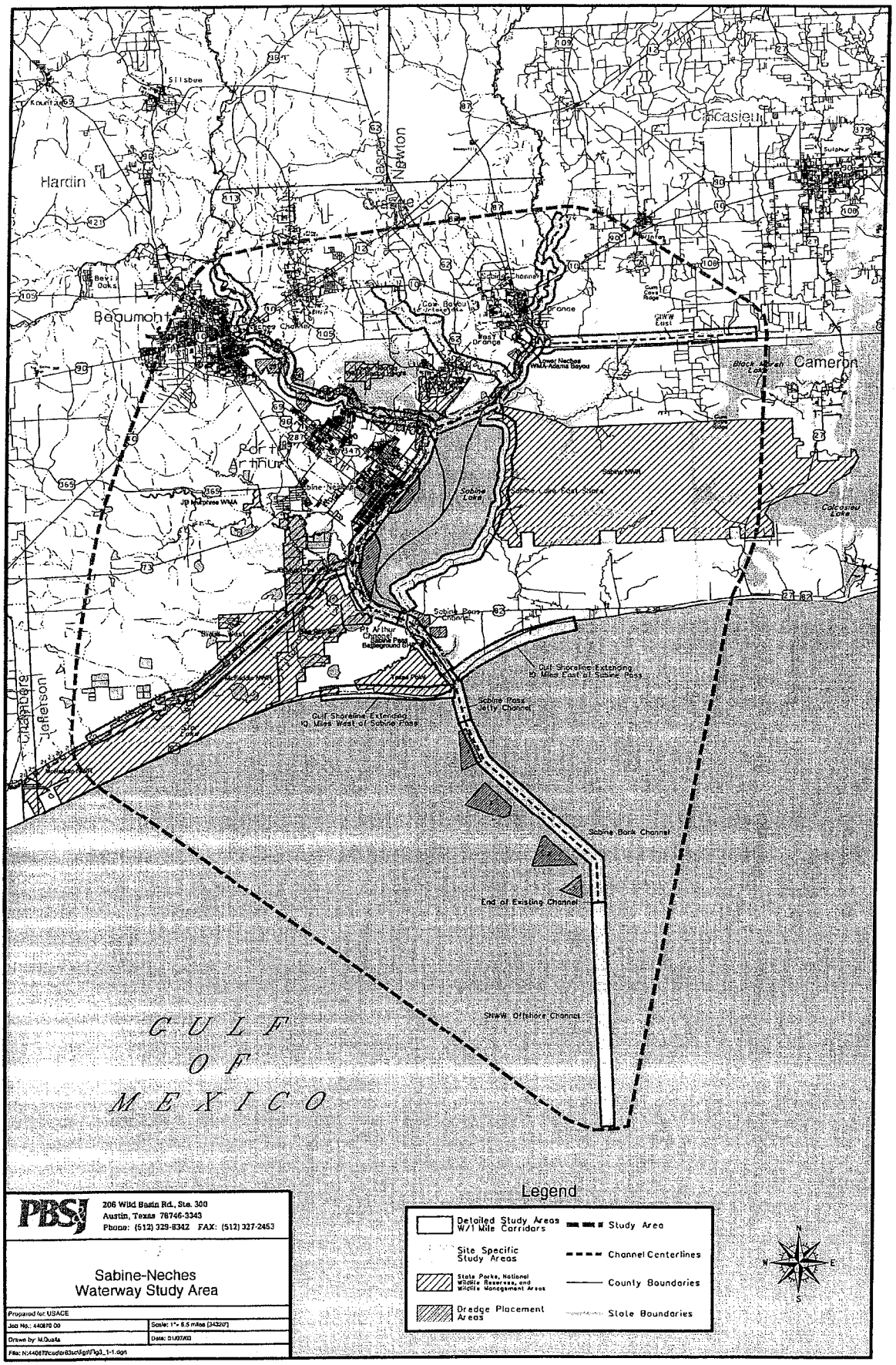
PBS&J looks forward to receiving information from your office and appreciates your time and effort required in responding to this request. Please contact Mike Horvath or me at 512 327-6840 if you have any questions or require additional study area information.

Sincerely,

Martin Arhelger
Project Manager
Vice President

attachments

6504 Bridge Point Parkway • Suite 200 • Austin, Texas 78730 • Telephone: 512.327.6840 • Fax: 512.327.2453 • www.pbsj.com



PBSJ
206 Wild Basin Rd., Ste. 300
Austin, Texas 78746-3343
Phone: (512) 329-8342 FAX: (512) 327-2453

Sabine-Neches
Waterway Study Area

Prepared for: USACE	
Job No.: 440870.00	Scale: 1" = 8.5 miles (343207)
Drawn by: M.Quale	Date: 01/07/03
File: N:\440870\cadd\83\ch5p9\fig3_1-1.dgn	

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

September 29, 2004

Mr. Martin Arhelger
Project Manager
PBS&J
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730

Dear Mr. Arhelger:

Please reference your September 14, 2004, letter requesting information regarding threatened and endangered species that may occur within the proposed study area for the Sabine-Neches Waterway (SNWW) project. The U.S. Army Corps of Engineers (Corps) has proposed to widen and deepen the SNWW bordering Jefferson and Orange Counties in Texas, and Calcasieu and Cameron Parishes in Louisiana. The proposed project area would include the SNWW from the Gulf of Mexico, passing through the jettied channel at Sabine Pass, the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to the Port of Beaumont, and an additional 17 miles of new channel extending beyond the end of the existing channel into the Gulf of Mexico. The U.S. Fish and Wildlife Service's (Service) Lafayette, Louisiana, Field Office has reviewed the information provided, and offers the following comments on the Louisiana-portion of the proposed project, in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the Migratory Bird Treaty Act (MBTA; 40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). For information regarding Federal-trust resources in Texas, please contact the Service's Houston, Texas, (i.e., Clear Lake) Field Office (17629 El Camino Real, Suite 211, Houston, TX 77058-3051, phone: 281-286-8282).

West Indian manatees (*Trichechus manatus*) may rarely occur along the Gulf coast in southwestern Louisiana during the summer months (i.e., June through September). They have declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

Bald eagles (*Haliaeetus leucocephalus*) nest in Louisiana from October through mid-May. Although we are not aware of active eagle nests within the proposed project area, there is an inactive nest located on the east side of the Sabine River and south of Interstate Highway 10; nests that are not currently listed in our database may also be present within areas containing suitable habitat. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water. Major threats to this species include habitat alteration, human disturbance, and environmental contaminants (i.e., organochlorine pesticides and lead).

Bald eagles usually return to the same nest year after year, but they may also use alternate nests in the same general vicinity in different years. Bald eagles are most vulnerable to disturbance during courtship, nest building, egg laying, incubation and brooding (roughly the first 12 weeks of the nesting cycle). Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree, thus lessening their chance of survival. Should the proposed project or associated work activities encroach within 1,500 feet of an eagle nest during the nesting season (October through mid-May), further ESA consultation with this office will be necessary. We further caution that the proposed activity should not damage any portion of the eagle nest trees, including their root systems (i.e., through soil compaction or disturbance).

Federally listed as endangered, brown pelicans (*Pelecanus occidentalis*) feed along the southwestern Louisiana coast in shallow estuarine waters, using sand spits and offshore sand bars as rest and roost areas. Major threats to this species include chemical pollutants, colony site erosion, disease, and human disturbance. Should you determine that the proposed project may directly or indirectly affect brown pelicans, further ESA consultation with this office will be necessary.

Federally listed as threatened, the piping plover (*Charadrius melodus*), as well as its designated critical habitat, occur along the southwestern Louisiana coast. Piping plovers winter in Louisiana, and may be present for 8 to 10 months. They arrive from the breeding grounds as early as late July and remain until late March or April. Piping plovers feed extensively on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation; they also require unvegetated or sparsely vegetated areas for roosting. Roosting areas may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependant on local weather and tidal conditions. Plovers move among sites as environmental conditions change.

On July 10, 2001, the U.S. Fish and Wildlife Service designated critical habitat for wintering piping plovers. In Louisiana, the proposed project would be located adjacent to Unit LA-1, a unit which includes ". . . the land from the seaward boundary of mean low low water to where densely vegetated habitat, not used by the piping plover, begins and where the constituent elements no longer occur. . ." (50 CFR Part 17, Volume 66, No. 132, Page 36127). Designated critical habitat identifies specific areas that are essential to the conservation of the species. The primary constituent elements for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Constituent elements are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. Important components (or primary constituent elements) of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers. Major threats to this species include the loss and degradation of habitat due to

development, disturbance by humans and pets, and predation. Should you determine that the proposed project may directly or indirectly affect the piping plover or its critical habitat, further ESA consultation with this office will be necessary.

Endangered and threatened sea turtles forage in the near-shore waters, bays and sounds of southwestern Louisiana. The National Marine Fisheries Service (NMFS) is responsible for aquatic marine threatened or endangered species. Please contact Mr. Eric Hawk (727/570-5312) in St. Petersburg, Florida, for information concerning those species in the aquatic environment.

The proposed project area may encompass areas containing suitable nesting habitat for colonial wading birds. Colonies that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may also be present. That database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a new, comprehensive coast-wide survey is conducted to determine the location of newly-established nesting colonies, we recommend that a qualified biologist inspect the proposed project area for the presence of undocumented nesting colonies during the nesting season. To minimize disturbance to colonial nesting birds, the following restrictions on activity should be observed:

1. For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, depending on species present).

2. For colonies containing nesting gulls, terns, and/or black skimmers, all activity occurring within 650 feet of a rookery should be restricted to the non-nesting period (i.e., September 16 through April 1, depending on species present).

3. We recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and avoid impacting them during the breeding season.

The Service's Sabine National Wildlife Refuge (NWR) is located along the eastern bank of the Sabine Lake. Please be aware that the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd through 668ee) requires that activities on NWRs must be compatible with NWR purposes. Please contact the Sabine NWR Manager at 337/762-3816 for additional information, and to ascertain the need for a NWR Special Use Permit for that portion of the proposed project.

The proposed project may also affect the Black Bayou Hydrologic Restoration (CS-27), Gulf Intracoastal Waterway – Perry Ridge West Bank Stabilization (CS-30), and East Sabine Lake Hydrologic Restoration (CS-32) Projects. Those projects are authorized by the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). The Service recommends avoiding direct impacts to specific project features (e.g., canal plugs, rock dikes, levees, water control structures, diversion canals, etc.). The exact locations of specific project features may be obtained at http://www.lacoast.gov/projects/list.asp, which contains detailed information on those CWPPRA projects. Please be aware that Section 303(d) of CWPPRA requires that all Federal activities be

consistent with the purposes of that Act and take into account the need to protect the public investment in the above-listed CWPPRA projects.

We appreciate the opportunity to provide comments during the early planning stages of the proposed action. If you have any questions or require further information on the Louisiana portion of the proposed project, please contact Brigette Firmin (337/291-3108) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

cc: FWS, Houston, TX
Sabine NWR, Hackberry, LA
NMFS, St. Petersburg, FL
NMFS, Baton Rouge, LA
LDNR, CMD, Baton Rouge, LA
LDWF, Baton Rouge, LA
LDWF, Natural Heritage Program, Baton Rouge, LA

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

REPLY TO
ATTENTION OF

February 21, 2007

Environmental Section

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

Dear Mr. Bernhart:

This letter is in regard to a proposed Federal project for the widening and deepening of the Sabine-Neches Waterway (SNWW) in Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana. The Galveston District is currently preparing a draft feasibility report and environmental impact statement which recommends enlargement of the existing navigation project to a proposed 48 x 700 foot channel.

We have prepared a Biological Assessment (BA) for the proposed work as both listed species and critical habitat are located within the affected area. A description of the proposed project is provided in the BA. We have concluded that the proposed project is likely to adversely affect the federally-listed endangered loggerhead, Kemp's ridley, and hawksbill sea turtles, and threatened green sea turtles. The proposed project will have no effect on federally-listed endangered whales and West Indian manatee, or the threatened Gulf sturgeon. The proposed project will have no affect on critical habitat.

Since the proposed project may affect federally-listed species, we request initiation of formal consultation pursuant to 50 CFR 402.14, to evaluate the effects of the proposed project on threatened and endangered sea turtles. In accordance with Section 402.14(g)(5), we also request that a draft copy of the biological opinion be furnished.

We appreciate your continued cooperation in allowing us to fulfill our responsibilities under the Endangered Species Act. Should you require any additional information during review of the enclosed BA, please call Ms. Janelle Stokes at 409/766-3039.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

Enclosure

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

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

REPLY TO
ATTENTION OF

February 21, 2007

Environmental Section

Steve Parris
Field Supervisor
U.S. Fish and Wildlife Service
Clear Lake Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, Texas 77058

Dear Mr. Parris:

This letter is in regard to a proposed Federal project for the widening and deepening of the Sabine-Neches Waterway (SNWW) in Jefferson and Orange counties, Texas, and Cameron Parish, Louisiana. The Galveston District is currently preparing a draft feasibility report and environmental impact statement which recommends enlargement of the existing navigation project to a proposed 48 x 700 foot channel.

We have prepared a Biological Assessment (BA) for the proposed work as both listed species and critical habitat are located within the affected area. A description of the proposed project is provided in the BA. We have concluded that the proposed project is not likely to adversely affect the federally-listed, endangered piping plover and its designated critical habitat at Louisiana Point, Louisiana. The piping plover and its critical habitat will experience a beneficial effect from the proposed project resulting from habitat enhancement (i.e., shoreline nourishment) through the beneficial use of dredged material. The proposed project will have no effect on the federally-listed, endangered brown pelican. No other federally-listed species are likely to occur, and no other designated critical habitat is located in the project area.

We are hereby requesting your written concurrence, pursuant to the informal consultation procedures prescribed in 50 CFR 402.13, that the proposed action is not likely to adversely effect federally-listed species or designated critical habitat. We appreciate your continued cooperation in allowing us to fulfill our responsibilities under the Endangered Species Act. Should you require any additional information during review of the enclosed BA, please call Ms. Janelle Stokes at 409/766-3039.

Sincerely,

Carolyn Murphy

Carolyn Murphy
Chief, Environmental Section

Enclosure

CF with enclosure:

Russell Watson
Field Supervisor
U.S. Fish and Wildlife Service
Lafayette Ecological Services Field Office
646 Cajundome Boulevard, Suite 400
Lafayette, LA 70506

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real #211
Houston, Texas 77058-3051
281/286-8282 / (FAX) 281/488-5882

March 20, 2007

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

Dear Ms. Murphy:

This responds to your letter of February 21, 2007, regarding a proposed Federal project to widen and deepen the Sabine-Neches Waterway (SNWW) in Jefferson and Orange counties in Texas, and Cameron Parish in Louisiana. These comments apply only to the proposed project within the borders of the State of Texas.

The proposed project includes deepening the Sabine Pass Jetty Channel, the Sabine Pass Channel, Port Arthur Canal, Sabine-Neches Canal, and the Neches River Channel to the Port of Beaumont from 40 to 48 feet; deepening the SNWW Entrance Channel in the Gulf from 42 to 50 feet; widening the Sabine Pass Jetty Channel, the Sabine Pass Channel, and the Port Arthur Canal to the junction with Taylors Bayou from 500 to 700 feet; deepening the Taylors Bayou Navigation Channel and turning basins to 48 feet; dredging two new anchorage basins, two new turning basins, and three turning and anchorage basins on the Neches River Channel. As mitigation, the Dredged Material Management Plan (DMMP) will include the use of dredged material to restore three degraded marsh areas on the Neches River (Rose City, Bessie Heights, and Old River Cove); restore six degraded marsh areas near Willow and Black Bayous, Louisiana; and nourish Gulf shorelines at Texas and Louisiana Points to create new saline marsh along a 3-mile stretch of shore.

The Biological Assessment indicates that a 2006 survey along the proposed shore nourishment areas found no suitable habitat for piping plovers on the Texas side. Placement of dredged material on an eroding bank should create suitable habitat where none currently exists, resulting in a beneficial effect for the species. Therefore, we concur that the proposed project may affect but is not likely to adversely affect the piping plover.

Although the brown pelican is a year-round resident along the upper Texas coast, including Jefferson and Orange counties, no active nesting sites are known to occur in the vicinity of the

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proposed project. Therefore, we concur that the project is not likely to adversely affect the brown pelican.

The Biological Assessment indicates that, as of 2003, no bald eagle nests were known to exist in Jefferson or Orange Counties. Two nesting territories have since been discovered in Orange County, but neither is in the immediate vicinity of the project area. The number of bald eagles nesting in Texas is increasing and often the locations of their nests are not known. Since bald eagles often nest and forage on river channels and reservoirs, steps should be taken to determine whether bald eagles may be nesting within or near the project area. These steps may include talking to local landowners and/or lessees about bald eagle sightings and surveying suitable habitat during the nesting season for bald eagles and their nests.

These comments are provided in accordance with Section 7 of the Endangered Species Act (87 stat. 884 as amended; 16 U.S.C. 1531 et seq.). If the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

If you have any questions, or if we can be of further assistance, please call Kathy Nemec of my staff at 281/286-8282.

Sincerely,

Stephen D. Parris

Stephen D. Parris
Field Supervisor, Clear Lake ES Field Office

cc: Field Supervisor, Lafayette, LA, ES Field Office

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

March 22, 2007

Ms. Carolyn Murphy
Chief, Environmental Section
U.S. Army Corps of Engineers
Post Office Box 1229
Galveston, Texas 77553-1229

Dear Ms. Murphy:

Please reference your February 21, 2007, letter requesting: (1) our review of the U.S. Army Corps of Engineers' (Corps) biological assessment (BA) of the Sabine-Neches Waterway (SNWW) Channel Improvements project, and (2) our concurrence with the Corps' determination that the proposed project is not likely to adversely affect the threatened Louisiana black bear (*Ursus americanus luteolus*), endangered West Indian manatee (*Trichechus manatus*), endangered brown pelican (*Pelecanus occidentalis*), endangered interior least tern (*Sterna antillarum*), endangered red-cockaded woodpecker (RCW, *Picoides borealis*), threatened bald eagle (*Haliaeetus leucocephalus*), and threatened piping plover (*Charadrius melodus*) and its designated critical habitat. The proposed SNWW project would be located in Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana.

The U.S. Fish and Wildlife Service's (Service) Lafayette, Louisiana, Field Office has reviewed the information you provided, and offers the following comments on the Louisiana portion of the proposed project only, in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Please note that the Service's Houston, Texas, (i.e., Clear Lake) Field Office (17629 El Camino Real, Suite 211, Houston, TX 77058-3051, phone: 281-286-8282) is the lead Service point of contact for the proposed project, and should be contacted for information concerning Federal trust fish and wildlife resources within the Texas portion of the proposed project.

According to the BA, the proposed SNWW project would involve:

1. deepening the Sabine Pass Jetty Channel, the Sabine Pass Channel, the Port Arthur Canal, the Sabine-Neches Canal, and the Neches River Channel to the port of Beaumont from 40 to 48 feet;

2. deepening the existing SNWW Entrance Channel in the Gulf of Mexico from 42 to 50 feet, plus advance maintenance and allowable over-depth, and constructing a 13.1-mile-long extension of the offshore entrance channel;

3. widening the Sabine Pass Jetty Channel, the Sabine Pass Channel, and the Port Arthur Canal to its junction with Taylors Bayou from 500 to 700 feet;

4. bending easings in three areas on the Sabine-Neches Canal and three areas on the Neches River Channel;

5. deepening the Taylors Bayou Navigation Channel and turning basins to 48 feet, and widening the entrance and connecting channels to improve vessel maneuverability;

6. dredging two new anchorage basins, two new turning basins, and three turning and anchorage basins on the Neches River Channel, as well as reducing the existing Sabine Pass anchorage basin in size by approximately 50 percent;

7. beneficially using dredged material to restore three degraded marsh areas on the Neches River and nourish Gulf shorelines at Texas and Louisiana Points;

8. restoring six degraded marsh areas near Willow and Black Bayous, Louisiana;

9. adding four new Ocean Dredged Material Disposal sites in the Gulf along the 13-mile-long channel extension; and,

10. using 16 existing upland placement areas and two new expansions of existing placement areas for construction and maintenance of the proposed project.

Dredging in the Sabine Pass Jetty Channel would be conducted by a hopper dredge, while the remaining inshore channels would be constructed with hydraulic pipeline dredges. Direct project effects are those associated with navigation channel improvements and the placement of dredged material, including impacts to benthic organisms and their Gulf, estuarine, and riverine water-bottom habitats; dredging impacts to bottom-feeding and pelagic organisms (e.g., sea turtles); impacts to marshes and upland habitats from the enlargement of placement areas; and, impacts to shorebirds (e.g., brown pelican, piping plover) and their habitat from the regular placement of maintenance material on the Gulf shoreline. Indirect project effects are an anticipated increase in salinity and the projected loss of 716 acres of tidal marsh resulting from its conversion to open water. The Corps does not anticipate any effects to federally listed species as a result of salinity increases or marsh loss.

According to the BA, beneficially using dredged material to nourish a 3-mile-long portion (mile 0.5 to 3.5) of the Gulf shoreline would result in beach nourishment at Louisiana Point every 6 years (i.e., each 3-year dredging cycle would alternate between Texas and Louisiana Points). The material would average 51 percent silt, 31 percent clay, and 18 percent sand, and would be hydraulically pumped via a pipeline into the nearshore zone, such that some material is expected to flow over existing marsh and shoreline while the remainder flows into the nearshore waters. Marsh planting would occur as soon as possible on the inland portion of the emergent berm to assist stabilization of the material. Based on past experience with similar projects, the Corps expects that dredged material will dissipate quickly during a placement event, with 60 percent remaining to form a shelf on the shallow nearshore slope in front of the existing marsh edge. Since the material would be unconsolidated and is prone to erosion, the Corps estimates that 50 percent of the material that remains after each placement event would erode away by the end of

the 6-year cycle. Over the 50-year life of the project, however, beach nourishment activities using maintenance dredging material from the Sabine Pass Channel would result in the creation of new saline marsh and beach habitat at Louisiana Point. Because of natural erosional processes along Louisiana Point and the dynamic coastal/beach system, it is difficult to estimate how many acres of marsh and beach habitat would be created over the life of the project.

The Corps has determined that the proposed SNWW project would not affect the Louisiana black bear, interior least tern, RCW, or bald eagle because those species are unlikely to occur in the project area due to lack of suitable habitat. According to our records, the Service confirms that we do not have records of those species occurring within the proposed project areas in Louisiana; therefore, we concur with the Corps' determination that the proposed project would not affect those species. In addition, our records indicate that the West Indian manatee rarely occurs along the southwestern portion of the Louisiana Gulf coast; therefore, we also concur with the Corps' determination that the proposed project is not likely to adversely affect that species. Specific comments regarding project-related effects to the brown pelican and the piping plover, as well as its designated critical habitat, are discussed below.

Louisiana Point is the southwestern tip of the Louisiana Gulf coast shoreline. It is an uninhabited mixture of marsh and beach shoreline. The area has been heavily eroded by natural processes due to increasing tidal prism, insufficient volumes of sediment supplied by littoral currents, land subsidence, and sea-level rise (Boesch 1982). Although increases in the tidal prism may be primarily responsible for enlargement of tidal passes, the insufficient supply of sand available to rebuild eroded areas has also contributed to increased tidal pass widths and shoreline retreat (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999). Where insufficient supplies of sand prevail, measures to maximize sand retention, such as sand fencing and vegetative planting, are needed to effectively rebuild and maintain these eroded areas.

According to the BA, Louisiana Point currently consists of an eroded shoreline that extends for approximately 2 miles from the east jetty. A sandy beach, varying from 50 to 300 feet in width, begins approximately 2 miles east of the east jetty and extends east beyond the proposed beach nourishment project area. Shoreward of the beach is an eroded shoreline with occasional flats containing extensive stands of dense vegetation. A 1.65-mile-long tidal sand/mudflat is located approximately 1,500 feet offshore of Louisiana Point at its western end, and extends such that it gradually meets the shoreline at its eastern end. A 1-mile-long offshore sand bar that extends from 4,200 feet offshore at its western end to 1,200 feet offshore at its eastern end is also located offshore of Louisiana Point.

As you know, brown pelicans feed in shallow estuarine waters, and use sand spits and offshore sand bars as rest and roost areas. Brown pelicans are currently known to nest on Rabbit Island in Calcasieu Lake in southwestern Louisiana. Although no brown pelican nesting sites are known to occur within the proposed project area, they may occasionally use those portions of the proposed project area that contain suitable habitat (e.g., Sabine Pass Channel, Louisiana Point) for feeding and/or loafing. Any pelicans that may be feeding or loafing in the project area during construction (and future maintenance dredging activities) are likely to be temporarily displaced to nearby suitable habitat, but they would not be permanently excluded from using the project

area. Based on that information, the Service concurs with your determination that the proposed project is not likely to adversely affect the brown pelican.

The threatened piping plover, as well as its designated critical habitat, occur within the beach nourishment portion of the proposed project area. Piping plovers winter in Louisiana, and may be present for 8 to 10 months annually. They arrive from the breeding grounds as early as late July and remain until late March or April. Piping plovers feed extensively on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation; they also require unvegetated or sparsely vegetated areas for roosting. Roosting areas may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependant on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile-long area.

According to the BA, the Corps would initially require approximately 4.75 years to complete the entire proposed project, with several contractors working simultaneously, and maintenance dredging would occur every 3 years following completion of the initial project features. The beach nourishment portion of the proposed project would temporarily affect approximately 1.5 miles of sandy beach on the Gulf shoreline, and it is the only feature that has the potential to affect piping plovers. Because plovers may be present in the project area for 8 to 10 months on an annual basis, the initial beach nourishment event (and subsequent events every 6 years) would likely occur when wintering piping plovers are present and utilizing suitable habitat at Louisiana Point. According to the BA, an offshore sand bar and an offshore sand/mudflat located less than 1 mile from the proposed beach nourishment area contain suitable piping plover habitat. Suitable piping plover habitat also exists along the Gulf shoreline adjacent to the beach nourishment project area. Although studies indicate that wintering piping plovers generally remain within a 2-mile-long area, sufficient roosting and foraging habitat would be available for them to disperse into on those offshore features or the adjacent shoreline during construction activities and future maintenance dredging. Such disturbance would be temporary in nature and would not permanently exclude piping plovers from utilizing the nearby habitats or the project area. In addition, the proposed project would result in creation of additional suitable habitat (i.e., beach habitat) over the 50-year life of the project. Furthermore, construction activities would also have no long-term effect on the existing water quality conditions within the proposed project areas because any increase in turbidity from dredging and placement of material on/near the shoreline would be temporary in nature, and the site would return to normal turbidity levels shortly after construction is complete. Based on that information, the Service also concurs with the Corps' determination that the proposed project is not likely to adversely affect the piping plover.

On July 10, 2001, the Service designated 137 areas along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas as critical habitat for wintering piping plovers (66 FR, No. 132). Those areas consist of approximately 165,211 acres of mapped area along the Gulf and Atlantic coasts, as well as margins of interior bays, inlets, and lagoons. Piping plover designated critical habitat identifies specific areas that are essential to the

conservation of the species. The "primary constituent elements" (PCEs) for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Constituent elements are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. The PCEs of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers. Major threats to this species include the loss and degradation of habitat due to development, disturbance by humans and pets, and predation.

The proposed project would be located within Critical Habitat Unit LA-1 which encompasses the Texas/Louisiana border to Cheniere au Tigre (including Louisiana Point). At the time of designation, that Unit consisted of approximately 6,548 acres (approximately 89.87 miles of shoreline). Specifically within the proposed beach nourishment project area, piping plover critical habitat includes ". . . the land from the seaward boundary of mean low low water [MLLW] to where densely vegetated habitat, not used by the piping plover, begins and where the constituent elements no longer occur" (66 FR, No. 132, Page 36127). Because of the dynamic coastal system, the current acreage of the entire Unit is unknown. Nonetheless, the proposed project would temporarily affect and restore approximately 3.0 miles of shoreline, of which 1.5 miles contains PCEs of piping plover critical habitat.

Critical habitat may be adversely affected if the proposed action affects the ability of the PCEs to support foraging, roosting, and sheltering, or the physical features necessary to maintain the natural processes that support those elements. Due to the nature of the proposed activities, temporary effects to existing piping plover critical habitat would occur during the initial beach nourishment event and once every 6 years for future maintenance dredging events. Construction and future periodic maintenance of the proposed project would temporarily impact (i.e., once every 6 years for 50 years), but not eliminate, a total of approximately 1.5 miles of existing piping plover critical habitat. After each beach nourishment event, and over the 50-year life of the project, additional piping plover critical habitat would be created, but due to natural erosional processes and the dynamic coastal/beach system at Louisiana Point, an exact acreage has not been estimated. During the future without the proposed SNWW project, the complete loss of existing piping plover critical habitat within that project area would be expected due to current erosion of the shoreline.

In the short-term (i.e., immediately post-nourishment event), the proposed project area would provide less than ideal habitat over the next few months until wave actions have redistributed the dredged material and wind action has deposited sand within the dynamic coastal/beach environment. Existing and newly created foraging habitat immediately post-construction would not be suitable until benthic organisms recolonize those areas. Meanwhile, adjacent critical habitat on the offshore mudflat, offshore sand bar, and adjacent beach would provide sufficient habitat for the piping plover. In the long-term (i.e., 50 years post-construction) and later, the Corps expects that the proposed project area would mimic existing critical habitat that was formed by natural coastal processes. Therefore, the Corps expects that any temporary impacts to piping plover critical habitat should eventually be restored, and that such restored habitat would

have a longer predictable existence due to increased stability of the shoreline, such that, the overall beach nourishment portion of the proposed project would benefit the piping plover and its designated critical habitat.

According to the BA, the Corps has determined that the proposed project is not likely to adversely affect designated piping plover critical habitat because a portion of the Louisiana Gulf shoreline would be temporarily impacted, but the overall effects of adding sediment to the shoreline would create new critical habitat and extend the longevity and availability of existing piping plover critical habitat within the proposed project area. According to our calculations, the proposed project would impact less than 2 percent of the PCEs within Critical Habitat Unit-LA1, and even less than that of the total designated critical habitat on the Atlantic and Gulf coasts. In addition, over the designed life of the project, the longevity of critical habitat PCEs would be increased by maintenance of the natural processes that support those elements. Based upon the above information, project-related effects to piping plover critical habitat would be insignificant and temporary in nature; therefore, the Service also concurs with the Corps' determination that the proposed project is not likely to adversely affect the piping plover's designated critical habitat.

No further ESA consultation with the Service's Lafayette, Louisiana, Field Office would be required for the proposed action unless there are changes in the scope or location of the project features, or the project has not been initiated within one year. If the proposed action has not been initiated within one year, follow-up consultation should be accomplished with the Service prior to making expenditures to ensure that the threatened and endangered species information is up-to-date. If the scope or location of the proposed action is changed, re-initiation of consultation should occur as soon as such changes are made.

We appreciate the Corps' continued cooperation in the conservation of threatened and endangered species and their designated critical habitat. If you have any questions or require additional information, please contact Brigette Firmin (337/291-3108) of this office.

Sincerely,

James F. Boggs
Acting Supervisor
Louisiana Field Office

cc: FWS, Panama City, FL (Attn: Ms. Patricia Kelly)
FWS, Houston, TX (Attn: Ms. Kathy Nemec)
LDNR, Coastal Management Division, Baton Rouge, LA
LDWF, Baton Rouge, LA (Attn: Mr. Kyle Balkum)
LDWF, Natural Heritage Program, Baton Rouge, LA

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Appendix A3

Fish and Wildlife Coordination and Essential Fish Habitat

APR 1 3 2005

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

PER

April 5, 2005 F/SER46/RH,PW:jk
225/389-0508

Colonel Steven P. Haustein
District Engineer, Galveston District
Department of the Army, Corps of Engineers
Post Office Box 1229
Galveston, Texas 77553-1229

Dear Colonel Haustein:

NOAA's National Marine Fisheries Service (NMFS) has been involved with the evaluation of the environmental impacts of the proposed deepening of the Sabine-Netches Waterway (SNWW) led by staff of the Galveston District (GD) under the auspices of the Sabine-Netches Waterway Re-Evaluation Study. Water control structures across numerous hydrologic connections between Sabine Lake and Louisiana wetlands have been proposed as a potential mitigation alternative to compensate for the anticipated wetland loss resulting from the deepening of the SNWW. The NMFS is concerned that the proposed project, and in particular this potential mitigation alternative, may adversely affect essential fish habitat (EFH) and other aquatic resources of national importance.

The GD convened a SNWW Habitat Workgroup that estimated that channel deepening could result in 497 and 468 acres of wetland loss in Louisiana and Texas, respectively. These impacts were based on an average increase in salinity estimated to be 0.78 parts per thousand (ppt) in Louisiana and 0.98 ppt in Texas, as predicted by modeling conducted by the Corps of Engineers' Engineer Research and Development Center. A maximum increase of 2.5 ppt was projected for some wetlands within the overall study area. Water control structures across many of the tidal connections between Sabine Lake and the marshes in Louisiana are being considered as a mitigation alternative to reduce saltwater intrusion in an effort to prevent the estimated wetland loss.

Marine fishery productivity in Louisiana annually rates second only to Alaska in terms of pounds produced and dockside value (NMFS 2004). At least 90 percent of that production is from species that are dependent on coastal wetlands as nursery, resting, and foraging habitats for at least a portion of their life cycle. These wetlands also have been identified under the Magnuson-Stevens Fishery Conservation and Management Act as essential fish habitat (EFH) for a variety of federally managed species, such as brown shrimp, white shrimp, red drum, and Spanish mackerel. In addition, other estuarine-dependent species serve as prey for other fish managed under the Magnuson-Stevens Act by the Gulf of Mexico Fishery Management Council (e.g., mackerels, snapper, and groupers) and highly migratory species managed by the NMFS (e.g., billfishes and sharks).

The installation and operation of water control structures has been shown to significantly impact marine fishery access to, use of, and production on, wetlands behind those structures (Herke et al, 1992, Rogers et al. 1992, and Rogers and Herke 1995). While it is still early in the planning stage and the exact type of structures and operational plan for each are unknown, it is likely that a structure which would have a significant impact on the water salinity of the area would not provide an adequate level of fishery access to, and production on, the affected wetlands (Rogers et al. 1994). As such, it is unclear how mitigation that would adversely impact marine fishery production could compensate for an action that also could have negative impacts on habitat supportive of those resources.

The NMFS also is concerned that although the installation of water control structures may buffer salinity changes in the marsh, they also may cause salinities to be higher in managed areas during droughts or following storm surges. Rogers et al. (1994) identified four studies where salinities were slightly higher inside the managed area, two where there were no significant difference in salinities, and three where salinities were buffered. Unpublished data from the Cameron Creole Watershed Project, located on the eastern side of Calcasieu Lake in Louisiana, suggest lake water level and rainfall have a greater influence over water salinities in the marsh than water control structures. Other studies in Louisiana have shown higher water salinities in the marsh interior during droughts or following storm surges (Rogers et al. 1992, Bourgeois 1997). Given such uncertainties, it is unclear how the installation of water control structures can be expected to offset increased salinities that may result from the deepening of the SNWW to a level sufficient to compensate for the induced wetland loss.

The installation of water control structures and implementation of marsh management activities also has been shown to impact factors that help maintain healthy marshes. Monitoring data from the East Mud Lake project, constructed under the auspices of the Coastal Wetlands Planning, Protection, and Restoration Act, showed decreases in marsh vegetation cover, greater subsidence, higher water levels, and longer periods of flooding inside the management area than outside in unmanaged marsh (Weifenbach and Clark 2000). Other studies document similar problems with prolonged flooding and higher salinity, as well as reduced sediment deposition and accretion in managed marsh compared to unmanaged marsh (Boumans and Day 1994; Meeder 1989). These effects can result in reduced wetland plant growth and increased stress in marshhay cordgrass and smooth cordgrass (Koch and Mendelssohn 1989), and contribute to wetland loss (Cahoon and Groat 1990).

Finally, the NMFS is concerned about the cumulative impacts of marsh management activities on the wetlands connected to Sabine Lake and the associated impact to marine fishery productivity. The proposed structures would semi-impound most of the remaining tidally-influenced area between Sabine Lake and Calcasieu Lake. This would contribute to the large cumulative impacts of structural marsh management in the Calcasieu-Sabine estuary on commercial and recreational marine fishery productivity. According to the New Orleans District's analysis of permit data, 98,266 acres of the Calcasieu-Sabine Basin have been affected by completed, partially implemented, or implementable marsh management projects (U.S. Army Corps of Engineers

1996). That EIS found that nowhere in the Louisiana coastal zone is there such an extensive effort to place an entire sub-basin under some form of hydrologic management. The Science Advisory Board convened by the Environmental Protection Agency found that ecosystem-level cumulative impacts to fisheries productivity could result from multiple structural marsh management projects that reduce available marsh habitat within an estuary (Sanzone and McElroy 1998).

In view of the above, the NMFS urges the GD to consider less environmentally damaging alternatives than structural marsh management to avoid, minimize, or mitigate impacts associated with the proposed deepening of the SNWW. While we do not consider hydrologic management to be a suitable mitigative option, we are committed to continue working cooperatively with the stakeholders to investigate and implement alternative measures to maintain wetland health while sustaining marine fishery productivity.

We appreciate your consideration of our comments.

Sincerely,

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
FWS, Lafayette
FWS, SNWR
EPA, Dallas
EPA, Ettinger
LA DWF
LA DNR
Sierra Club
LA Wildlife Federation
Coalition for Coastal LA
F/SER46
F/SER4
Files

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PBS&J

An employee-owned company

April 24, 2006

Rusty Swafford
National Marine Fisheries Service
Habitat Conservation Division
4700 Avenue U
Galveston, Texas 77551-5997

RE: Sabine-Neches Waterway Project
PBS&J Job Number 440870

Dear Mr. Swafford:

PBS&J has contracted with the Galveston District of the U.S. Army Corps of Engineers (Galveston District) to prepare the EIS for the Sabine-Neches Waterway Project (project) located in Jefferson and Orange Counties, Texas and Calcasieu and Cameron Parish, Louisiana. The Galveston District is engaged in a potential widening and deepening of the Sabine-Neches Waterway. The project sponsor is the Jefferson County Navigation District. Alternatives are in the process of being developed.

PBS&J is collecting data for the EIA. The level of detail for our assessment will be as necessary to describe existing conditions and to provide analysis of future conditions due to project impacts. The project study area is in the vicinity of Beaumont, Port Arthur, and Sabine Pass, Texas and encompasses the entire 75-mile long deep draft channel from the Gulf of Mexico through a jettied channel at Sabine Pass, through the Port Arthur Canal, Sabine-Neches Canal, and Neches River Channel to Beaumont and adjacent areas that may be affected by proposed project alternatives.

PBS&J is submitting this letter to request information on Essential Fish Habitat occurring in the project area, which should be addressed for the project, and any conservation recommendations you may have. Please call me at (512) 342-3389 if you have any questions or need additional information.

Sincerely,

Lisa Vitale

Lisa Vitale, FP-C
Marine/Aquatic Biologist
LDV/lv

6504 Bridge Point Parkway • Austin, TX. 78730 • Telephone 512.327.6840 • Fax 512.327.2453 • www.pbsj.com

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

Southeast Regional Office
263 13th Avenue S
St. Petersburg, Florida 33701-5511

March 8, 2010

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

Dear Ms. Murphy:

The NOAA National Marine Fisheries Service has reviewed the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project Southeast Texas and Southwest Louisiana. We have reviewed the proposed plans and associated essential fish habitat assessment and NMFS concurs with the Corps of Engineers' determination that the proposed project will temporary adversely impact essential fish habitats due to physical disruption and increased turbidity during dredging, as well as potentially causing secondary impacts to essential fish habitats from slightly increasing salinities in some areas of the Sabine Lake watershed affect living marine resources. We also concur that the proposed beneficial use of dredged material to mitigate and restore 13,052 acres of tidal marsh habitats, as well as the enhancement of approximately 1,828 acres of open water ponds and 5,589 acres of marsh, will offset the adverse impacts to essential fish habitats and provide a net-benefit to Federally managed fisheries. Therefore, NMFS has no comments to provide regarding the proposed plans and no further consultation under the Magnuson-Stevens Fishery Conservation and Management Act with the NOAA National Marine Fisheries Service is required. 1

If we may be of further assistance, please contact or Mr. Rusty Swafford of our Galveston Facility at (409) 766-3699.

Sincerely,

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

Mr. Miles M. Croom
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue S
St. Petersburg, FL 33701-5511

RESPONSE TO COMMENTS

Comment No.	Response
1	The FEIS has been revised to note that the National Marine Fisheries Service (NMFS) concurs with the FEIS impact evaluation and proposed BU and mitigation plans, and has no further comments. No further consultation under the Magnuson-Stevens Fishery Conservation and Management Act with the National Oceanic and Atmospheric Administration NMFS is required.

United States Department of the Interior
FISH AND WILDLIFE SERVICE

Division of Ecological Services
17629 El Camino Real #211
Houston, Texas 77058-3051
281/286-8282 FAX: 281/488-5882

March 16, 2010

Colonel David C. Weston
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229
Galveston, Texas 77553

Dear Colonel Weston:

This letter transmits our revised Sabine-Neches Waterway Channel Improvements Project, Jefferson and Orange Counties, Texas and Cameron Parrish, Louisiana, Fish and Wildlife Coordination Act Report that addresses changes in the scope of the project, sea level rise, long term monitoring and mitigation. This report provides the U.S. Fish and Wildlife Service's recommendations for mitigation of unavoidable impacts to important fish and wildlife resources in the Sabine-Neches Waterway area, and recommendations for long-term management of mitigation and beneficial uses sites.

We appreciate the opportunity afforded us to assist in planning this large and important Federal project, and appreciate the efforts of your staff in considering coastal Texas and Louisiana fish and wildlife resources. We are providing copies to the other environmental agencies, including Texas Parks and Wildlife Department, Louisiana Department of Fisheries and Wildlife, Louisiana Department of Natural Resources, National Marine Fisheries Service, U.S. Environmental Protection Agency, Texas General Land Office, and Texas Council on Environmental Quality.

Please contact me or Donna Anderson at 281/286-8282 or Darryl Clark at 337/291-3111 if you have comments or questions. Thank you.

Sincerely,

Edith Erfling

for Steve Parris
Field Supervisor, Clear Lake ES Field Office

TAKE PRIDE IN AMERICA

cc:
Carolyn Murphy, U.S. Army Corps of Engineers, Galveston, TX
Jaime Schubert, Texas Parks and Wildlife Department, Dickinson, TX
Barbara Keeler, U.S. Environmental Protection Agency, Dallas, TX
Robert Barhan, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA
Scott Angelle, Louisiana Department of Natural Resources, Baton Rouge, LA
Rusty Swafford, National Marine Fisheries Service, Galveston, TX
Robert Hansen, Texas Commission on Environmental Quality, Austin, TX
Tammy Brook, Texas General Land Office, Austin, TX

SABINE-NECHES WATERWAY CHANNEL IMPROVEMENTS PROJECT, JEFFERSON AND ORANGE COUNTIES, TEXAS, AND CAMERON PARISH, LOUISIANA

FISH AND WILDLIFE COORDINATION ACT REPORT

PREPARED BY

PHIL GLASS
DARRYL CLARK
DONNA ANDERSON

U.S. FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES

CLEAR LAKE, TEXAS

LAFAYETTE, LOUISIANA

ECOLOGICAL SERVICES

SOUTHWEST AND SOUTHEAST REGIONS

March 2010

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SABINE-NECHES WATERWAY CHANNEL IMPROVEMENTS PROJECT, JEFFERSON AND ORANGE COUNTIES, TEXAS, AND CAMERON PARISH, LOUISIANA

The Sabine-Neches Waterway (SNWW) is a Y-shaped commercial waterway comprised of interlocking natural river channels and manmade canals. The waterway presently extends from the Gulf of Mexico, through the Sabine Jetties, 63.8 miles northward across the western edge of Sabine Lake, at 100 square (sq) miles in area the fifth largest estuary in Texas (White et al. 1987), to Port Arthur and Beaumont on the old Neches River Channel and to Orange on the Old Sabine River Channel (Figure 1). Present dimensions are 42 X 800 feet (ft) in the 22-mile Entrance Channel, 40 X 500 ft in the 5.6-mile Sabine Pass Channel, 40 X 500 ft in the 6.2-mile Port Arthur Canal, 40 X 400 ft in the 11.3-mile Sabine-Neches Canal, and 40 X 400 ft in the 18-mile Neches River Channel. General tonnage moved along the SNWW has generally risen during the 1990's from 38 thousand tons in 1990 to 81 thousand tons in 2000. Primary commodities shipped via the SNWW are crude oil (60,810 tons imported in 2000), gasoline (3,710 tons exported), petroleum coke (3,329 tons exported), fuel oil (2,470 tons exported), sand and gravel (1,056 tons imported), and wheat (753 tons exported) (USACE 2000). Since the 2002 Iraq War, the Ports of Orange and Beaumont have been the largest shippers of military supplies in the country.

This revised report addresses changes in the scope of the project, sea level rise modeling, long term monitoring and mitigation.

Background and History of the Sabine-Neches Waterway

The United States expanded into and incorporated Texas during the early 1800's. U.S. Army expeditions explored Texas rivers and began rudimentary navigation improvements, mostly removal of long-established log jams. The first survey of the Sabine Pass area, in 1853, found channel depths of 5 ft, but with a soft mud bottom allowing steamships of up to 10 ft draft to pass. Construction began to deepen inland portions of the waterway shortly after the River and Harbors Act of 1875 and continued in segments until 1896, when the mouth of the channel at Sabine Pass was deepened (6 ft-deep by 70-100 ft-wide) and the jetties were constructed to prevent silting (Alperin 1977, Gammill et al. 2002).

Historic records show that, from 1840 through the early 1920's, 32 sawmills operated in the lower Sabine-Neches River areas (PBS&J 2003). Several of the beneficial use wetland sites selected for the current project still show marked effects of logging from this era, including radial "star" logging canals, vast scrub/shrub swamp with numerous old tree stumps, and a few still-barren mud flats.

The discovery of the Spindletop oil field in 1901 increased the demand for deepwater navigation. In 1916, Congress approved the extension of the Port Arthur Canal, and a 25-ft deep channel was completed to Beaumont. Subsequent dredging extended the

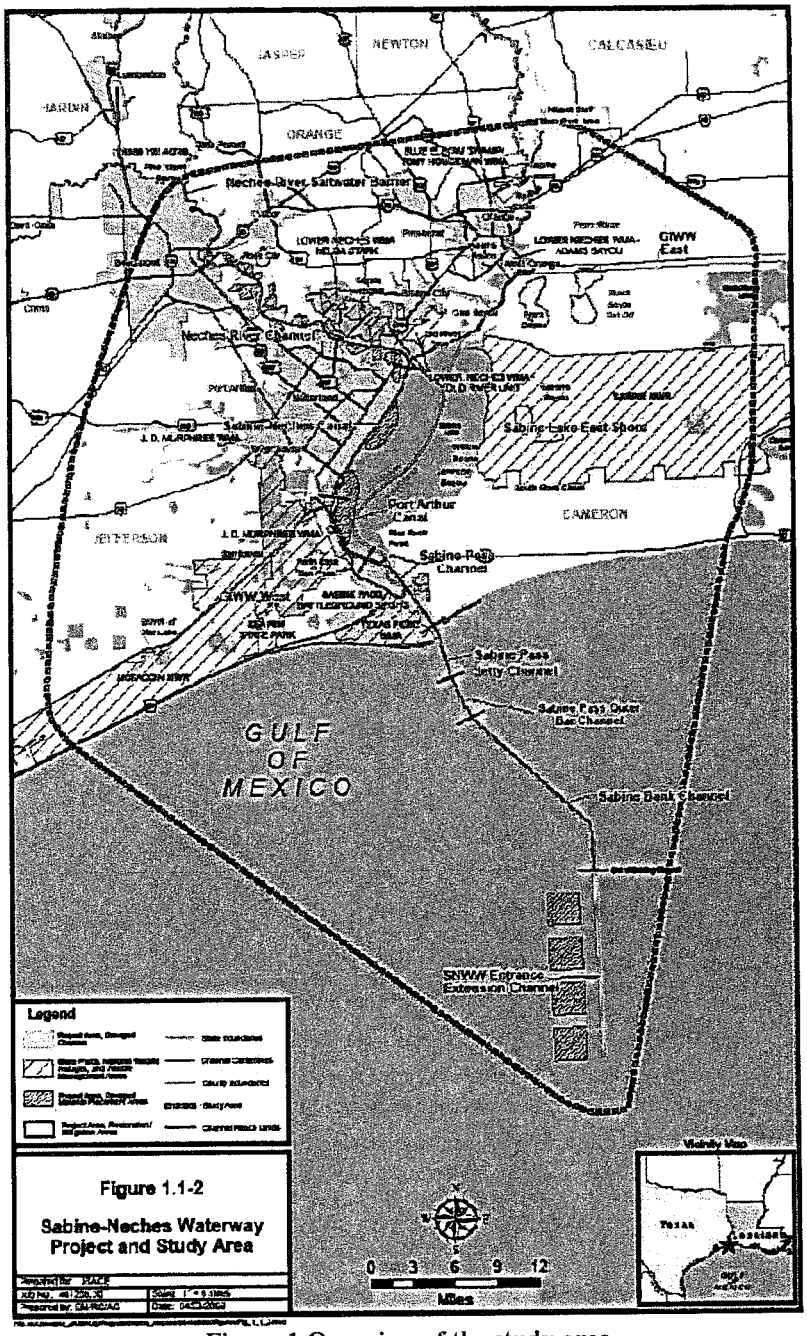

Figure 1 Overview of the study area

waterway to Orange, and by 1972, the present SNWW was complete to 40 X 400 ft (University of Texas 2001). The Gulf Intracoastal Waterway from Port Arthur westward to Galveston Bay was completed in 1943, providing another conduit for high salinity waters to enter previously fresh ecosystems, and interrupting sheetflows and flows of bayous, such as Taylor's Bayou in the project area. Today (2009), demand for increased volumes of petrochemicals to the Beaumont-Port Arthur petrochemical complex, the nation's third largest, is driving the demand for the current project to deepen and widen the channel. This project would allow chemical tankers in the 1,000-ton class to traverse the channel unlightered, thus providing the economic impetus to finance construction.

Proposed Alternatives for SNWW Deepening Project

Figure 1 shows the proposed project alignment, existing and proposed new terrestrial disposal areas, mitigation sites, outstanding designated natural areas, and beneficial use features. Shaded channel drawings illustrate proposed new dimensions.

Channel dimensions varying from 43 to 55 ft in depth were analyzed incrementally and in combination by Corps economists to determine feasibility. The selected (National Economic Development or NED) plan is as follows: 2

> Existing Gulf of Mexico Entrance Channel to Beaumont - deepen existing 64-mile channel from 42 to 48 ft within the existing widths, including 2 ft of advanced maintenance and 2 ft of overdepth throughout the waterway, with some isolated segments of additional advanced maintenance.
>
> Extend Gulf of Mexico Channel (13.2 miles) – extend the existing Gulf of Mexico portion of the Sabine-Neches Channel 13.2 miles to a depth of 48 feet, 2 ft of advanced maintenance and 2 ft of overdepth dredging.

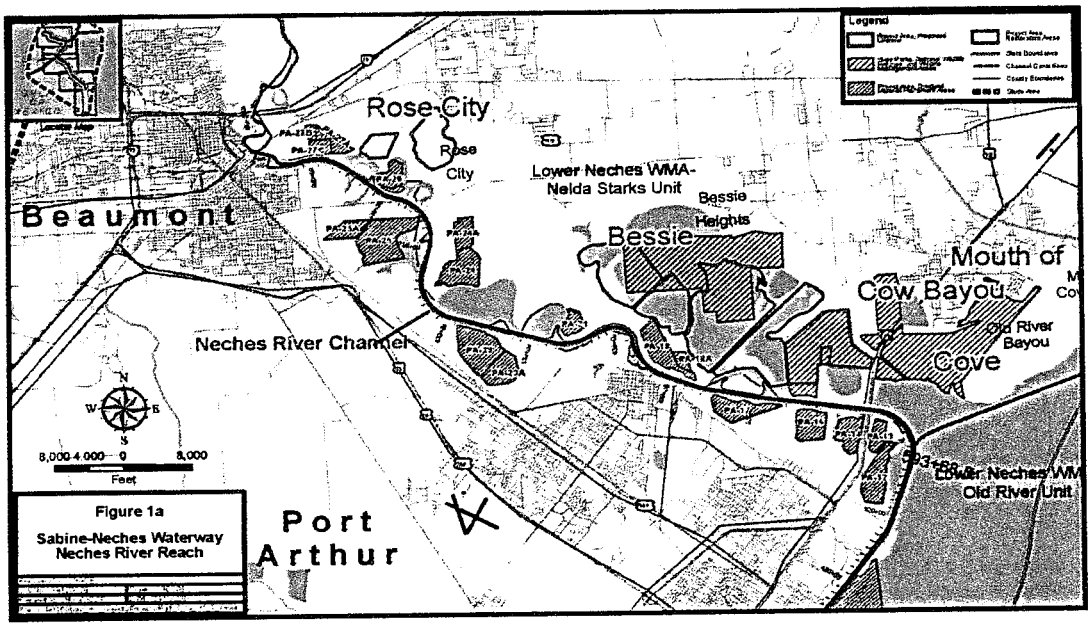

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Figure 2 Placement areas and beneficial use sites

Description of SNWW Study Area

The vegetative communities of southeast Texas and southwest Louisiana have been thoroughly described in several authoritative books and numerous technical articles, including O'Neil 1949, Blair 1950, Bezanson 2001, Harcombe and Neaville 1977, Smeins et al. 1991, TNHP 1993, Visser and Sasser 1998, Visser et al. 2000, Gosselink et al. 1979, and Chabreck 1972.

State and Federally-designated natural areas in the project area, important because of the large areas of native fish and wildlife habitat and recreational opportunities they represent as well as their inherent susceptibility to project-induced salinity changes, are shown and discussed as well. We summarize major community types in Texas and Louisiana, provide updated acreage

estimates, update recent changes to the current project and other channelization projects, and provide the U.S. Fish and Wildlife Service's recommendations as to project-related impacts and minimization measures.

Sabine Lake and Offshore Gulf of Mexico

At 69 sq miles of open water, Sabine Lake is the smallest of the six major Texas bay systems in both areas and volume. Its 6-ft average depth is similar to other Texas estuaries. However, its 289 sq miles of adjacent marshes composes the largest wetland system in Texas (Fisher et al. 1973). The region's high (55.8 in.) annual rainfall and two large river systems make it, on average, the freshest estuarine system in Texas. Average salinities, as verified by the TABS/MDS modeling effort for this project, ranges from fall lows of 3 parts per thousand (ppt) in the upper portion of the lake at median river flow to highs of 15 ppt in the lower lake. At low flow conditions (average of lowest 20 percent of historic flows), these salinities rise to 12 ppt in the upper lake and 21 ppt in the lower lake. Historic drought conditions have produced salinities in excess of 28 ppt in the lower lake.

Due to this dynamic salinity regime, Sabine Lake supports several rich and diverse fish, plankton, and invertebrate benthic communities. Heavy seasonal growths of both freshwater and marine phytoplankton, mostly diatoms (45 percent total biomass), along with the ubiquitous green algae (36 percent total biomass) occur and are heaviest in the summer (Espey, Huston and Associates 1976). Zooplankton is most abundant during summer and early fall, which is similar to what occurs in Galveston Bay but opposite from what is found in the more southerly and higher salinity mid- and lower coast bays. Copepods are by far the dominant species group (over 95 percent total biomass). Dominant infaunal benthic organisms consist of the *Rangia* clam, capitellid polychaetes, and *Tubificoides* oligochaetes (Vittor and Associates 1997).

Aquatic fauna has changed since the original manmade opening of Sabine Pass from a freshwater system similar to that currently present in the upper Neches and Sabine Rivers portions of the study area, to a saline/brackish system typical of Galveston Bay and other Texas estuaries. Important forage and predator fish are typified by alligator gar (*Lepisosteus spatula*), ladyfish (*Elops saurus*), finescale menhaden (*Brevoortia gunteri*), gizzard shad (*Dorosoma cepedianum*), bay anchovy (*Anchoa mitchilli*), river carpsucker (*Carpiodes carpio*), hardhead catfish (*Arius felis*), channel catfish (*Ictalurus punctatus*), Gulf killifish (*Fundulus grandis*), white bass (*Morone chrysops*), largemouth bass (*Micropterus punctulatus*), black crappie (*Pomoxis nigromaculatus*), crevalle jack (*Caranx hippos*), pigfish (*Orthopristis chrysoptera*), spotted seatrout (*Cynoscion nebulosus*), black drum (*Pogonias cromis*), striped mullet (*Mugil cephalus*), Spanish mackerel (*Scomberomorus maculates*), southern flounder (*Paralichthys lethostigma*),

and lizardfish (*Synodus foetens*). These species represent fresh, marine, and euryhaline assemblages. Commercial finfish harvest is insignificant at only an average of 2,186 pounds worth $1,385 annually. Recreational fish harvest is much more important, with an estimated 500,000 man-hours of fishing and is second only to Galveston Bay (Blackburn et al. 2001).

Important nektonic shellfish are blue crab (*Callinectes sapidus*), white shrimp (*Litopenaeus setiferus*), brown shrimp (*Farfantepenaeus aztecus*), and swamp crayfish (*Procambarus clarkii*). The Sabine Lake blue crab fishery accounts for almost 25 percent of the total Texas commercial landings, with over one million pounds landed annually, for a total value of $665,600 (Texas Parks and Wildlife Department 2007).

Mussel diversity and abundance has substantially declined due to increased salinities caused by ship channel construction, elevated turbidity levels, and hydrologic alterations from upstream reservoir operations (Howells et al. 1996).

Sabine Lake formerly had large, commercially harvested oyster beds. These have been reduced in recent years to Sabine Pass, extreme lower Sabine Lake, Keith Lake Fish Pass and immediately adjacent to Keith Lake. Oysters have not been commercially harvested since the late 1970s.

Calcasieu-Sabine Basin, LA

The Calcasieu-Sabine basin is the westernmost of the nine coastal hydrologic basins in Louisiana and comprises the western portion of Louisiana's Chenier Plain. It extends from just east of Calcasieu Lake to Sabine Lake, with the Gulf Intra-Coastal Waterway (GIWW) and Gulf of Mexico forming its northern and southern boundaries. The 630,000-acre Calcasieu-Sabine Basin contained 435,600 acres of coastal wetlands in 1932 (Louisiana Coastal Wetlands Conservation and Restoration Task Force 1993). The Sabine sub-basin includes the area from the western shoreline of Calcasieu Lake westward to Sabine Lake. The western half of the sub-basin is within the influence area of the SNWW.

The largest wetland problem in the basin is the conversion of marshes to open water as a result of human hydrologic alterations (channelization, levees) and natural causes (i.e., subsidence and wave action). Channelization for navigation canals causes saltwater intrusion into fresher intermediate and fresh marshes, which can result in vegetation die-off and conversion of marsh to open water. The Calcasieu-Sabine Basin lost over 122,000 acres (30 percent) of marsh from 1932 to 1990 (Dunbar et al. 1992). The 318,000-acre Sabine sub-basin (220,000 acres of marsh) lost over 84,000 acres of marsh (38.5 percent) since 1932 due to human-induced and natural causes. Another 38,400 acres of Calcasieu-Sabine Basin marshes (12.1 percent) are projected to be lost by 2050, for a total projected loss of 160,400 acres from 1932 to 2050 (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Vegetative Communities

Freshwater swamp and marsh --- Both freshwater swamp and freshwater marsh, often occurring in intermeshing context within large wetland tracts, occur in abundance within the northern half of the project area in both Texas and Louisiana. Table 1 gives approximate acreages of marsh and swamp types, broken down by drainage and habitat type.

Primary swamp type is cypress-tupelo swamp, which is characterized by common baldcypress (*Taxodium distichum*) and tupelo gum (*Nyssa aquatica*) overstory, and numerous aquatic understory species such as bulltongue (*Sagittaria lancifolia*), swamp lily (*Crinum americanum*), pickerel weed (*Pontederia cordata*), smartweed (*Polygonum sp.*), and blue iris (*Iris sp.*). Large tracts of cypress-tupelo swamp occur in permanently and semi-permanently flooded areas along the Neches River north of Interstate (I-) 10 and along the Sabine River north of I-10 and total approximately 16,798 acres in the extended study area (PBS&J 2003).

Swamp scrub and freshwater marsh are often intermixed within cypress-tupelo tracts, either in natural meander scars or in areas completely logged in the past which have not reforested. The 1,750-acre tract immediately east of downtown Beaumont and north of I-10 is a good example of an area crisscrossed by logging ("star") canals dug in the early 1900's for extraction of commercially valuable baldcypress, which has not yet completely reforested and remains in freshwater marsh/scrub-shrub. Primary plant species here are buttonbush (*Cephalanthus occidentalis*), rattlebean (*Sesbania drummondii*), box elder (*Acer negundo*), swamp privet (*Foresteria acuminata*), cattail (*Typha latifolia*), and Virginia tea (*Itea virginica*). Approximately 278 acres of shrub/scrub and 40,805 acres of freshwater marsh (mostly in Louisiana) are in the project area. Beneficial use areas at Rose City Marsh (project hydrologic unit TX3) will target freshwater marsh/scrub shrub habitat, although cypress-tupelo swamp should be the long term goal, due to its high productivity and recreational value to wetland users, primarily waterfowl hunters, fishermen, and birdwatchers.

Bottomland hardwood forest --- Higher, intermittently-flooded strips of land immediately adjacent to the riverine ridge and to meander lakes (oxbows) are often forested by mature bottomland hardwood forest. The largest tracts are at the extreme upper end of the project area, just south of the Neches River saltwater barrier (Figure 1), and along the Sabine River north of I-10, within Sabine Wildlife Management Area (600+ acres). PBS&J (2003) estimated total acreage of this habitat type within the immediate project area at only 323 acres, but approximately 8,664 acres lie within the extended study area. Bottomland hardwood forest has long been identified as one of the most productive habitat types for wildlife in North America, often harboring up to four times the density and diversity of bird, mammal, and herpetofauna species of upland forests. More recently, bottomland hardwood forests in the northern Gulf of Mexico region have been identified as critical fall and spring migrant stopover habitat for huge numbers, perhaps the majority, of the more than 130 species of North America's neotropical migrant songbirds (Gauthreaux 1971).

Intermediate marsh --- This marsh type is located between brackish and fresh marsh. Intermediate marsh has an irregular tidal regime, is oligohaline, and is dominated by narrow-leaved, persistent species such as marshhay cordgrass (*Spartina patens*). Plant diversity and soil organic matter content is higher than in brackish or saline marshes. This marsh is characterized by a diversity of species, many of which are also found in freshwater and brackish marshes. Characteristic species include roseau cane (*Phragmites australis*), bulltongue (*Sagittaria lancifolia*), coastal water hyssop (*Bacopa monnieri*), spikesedge (*Eleocharis* spp.), Olney's bulrush (*Schoenoplectus americanus*), California bulrush (*Schoenoplectus californicus*), American bulrush (*Schoenoplectus pungens*), saltmarsh bulrush (*Bulboschoenus robustus*), deer pea (*Vigna luteola*), seashore paspalum (*Paspalum vaginatum*), switch grass (*Panicum virgatum*), bearded sprangletop (*Leptochloa fascicularis*), camphor-weed (*Pluchea camphorata*), Walter's millet (*Echinochloa walteri*), fragrant flatsedge (*Cyperus odoratus*), alligator weed (*Alternanthera philoxeroides*), southern naiad (*Najas guadalupe*nsis), big cordgrass (*Spartina cynosuroides*), and gulf cordgrass (*S. spartina*e). Two other major autotrophic groups in intermediate marsh are epiphytic and benthic algae. Intermediate marsh occupies the least acreage of any of the four marsh types. Salinity averages about 3.3 ppt. This marsh type is very productive of many species of wildlife and is important to larval and postlarval marine organisms. This marsh community may change to either fresh or brackish marsh if salinity shifts. An estimated 172,853 acres of intermediate marsh occurs within the project study area (included in project hydrologic units).

Brackish marsh --- This wetland area located between the high-salinity saline marshes near the Gulf of Mexico and the intermediate areas further removed from the Gulf constitutes an estimated 62,000 acres, or 37 percent, of the 169,321 acres of "estuarine" wetland study area. Brackish marsh is generally considered "slightly salty"; with salinity levels varying over a wide range from location to location. In coastal Louisiana and Texas, the typical brackish marsh vegetation pattern occurs in areas within approximately the 4 to 15 ppt normal salinity range. Common, usually dominant, vegetation in these areas is saltmarsh bulrush (*Bulboschoenus robustus*), seashore saltgrass (*Distichlis spicata*), marshhay cordgrass (*Spartina patens*), dwarf spikerush (*Eleocharis parvula*), waterhemp (*Amaranthus australis*), and marsh pea (*Vigna luteola*). Large tracts of brackish marsh occur in the (formerly fresh) lower Neches River basin, on both the J.D. Murphree Wildlife Management Area (WMA) and McFaddin National Wildlife Refuge (NWR) south of the GIWW and north of State Highway (SH) 87, and on the Sabine NWR east of Sabine Lake. Brackish marsh areas have cyclically high waterfowl populations, especially in years following high-salinity events when freshwater levels return to normal and periodic "blooms" of prime food plants such as widgeongrass (*Ruppia maritima*) and *Paspalum* sp. occur. Furbearers such as muskrat, formerly an important commercially-harvested animal in the project area, also occur in cyclically high numbers. Brackish marshes have suffered some of the highest rates of marsh loss due to subsidence and loss of organic materials as formerly fresh areas are subjected to salinity intrusion, resulting in plant loss.

Saline marsh --- Salt marsh covers an estimated 9,845 acres within the project area, largely along the Gulf shorelines and adjacent to Sabine Pass, lower Sabine Lake, the GIWW nearest the SNWW and some areas in the lower Neches River. Dominant plants in the salt marsh are smooth cordgrass (*Spartina alterniflora*), seashore saltgrass, blackrush (*Juncus romerianus*), saltmarsh aster (*Aster tenuifolius*), and glasswort (*Salicornia* sp.). Gulf coastal salt marshes are often almost exclusively smooth cordgrass-dominated and comprise important marine nursery habitat, probably due to its ready access to estuaries, though wildlife populations are less diverse than in nearby intermediate and freshwater marshes.

Table 1 Acreages of major wetland types in SNWW project area (modified by USFWS from PBS&J 2003)

Wetland type	**Ac. within 5,000 ft. of SNWW, tributary Channels, and Sabine Lake**	**Ac. within major study area**
Bottomland hardwood and scrub	975	4,862
Estuarine (saline and brackish) marsh	13,530	169,321
Fresh marsh	13,812	146,417
Aquatic beds, fresh or estuarine	404	4,433
Cypress or cypress-tupelo swamp	1,110	3,265
Open water	35,182	206,894
TOTAL	**65,013**	**535,192**

4

Fish and Wildlife Resources

Fish and Shellfish --- Project-area marshes and associated open-water habitats provide important habitat (i.e., nursery, escape cover, feeding grounds) for a variety of freshwater and estuarine-dependent fish and shellfish. Most of the economically important saltwater fishes and crustaceans harvested in Louisiana spawn offshore and then use estuarine areas for nursery habitat (Herke 1995). Nekton use of estuaries is largely governed by the seasons (Day et al. 1989). Different species use the same locations in different seasons, and different life stages of the same species use different locations. Aquatic species diversity peaks in the spring and summer, and is typically low in the winter. Some marine species which use estuaries as nursery habitat also have estuarine dependent life stages, typically larvae and juveniles. Larvae or juveniles immigrate into the project area during incoming tides and take advantage of the high productivity of the estuary.

Species typical of low-salinity areas include largemouth bass (*Micropterus salmoides*), crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), gar (*Lepisosteus spatula*), and blue catfish (*Ictalurus furcatus*). Species found in higher salinity areas, such as the project area, include Atlantic croaker (*Micropogonias undulates*), Gulf menhaden (*Brevoortia patronus*), bay anchovy (*Anchoa mitchilli*), red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*), southern flounder (*Paralichthys lethostigma*), blue crab (*Callinectes sapidus*), Gulf stone crab (*Menippe adina*), brown shrimp (*Penaeus aztecus*), and white shrimp (*Penaeus setiferus*) (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Waterfowl --- Southeast Texas (Jefferson and Orange Counties) and southwest Louisiana (Cameron Parish) contain some of the most important and heavily utilized waterfowl habitats remaining on the Gulf coast, with many of these areas located adjacent to or a short distance from the SNWW. Important Texas habitat tracts are located within Texas Point NWR, McFaddin NWR, J. D. Murphree WMA, and on privately owned marsh and swamp tracts along the Neches River. Important Louisiana tracts are located within Sabine NWR east of Sabine Lake, the Cameron Prairie NWR east of Calcasieu Lake and Rockefeller State Wildlife Refuge at Grand Chenier. More detailed descriptions of these publicly-owned refuges are provided in the *Protected (State and Federal) Natural Sites in Project Area* section of this report.

Waterfowl use and economic impacts from hunting and outdoor-related activities in the immediate project area are impressive. The U. S. Fish and Wildlife Service's Mid-Winter Waterfowl Census numbers for 2004-2005 were very low compared to previous years, probably due to high-salinity marsh conditions. January 2005 flight lines over McFaddin NWR and Texas Point NWR counted 27,964 geese and 12,688 ducks. Peak 2005 estimates for Sabine NWR were 125,000 geese and 200,000 ducks (McFaddin/Sea Rim NWR files). McFaddin NWR hosted 1,470 hunter-days who harvested 3,694 ducks and 76 geese during the 2005-2006 season. Texas Point NWR hosted 338 hunter-days who took 501 ducks and 28 geese during the 2005-2006 season. J.D. Murphree WMA hosted 1,997 hunter-days taking 5,014 ducks and 93 geese for the 2005-2006 season. The 2.5 birds per hunter-day was one of the highest ratios of any Texas public hunting area. Sabine and Cameron Prairie NWRs did not have recent hunting statistics readily available, but did have 2006 waterfowl survey data. Cameron Prairie NWR flight(s) during January 2006 counted 63,198 ducks, and Sabine NWR flight(s) counted 143,455. Total southwest Louisiana refuge flight(s), which include Lacassine NWR (58 miles east of Sabine Lake) counted an impressive 523,454 ducks, an almost 100 percent increase over January 2005 counts and indicative of the improving conditions in coastal marshes following Hurricane Rita in September 2005. The (small) Sabine Island WMA hosted 114 hunter-days during 2005-2006, taking "approximately" 50 ducks (Robinette 2007). Numerous waterfowl guides in Texas and Louisiana host hunters on private marshes, rice fields, and coastal marshes in the Jefferson County/Cameron Parish area. Private lands hunters almost certainly account for more hunting days and greater harvest than those on public areas.

The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (USDOI 2003) show hunter participation and expenditures by state, but not by county or region. In 2001, 1.2 million hunters in Texas (both resident and non-resident) spent 14.2 million days afield and an estimated $1.5 billion. Of these, approximately 500,000 hunters, or 42 percent, hunted migratory birds, primarily waterfowl. While these statistics are not compiled by county, a large proportion of waterfowl hunters have historically used the marshes within the SNWW project area.

Cameron Parish, Louisiana is one of the most popular waterfowl hunting regions of the U.S., both in terms of numbers of hunters and hunter success. In 2001, an estimated 333,000 Louisiana hunters spent approximately $446 million. Approximately 144,000 or 44 percent of these were migratory bird hunters, and of these, a sizeable proportion hunted in Cameron Parish.

Colonial Waterbirds---Twenty-three species of cormorant, pelican, heron, egret, spoonbill, gull, tern, and skimmer regularly nest in large numbers along the Texas and Louisiana coasts, frequently on bay islands, both natural and manmade. In recent years, the majority of successful

Texas colonies have been located on islands wholly or partially maintained by dredged material (Glass 1994). Colonial waterbirds are an important wildlife resource on the Gulf Coast and in the project area because of their abundance (an estimated 2,835 nesting pairs annually since 1995 in the project area), their economic significance to the tourism industry, and their status as indicators of aquatic ecosystem health. Since 1973, the Texas Colonial Waterbird Society has conducted annual censuses of all coastal Texas colonies and maintains a comprehensive database which provides annual census numbers and colony locations (TCWC 2006).

While locations of most important Texas colonies are on small offshore islands (TCWC 2006), most of those in the SNWW project area are in semi-protected industrial sites and other semi-urban sites. Sydney Island, a formerly important nesting island in upper Sabine Lake, has become inactive in recent years, probably due to predator invasion (Bailey, personal communication).

Regional waterbird population trends are a more accurate picture of waterbird population health than comparing individual colony counts from specific years, since nesting populations are known to shift frequently in response to predation, habitat conditions, parasite levels, and human disturbance. For purposes of comparison, Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana are considered the project area, and county (parish) dimensions are probably appropriate considering known waterbird home ranges and habitat use (Custer et al. 1978). In 2005, Jefferson and Orange Counties contained 10 known colonies with a total estimated population of 8,462 nesting pairs belonging to 13 species. Only one species of gull or tern was present, in comparison to Galveston Bay, where most years the laughing gull comprises over 50 percent of the nesting pairs (TCWC 2006). Most of the nesting birds belong to the heron, egret and ibis families, which are important components of freshwater marsh and swamp systems.

Nearby coastal Louisiana, while replete with excellent wading bird and other waterbird habitat (124,511 marsh acres in Sabine NWR alone), is devoid of even mid-sized (100 nesting pairs or greater) colony sites. Because we do not have a yearly coastal Louisiana dataset comparable to the TCWC, we used the May/June 2000 USGS colonial waterbird flight survey summary (Michot et al. 2004). This survey, conducted by Federal and state wildlife personnel at infrequent intervals since 1980, located only two small colonies totaling an estimated 106 nesting pairs belonging to four species. Waterbird experts have long concluded that successful nesting habitat must be geographically isolated and free from land-based predators (Soots and Landin 1978).

Because of the lack of large, multi-species waterbird colonies within huge habitat tracts in the project area, it seems logical that new, well-protected and managed offshore islands would be utilized by nesting colonial waterbirds. Recent experience in Galveston, Matagorda, Corpus Christi, and Nueces Bays supports this supposition.

Protected (State and Federal) Natural Sites in Project Area

The unique geographic location of the project study area at the confluence of the Central and Mississippi migratory bird flyways and its inherent natural diversity is reflected in the fact that six major state or Federally-protected parks and refuges are located here. Figures 3 and 4 show these protected areas. This list does not include private, city, or county parks and refuges.

McFaddin National Wildlife Refuge --- This 55,000-acre U.S. Fish and Wildlife Service (Service) refuge was established in 1980 and contains the largest tracts of coastal freshwater marsh remaining in Texas. The 5,400-acre White Marsh tract was added in 2000. Most of McFaddin NWR is saline to brackish marsh. It was probably was a freshwater marsh prior to GIWW construction in the 1940's and erosion and subsidence in the 1970's. Large freshwater areas still exist in interior areas west of Clam Lake (Figure 2). McFaddin NWR hosts approximately 10,000 visitors annually, including 2,400 annual hunter-days of waterfowl hunting. The degradation of SH 87 along the coastline during a 1993 hurricane has reduced visitation.

Texas Point National Wildlife Refuge --- Managed as a unit of McFaddin NWR, this 8,900-acre tract lies entirely between the Gulf of Mexico beach and SH 87 and to the west of Sabine Pass. It is almost entirely saline marsh, brackish marsh, and moist saline (*Spartina patens* or marsh hay) prairie. The small brackish to saline lakes and large marsh hay meadows attract seasonally large duck and goose populations. SNWW project hydrologic unit TX-8 (Figure 1) is entirely within Texas Point NWR.

Sea Rim State Park --- This Texas Parks and Wildlife Department (TPWD)-administered, 4,141-acre tract lies south and east of McFaddin NWR. The headquarters is located and most visitations occur within the 5.2-mile long Gulf beach frontage tract located to the south of SH 87. This state park contains important beach dune, backdune marsh and prairie, and freshwater wetlands and is especially important as spring neotropic migrant songbird and waterbird habitat due to its location. Dedicated in 1977, it has been closed awaiting repairs since Hurricane Rita in September 2005.

J.D. Murphree Wildlife Management Area --- This State of Texas WMA is composed of three separate tracts (Big Hill, Hillebrandt, and Lost Lake Units) totaling 24,250 acres lying east of McFaddin NWR and on both the north and south sides of the GIWW. It was purchased from the McFaddin family in 1950. The fresh, intermediate, and brackish marshes of this WMA are some of the most important migrant and stopover habitat in the Central Flyway and host upwards of 50,000 ducks per year. Some marsh tracts are managed to maintain intermediate to freshwater marsh characteristics optimum for waterfowl. Round Lake, a 500-acre natural lake within a protective levee system constructed in the 1960s when salinity intrusion first became a serious problem, contains some of the highest-quality freshwater aquatic habitat remaining on the upper Texas coast. Large flocks of canvasback (*Aythya valisneria*) traditionally use this area on a seasonal basis (Sutherlin 1996). J.D. Murphree is in project hydrological units TX-7 and TX-9.

Lower Neches Wildlife Management Area --- The 7,998-acre Nelda Starks Unit and the Old River Unit are located along the Neches River north of the SH 87 (Rainbow) bridge, immediately north of the confluence of the Neches River and Sabine Lake. These brackish marshes have suffered considerable losses, accelerated during the 1960s from land subsidence and salinity intrusion into formerly freshwater systems. Two projects at Bessie Heights have restored over 250 acres of subsided open water habitat back to emergent marsh, a hopeful sign that this trend is being reversed. The WMA is in project hydrological unit TX-10.

Sabine Island Wildlife Area – This 8,743-acre unit is on the east side of the lower Sabine River, just upstream from IH-10 and the GIWW. It is managed by the Louisiana Department of Wildlife & Fisheries. It is heavily forested with primarily cypress-tupelo swamp intermixed with

pine-hardwood ridges and oak-hickory-pecan bottomland forest. Numerous creeks, sloughs, and backwater swamps cross the area. As with all the forested portions of the project area, it provides invaluable spring stopover habitat for neotropical migrant songbirds. It lies within project hydrological unit LA-/TX-1.

Sabine National Wildlife Refuge --- This huge (124,511-acre) Louisiana refuge lies immediately east of Sabine Lake. It is important to the project due to its large size, wetland diversity, and its potential for protecting the sensitive intermediate marsh systems located within one mile of the eastern Sabine Lake shoreline from the negative impacts of increased salinities (see *Project Impacts* chapter). An interesting portion of the refuge is Sabine Pool #3, a 26,000-acre, leveed impoundment which is managed to support entirely freshwater marshes. The type of fresh marsh system enclosed within the completely leveed Sabine Pool #3, with its inherent high diversity of aquatic plants and bird life, would have been much more widespread in the project area before the SNWW and GIWW intruded into these systems.

Sabine NWR is comprised of seven management units containing fresh, intermediate, brackish, and saline marsh. Hydrologic management on the refuge is focused primarily on controlling salinity and minimizing tidal fluctuations through the construction and operation of levees, weirs, and gated structures. Managers strive to achieve a balance between reducing wetland plant waterlogging and saltwater intrusion stresses, and providing access for estuarine fish and shellfish organisms to interior marshes during critical life-cycle events.

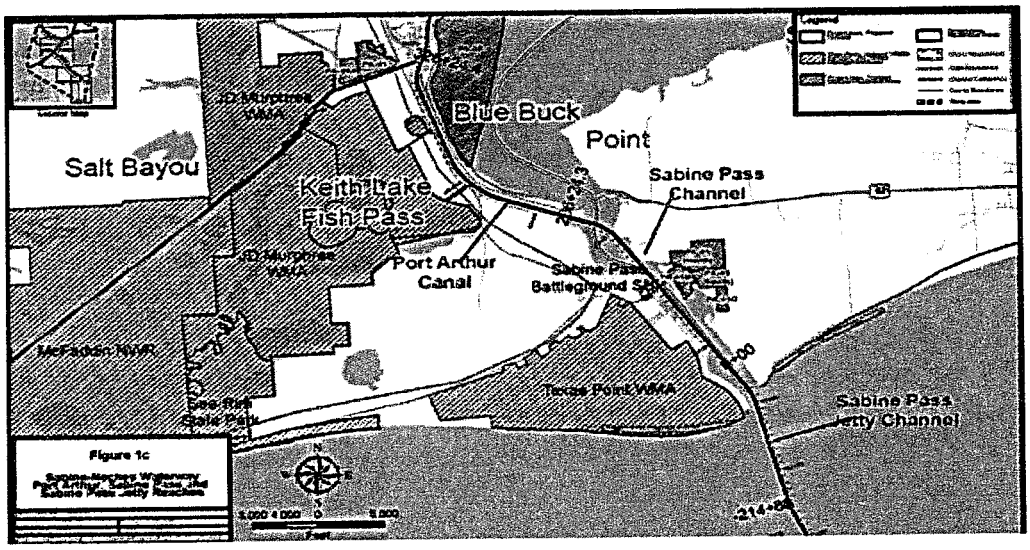

Figure 3 Federal and State protected areas within study area – Sabine Pass

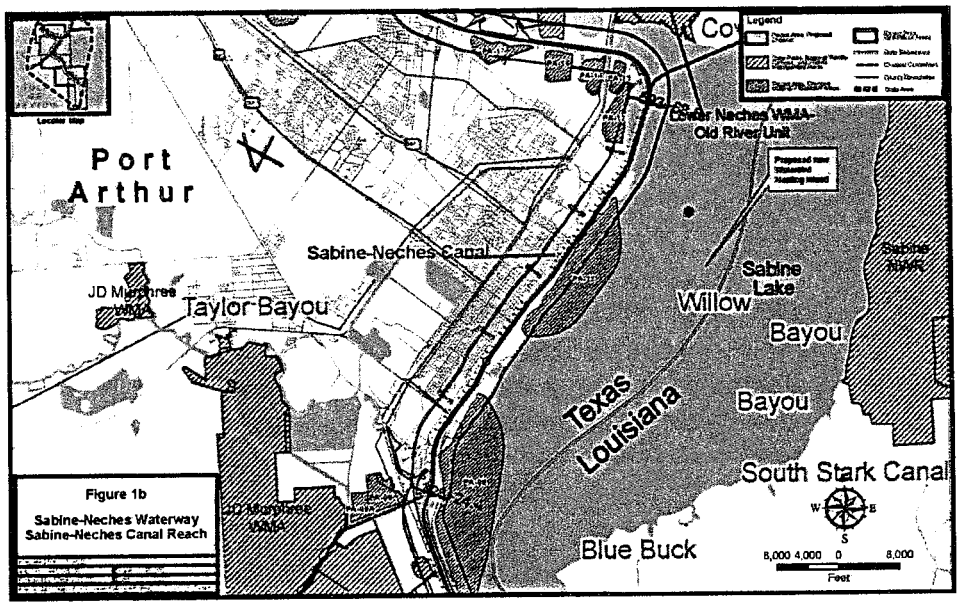

Figure 4 Federal and State protected areas within study area – Mid Sabine Lake

Existing SNWW Disposal Areas

Thirteen (13) existing, designated, or proposed dredged material disposal areas lie alongside the 67-mile SNWW right-of-way (Figure 1). Habitat within these areas ranges from offshore Gulf of Mexico marine habitat (disposal areas (DA) 1-4), high-quality intermediate marsh (DA 16A), relatively undisturbed *Spartina patens* wet meadow (DA 14A), leveed scrub-shrub partially wetland community (DA 23A), and several previously used, wholly or partially-leveed sites with somewhat disturbed upland and wetland communities (DAs 24A, 26, 27A, 27C, and 27D).

Disposal areas 1-4 lie four to 30 miles offshore to the west of the SNWW channel. Dredged material has been placed in these areas repeatedly during the past 40 years. However, winnowing and ocean currents tend to redistribute placed sediments, and bottom composition ranges from coarse sands to soft muds. Typical bottom invertebrate communities consist of *Polychaete* and *Oligochaete* worms, clams (*Mercenaria sp.*), arks (*Anadara sp.*), sand dollar (*Mellita quinquiesperforata*), brittle stars (*Hemipholis sp.*), blue crab (*Callinectes sapidus*), and box crab (*Calappa sulcata*). Nektonic invertebrates include white shrimp (*Litopenaeus setiferus*), brown shrimp (*Farfantepenaeus aztecus*), and peppermint shrimp (*Lysmanta wurdemannta*). Important and common fish are Gulf trout (*Cynoscion nothus*), Lane snapper (*Lutjanus synagris*), Spanish mackerel (*Scomberomorus maculatus*), and cobia (*Rachycentron canadum*).

Dominant wetland plants in intermediate marsh sites such as at DA 16A are salt-marsh bulrush, Olney's bulrush (*Schoenoplectus americanus*), California bulrush (*Schoenoplectus californicus*), black needlerush (*Juncus roemerianus*), marsh-hay cordgrass (*Spartina patens*), *Paspalum vaginatum*, narrow-leaf cattail (*Typha angustifolia*) and widgeon-grass (*Ruppia maritima*). These dominants and the circulation pattern and elevation are indicative of relatively undisturbed high-quality intermediate marsh. As such, this area provides excellent wetland habitat for furbearing mammals, native reptiles, resident waterbirds, and migrant waterfowl, in addition to providing nursery habitat and detrital input for marine fisheries. 6

Wet shrub/scrub communities, such as at DA 14, are of mixed successional states, indicating altered and fluctuating water regimes. Typical understory plants include ferns, common reed (*Juncus sp.)*, California bulrush (*Schoenoplectus californicus*), frogfruit (*Phyla lanceolata*), blackberry (*Rubus sp.*), and *Aster* sp. The lack of large open-water areas or natural circulation patterns and the dense thicket-like forest structure inhibit this site's value for native wildlife. However, it has potential for management and contains some native wildlife habitat values for mid-story songbirds such as *Empidonax* flycatcher, cardinal, yellow-rumped warbler, and common blackbird, and small numbers of waterfowl such as wood duck.

Methods of Study

Project Area Wetland Analysis

Early in project planning, Service biologists delineated and quantified wetland communities adjacent to the SNWW channel and mapped tributaries, including relatively small creeks and sloughs, which could serve as conduits for salinity intrusion into sensitive aquatic communities. This information can be used to measure future impacts from salinity increases into fresh or intermediate systems, after hydrodynamic/salinity modeling results became available. It can also be used to identify potential wetland impacts from channel enlargement and potential sites of salinity intrusion that would need to be corrected or mitigated.

Corps of Engineers Hydrodynamic/Salinity Model

The SNWW project presented a complicated and difficult set of conditions for estimating project-related impacts to fish and wildlife resources and to wetland communities. The potentially affected ecosystem is huge, complex (both in terms of its hydrology and its biology), and interconnected. Within the 1,035,154-acre vegetated portion (including agricultural lands) of the study area (Table 1), six major wetland types (including special aquatic sites such as beaches) total 706,632 acres or approximately 68 percent of all lands exclusive of development (PBS&J 2003). Wetlands and special aquatic sites can be categorized into six major vegetative community types (Table 1).

Six major hydrological features in the project area potentially allow high-salinity Gulf of Mexico waters to enter ecologically sensitive ecosystems: Sabine Pass, Sabine-Neches and Port Arthur Canals, Gulf Intracoastal Waterway, Sabine River, Neches River, and Sabine Lake (Figure 1).

The entire SNWW system exhibits complex circulation and salinity patterns. This is due to the two large and numerous small freshwater rivers and tributary streams, the huge storage basins (including the 43,978-acre Sabine Lake, the 11,363-acre Bessie Heights Marsh, and the 5,817acre Rose City basin) which serve as salinity-retention basins, the numerous smaller circulation channels into adjacent ecosystems, the deep manmade canal systems, and the large active tidal pass (Sabine Pass).

Because of these factors, the Interagency Coordination Team (ICT) determined that a state-of-the-art numerical model calculating salinity and hydrodynamic changes from channel modifications would be necessary to estimate project impacts. The TABS-MDS model was extensively modified from its original format, the RMA 10 model by Resource Management Associates (King 1993), to compute hydrodynamics, salinity transport, and sediment transport for alterations to large-scale waterways from navigation projects such as the Houston-Galveston Navigation Channels, Texas. The TABS-MDS Hydrodynamic/Salinity Model (HS) was used to predict salinity changes for each project hydrological unit.

The ICT utilized the model to develop the present, future without project, and future with project salinity scenarios essential for the predictive Wetland Values Assessment (WVA) methodology. Because WVA methodology incorporates salinity changes in assessing habitat quality, it is appropriate for this project, because salinity impacts to important freshwater systems upstream from channel enlargement are considered among the most serious potential project impacts.

The project area "profile" incorporated into the TABS/MDS model matrix included 15 hydrologic sampling stations, which were sampled for the nine-month period from January to September 2002, and 38 H/S model nodes, or mathematical model calculation "output" points. The physical sampling stations were at: 1) Pine Island Bayou, 2) Neches River at Rose City, 3) Neches River at Bessie Heights, 4) Mouth of Sabine River at GIWW, 5) Sabine River at I-10 bridge, 6) Pleasure Island MLK bridge, 7) Texas Point, 8) upper Sabine Lake at Black Bayou, 9) lower Sabine Lake at Buck Point, 10) Black Bayou at East Pass, 11) Black Bayou at GIWW, 12) Star Lake at GIWW, 13) Johnson's Bayou inside mouth, 14) Keith Lake Fish Pass, and 15) Willow Bayou inside mouth. The planned offshore Gulf of Mexico sensor was not deployed due to sea conditions, but background Gulf data was readily available from NOAA sources.
The 38 H/S model "output" nodes ranged from the Neches River Saltwater Barrier south to Johnson's Bayou in Louisiana, and included Cow Bayou, Adams Bayou, Black Bayou, the GIWW west to Taylor's Bayou and east to Black Bayou and 14 stations in the vast, and potentially sensitive, marsh tracts east of Sabine Lake. This frequency of model "output" nodes allowed the ICT to refine estimates of salinity changes to relatively small aquatic habitat tracts.

Changes to salinity were incorporated into habitat productivity change calculations for each of the three aquatic habitat types as one of five variables, with salinity negatively affecting productivity, thus accelerating interior marsh loss. Since the TABS-MDS code was designed to measure alterations to salinity from channel modifications, it was considered the best tool to use for the present project. Other models were considered, including the Sabine Basin-Calcasieu Ship Channel Hydrodynamic Model developed by Dr. Ehab Meselhe of the University of Louisiana-Lafayette. However, the TABS-MDS model as developed by Corps' Engineer Research and Development Center (ERDC-WES) was considered the most sensitive and appropriate.

Sea Level Rise

Sea level rise in the Sabine Neches estuary systems is very uncertain. In the fall of 2008, the Corps began to incorporate relative sea level rise (RSLR) into the SNWW HS modeling. This report used "most likely" scenarios of 0.5 meter, 1.0 meter and 1.5 meters over a 100 year period for possible changes for projects. The National Research Council (NRC) committee recommended that these rates be revisited every decade to incorporate additional data. The 2008

modeling efforts used the NRC II curve as it presented the most likely sea level rise changes for the project (Table 2).

On July 1, 2009, the Corps issued new guidance that requires that relative sea level rise changes be incorporated into all Corps coastal activities. In addition, the Corps reviewed sea level rise predictions suggested by the Intergovernmental Panel on Climate Change (IPCC 2007). The IPCC 2007 report assumes sea level rise on the premise that thermal expansion contributes to 70-75 percent of the rise. Should the ice sheets in Greenland and Antarctica melt faster than the current rate, these sea level projections will be obsolete. Table 2 illustrates predicted sea level rise by the NRC and the IPCC.

Table 2 National Research Council and Intergovernmental Panel on Climate Change rates of sea level rise

Eustatic Sea Level Rise Estimates	50 years	100 years
Existing rate	60 mm (1.2 mm/yr)	120 mm (1.2 mm/yr)
NRC I	130 mm (2.6 mm/yr)	400 mm (4.0 mm/yr)
NRC II NRC III	225 mm (4.5 mm/yr) 322.5 mm (6.45 mm/yr)	780 mm (7.8 mm/yr) 1125 mm (11.25 mm/yr)
IPCC AR4 - Scenario B1: lower end of range	90 mm (1.8 mm/yr)	180 mm (1.8 mm/yr)
IPCC AR4 - Scenario A1B: mid range of all scenarios	190 mm (3.8 mm/yr)	380 mm (3.8 mm/yr)
IPCC AR4 - Scenario A1F1: high end of range	295 mm (5.9 mm/yr)	590 mm (5.9 mm/yr)

(Corps 2009b)

Under these new guidelines, several changes were made to the existing Wetland Value Assessment (WVA) model (discussed in the next section) to account for RSLR. Shoreline recession, interior marsh loss, salinity, marsh edge, percent shallow water and depth and duration of tidal flooding data were all incorporated into the model. For a full discussion of the variables, see USACE 2009a.

After further consideration, the Corps used a 1.1 foot RSLR as a most likely scenario. After the model had been run with the additional parameters and variables, results showed that swamps and bottomland hardwoods within the project area would experience an increase in depth and duration of tidal flooding as well as the substrate being exposed at low tide and longer seasonally. Additionally, the model showed that marsh elevation would maintain equilibrium with rising sea level and the interior marshes would not be submerged. Further, results showed that in Texas 86 acres of fresh marsh would be converted to upland and almost 39,000 acres would experience lower productivity and higher land loss rates from the indirect effects of increased salinity. Future without project (FWOP) land loss would increase from 7.5 percent to 8.2 percent through Time Year (TY) 65 and there would be a net loss of 412 Annual Average Habitat Units (AAHUs). In Louisiana, there would be no direct impacts to oyster reefs. Indirect impacts of higher salinity over 182,000 acres would result in lower productivity and higher land

loss. The FWOP land loss through TY 65 would increase from 10.5 percent to 11.5 percent and there would be a net loss of 1,709 AAHUs.

Wetland Value Assessment (WVA) Ecological Model(s)

The Wetland Values Assessment (WVA) methodology was developed in the early 1990's in Louisiana for assessment and rating of wetland restoration projects by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Environmental Work Group interagency team. The WVA methodology (USFWS 2002a and 2002b) was considered appropriate for SNWW project analysis by the ICT because it incorporates large-scale measurements of predicted changes to salinity and vegetation of coastal Louisiana habitats identical to those of the project area. The WVA methodology has been certified by the Corps for use in the ecological evaluation of the SNWW project and is currently under review for acceptance nationwide as an evaluation model to evaluate the impacts and benefits of Corps public works projects.

The WVA methodology requires predictions within model units, including predictions of future changes to land loss rates. Therefore, the interagency team determined historic land loss rates for each wetland habitat type within each project hydrologic unit by GIS comparison of historic aerials from the past 20 to 25 years. From this, FWOP land loss rates, then a FWP (future with project) land loss rate and projected historical rates over the 50-year project life were established using the Productivity-based Land Loss Increase Method modified from Visser et al. 2004a and 2004b. This salinity-effect information was then used in the WVA models (USFWS 2002b) by marsh habitat type. This method is based on a direct linear correlation between decreased primary productivity due to salinity increases with increased land losses due to the project. There was some concern, based on knowledge of specific Louisiana coastal marsh tracts for which detailed historic information was available, that Visser's methods might underestimate losses when salinities exceed "optimal" ranges for a particular marsh type. However the interagency evaluation group agreed to use the Visser productivity method because it was science based. Tables 3 and 4 show the estimated salinity changes and habitat losses for the Texas and Louisiana hydrologic units, respectively. The Corps and the ICT members agreed early in project planning that habitat losses should be tabulated and mitigated, if required, independently for Texas and Louisiana resources (Tables 3 and 4). Figure 5 shows locations of the HU's. Numbering proceeds generally from north to south.

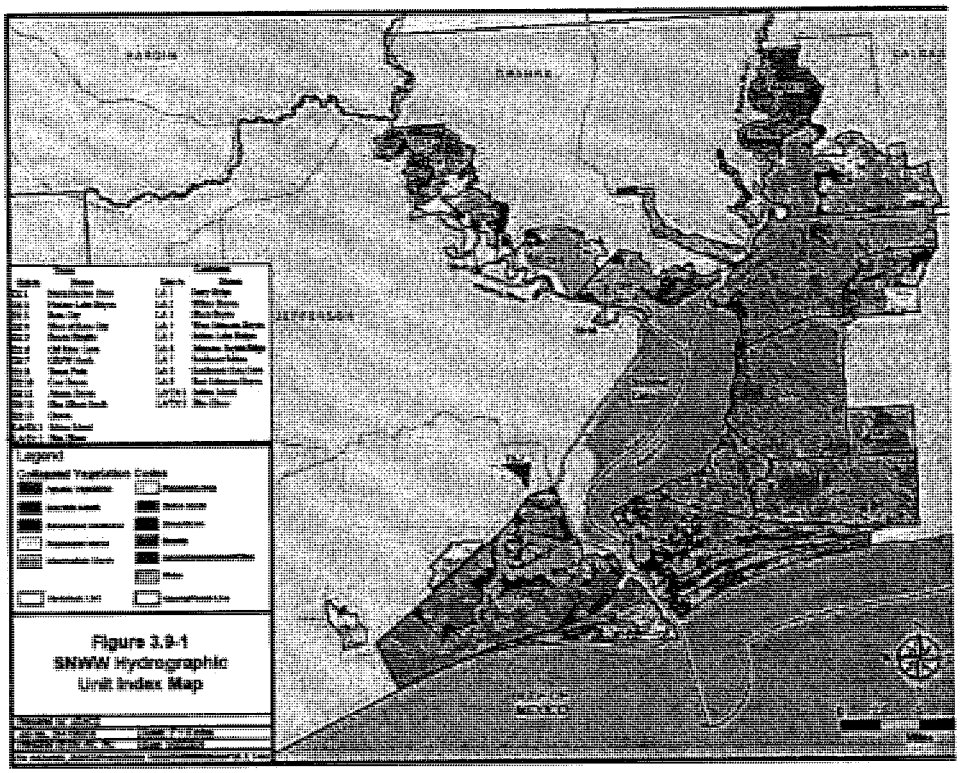

Figure 5 Hydrologic Unit Locations

In July 2009, the Corps received new compliance items to be incorporated into the both the HS and WVA models. RSLR and fresh water inflows were to be integrated into both models. The WVA model assessment was performed to comply with the new Corps model certification regulations.

The WVA methodology incorporates seven community habitats: 1) fresh/intermediate marsh, 2) brackish marsh, 3) saline marsh, 4) bottomland hardwood forest, 5) barrier headland, 6) freshwater swamp, and 7) coastal Chenier/ridge. The three marsh models, the freshwater swamp model, and the bottomland hardwood model were used for project analysis. Table 3 summarizes place names, habitat classifications, and approximate acreages of habitat tracts analyzed under each WVA habitat classification, with findings. Results are expressed in average annual habitat units (AAHU's) and acreages (+ or -) and are used to compute required mitigation and benefits of beneficial use (BU) features.

It should be noted that, as with any numerical model of ecological functions, exact numerical output should be interpreted with caution. Positive and negative habitat trends, as judged from known historic responses to similar causes, should be considered in addition to model outputs. The ICT reviewed the literature to determine past responses to salinity changes and erosion within large marsh tracts, such as at Bessie Heights, Keith Lake, and Black Bayou, to determine if changes predicted by the model were reasonable. The Service considered model output in terms of acres affected to be more significant than AAHUs, therefore acres were given more weight in selecting mitigation. In all cases, the mitigation and BU plan compensate for projected AAHU and habitat losses for each project hydrologic unit, for each wetland habitat type, and within each state. Table 5 summarizes project impacts by habitat type.

Table 3 Texas net salinity changes, AAHU and total acreage by HU and habitat type

HU #	Hydrologic Unit	Habitat Type	FWP Net Change Total Acres	FWP Net Change AAHUs	FWP Net Salinity Change (ppt)
LA/TX 1	Sabine Island	Cypress/Tupelo Swamp	0	0	0.0
LA/TX 1	Sabine Island	Bottomland Hardwood	0	0	0.0
LA/TX 2	Blue Elbow	Cypress/Tupelo Swamp (BH lumped)	0	0	0.3
TX 1	North Neches River	Cypress/Tupelo Swamp	0	0	0.0
TX 1	North Neches River	Fresh Marsh	0	0	0.0
TX 1	North Neches River	Bottomland Hardwood	0	0	0.0
TX 2	Neches-Lake Bayou	Cypress/Tupelo Swamp	0	0	0.0
TX 2	Neches-Lake Bayou	Fresh Marsh	0	0	0.1
TX 2	Neches-Lake Bayou	Bottomland Hardwood	0	0	0.0
TX 3	Rose City PA24A	Fresh Marsh	-86	-32	0.3
TX 3	Rose City	Fresh Marsh	-3	-1	0.3
TX 3	Rose City	Cypress/Tupelo Swamp	0	0	0.3
TX 3	Rose City	Bottomland Hardwood	0	0	0.3
TX 4	West of Rose City	Fresh Marsh	-1	0	0.4
TX 5	Bessie Heights	Intermediate (Brackish lumped)	-1	-14	0.3
TX 5	Bessie Heights	Fresh Marsh	-2	0	0.5
TX 5	Bessie Heights	Bottomland Hardwood	0	0	0.5
TX 6	Old River Cove	Brackish Marsh	-46	-116	1.8
TX 6	Old River Cove	Bottomland Hardwood	0	0	0.5
TX 7	GIWW North	Fresh (Intermediate lumped)	-63	-140	1.6
TX 7	GIWW North	Brackish Marsh	-2	-8	1.6
TX 8	Texas Point	Intermediate (Fresh lumped)	-6	-19	0.8
TX 8	Texas Point	Brackish Marsh	-5	-7	0.8
TX 8	Texas Point	Saline Marsh	-17	-5	0.8
TX 10	Cow Bayou	Fresh Marsh	-6	-18	1.0
TX 10	Cow Bayou	Intermediate Marsh	-3	-12	1.0
TX 10	Cow Bayou	Cypress/Tupelo Swamp	0	0	1.0
TX 10	Cow Bayou	Bottomland Hardwood	0	0	1.0
TX 11	Adams Bayou	Fresh Marsh	-3	-15	1.5
TX 11	Adams Bayou	Cypress/Tupelo Swamp	0	-4	0.8
TX 11	Adams Bayou	Bottomland Hardwood	0	0	0.8
TX 12	Blue Elbow South	Cypress/Tupelo Swamp	0	-18	0.6
TX 13	Groves	Intermediate Marsh	-3	-3	1.0
	Totals		-247	-412	

(Corps 2009)

Note: WVA analysis assumes continued land loss w/o project at historic (30-year) rates
* TX9 Salt Bayou salinity impacts to be evaluated and (potentially) avoided under Keith Lake Fish Pass Continuing Authority Section 1135 Project

Table 4 Net Changes to Louisiana Aquatic Habitats with 48-Foot Project by WVA Model AAHU's, Acreage, and Habitat Type

HU #	Hydrologic Unit	Habitat Type	FWOP Net Change Acres	FWP Net Change Total Acres	FWP Net Change AAHUs	FWP Net Salinity Change (ppt)
LA 3	Black Bayou	Intermediate Marsh	-1,713	-130	-509	1.1
LA 2	Willow Bayou	Intermediate (Brackish lumped)	-2,116	-102	-328	0.9
LA 4	West Johnsons Bayou	Intermediate Marsh	-1,703	-142	-269	1.2
LA 5	Sabine Lake Ridges	Intermediate Marsh	-1,103	-93	-218	1.2
LA 9	East Johnsons Bayou	Intermediate Marsh	-895	-46	-190	1.0
LA 1	Perry Ridge	Fresh Marsh	-921	-50	-65	0.3
LA 1	Perry Ridge	Intermediate Marsh	-191	-12	-53	0.3
LA 5	Sabine Lake Ridges	Saline Marsh	-398	-10	-35	1.4
LA 8	Southwest Gum Cove	Fresh Marsh	-152	-8	-14	0.9
LA 5	Sabine Lake Ridges	Brackish Marsh	-2,567	-43	-14	0.6
LA 7	Southeast Sabine	Fresh Marsh	-40	0	-11	0.5
LA 6	Johnsons Bayou Ridge	Brackish Marsh	-707	-22	-6	0.7
LA 8	Southwest Gum Cove	Intermediate (Brackish lumped)	-233	-15	-4	0.9
LA 6	Johnsons Bayou Ridge	Saline Marsh	-93	-5	-2	1.8
LA 3	Black Bayou	Brackish Marsh	-803	-4	-1	0.8
LA 4	West Johnsons Bayou	Brackish Marsh	-1,189	-6	-1	0.7
LA 2	Willow Bayou	Brackish Marsh	-695	-2	-1	1.4
LA/TX 1	Sabine Island	Cypress/Tupelo Swamp	0	0	0	0.4
LA/TX 2	Blue Elbow	Cypress/Tupelo Swamp (BH lumped)	0	0	0	0.6
LA 7	Southeast Sabine	Intermediate (Brackish lumped)	-96	-1	0	0.2
LA 1	Perry Ridge	Bottomland Hardwood	0	0	0	0.3
LA/TX 1	Sabine Island	Bottomland Hardwood	0	0	0	0.4
Total			-15,615	-691	-1,721	

(Corps 2009)

Eighty-two percent of the Sabine-Neches Enlargement project Texas AAHU impacts are predicted to occur in fresh (-206 AAHUs) (50 percent) and brackish marshes (-131 AAHUs) (32 percent). Seventy-eight percent of the acreage (541 acres) and 91 percent of the AAHU impacts (1,571 AAHUs) are predicted to occur in Louisiana intermediate marshes. Few to no impacts are expected in swamp and bottomland hardwood habitats in Texas (0 acres, -22 AAHUs swamp), and Louisiana (0 acres, -44 AAHUs swamp). Eleven and 8.4 percent of the Louisiana acreage impacts are predicted to occur in brackish and fresh marshes, respectively (Table 5).

Table 5 WVA Ecological Modeling Results Summary

Habitat	Texas (acres)	Texas (AAHUs)	Louisiana (acres)	LA (AAHUs)
Saline marsh	-17	-5	-15	-37
Brackish marsh	-53	-131 (32%)	-77 (11%)	-23
Intermediate marsh	-13	-48	-541 (78%)	-1,571 (91%)
Fresh marsh	-164	-206 (50%)	-58 (8.4%)	-90
Swamp	0	-22	0	0
Bottomland hardwood	0	0	0	0
TOTAL	**-247**	**- 412**	**-691**	**-1,721**

9

SNWW Project Impacts

General salinity-related impacts to aquatic communities (Texas and Louisiana)

In the initial phases of project planning and interagency coordination, the Service and the other resource agencies expressed concerns that further salinity intrusion into the largest remaining tracts of high-quality fresh, intermediate, and brackish marshes on the Texas and Louisiana Gulf coast would likely be the SNWW project's greatest negative impact (USACE 2009).

Further, the Service considered alterations of salinities in the upper Neches and upper Sabine watersheds to be of higher concern than alterations of salinity to the higher-salinity, lower watershed marshes adjacent to Gulf of Mexico and GIWW waters. This is because undisturbed swamps and fresh marshes are composed of diverse assemblages of aquatic plants adapted to fresh water. These communities are tolerant of only a very few parts per thousand of salt over a very short time period. They are acutely affected by the sudden addition of only a few parts per thousand of salt (Reid and Wood 1976). For example, cypress-tupelo swamps on the lower Neches River system, in the vicinity of what is now Bessie Heights Marsh, disappeared within only a few years of original SNWW and GIWW construction, almost certainly from acute rises in salinity levels (Sutherlin 2005). This is typical for fresh to intermediate swamp and marsh systems (Brown and Montz 1986). Of course, concurrent localized events related to oilfield brine water discharges and logging directly impacted these forests also.

The brackish to saline marshes south of the GIWW in Texas and within a mile or so of Sabine Lake and the Gulf of Mexico in Louisiana are generally less diverse, are composed of plant species adapted to a wider range of salinities and are capable of tolerating salinities above 6 ppt on a semi-permanent basis. Increased salinities have been shown to be deleterious to brackish and even saline marsh by decreasing plant productivity, diversity, and by indirectly increasing marsh erosion (Visser et al. 2004b), and should be mitigated. However, they are not considered as sensitive to salinity changes as the fresher aquatic systems further upstream because salinity-induced plant stress in those locations is less likely to result in immediate marsh die-off.

Many scientific literature reports have concluded that increased salinities are detrimental to most fresh, intermediate and some brackish species of wetland vegetation (Hester et al. 2002). Hester et al. (2002) reviewed over 100 scientific studies concerning the salinity and water logging effects on 22 wetland species. All specimens of *Leersia oryzoides* died at salinities of 6, 9, and 12 ppt (Flynn et al 1995). Salinities of 15 ppt were lethal to both *Leersia oryzoides* and *Panicum hemitomon* (maidencane) in the field (McKee and Mendelssohn 1989). *Panicum hemitomon* stem height was reduced at 6 ppt and aboveground tissue mortality was seen in maidencane at

salinities of 12 ppt in greenhouse treatments (Howard and Mendelssohn 1999a). *Panicum hemitomon* was not able to recover total and below ground biomass associated with increased salinities (Howard and Mendelssohn 1999b). Hester et al. (1998) reported lethal salinity levels from 7.6 to 12 ppt for *P. hemitomon*. Bulltongue (*Sagittaria lancifolia*), a dominant fresh marsh species, is found at average salinities of 0.3 ppt (White 1983). *Sagittaria lancifolia* biomass was reduced at 6 ppt (Baldwin and Mendelssohn 1998), tissue damage occurred at 4.8 ppt (McKee and Mendelssohn 1989), growth decreased at 4 ppt (La Peyre 2001), and 2.9 ppt decreased photosynthesis and was lethal (Pezeshki et al. 1987a). Duck potato (*Sagittaria latifolia*), a common arrowhead, experienced tissue wilting and chlorosis at 6 ppt (Holm and Sasser 2001).

Marshhay cordgrass (*Spartina patens*), the most common intermediate and low salinity brackish marsh grass species, has a salinity range of 0 to 4 ppt (Taylor et al. 1997). As salinity increased from < 1 ppt to 6 ppt, net photosynthesis, leaf conductivity, and root and shoot dry weights decreased (Bandyopadhyay et al. 1993). Salinities of 15 to 25 ppt decreased *S. patens* height, foliage and root dry weight (Pezeshki and DeLaune 1991), increased salinities from 0 to 22 ppt decreased stomatal conductance by 54 percent and net photosynthesis by 43 percent (Pezeshki et al. 1987b), salinities of 30 ppt decreased photosynthesis by 36 percent (Bertness et al. 1992), and Broome et al. (1995) found a decrease in stem length and number at salinities greater than 10 ppt. Cattail (*Typha latifolia*) had decreased biomass at salinities of 1.8 ppt, total biomass was significantly depressed at 18 ppt after 3 weeks, and total mortality was observed at salinities of 18 ppt after 4 months (Hootsmans and Wiegman 1998).

The HS model input was chosen by the modeling committee to provide conservative estimates of salinity changes associated with channel enlargement. Low flow changes were calculated using the three-month period exhibiting lowest flows of the simulation period, ranging from 400 to 800 cubic feet per second (cfs) on the Sabine River and 400 to 500 cfs on the Neches River. These are significantly lower than mean flows. Median flow salinities were calculated for a six-month period, not including late winter and early spring (usually higher rainfall) months.

Hydrodynamic/salinity model results are summarized by hydrologic unit in Tables 3 and 4 for Texas and Louisiana respectively. Salinity impacts are summarized in habitat acres by net with-project acreage loss and maximum projected salinity change by habitat type and hydrologic unit. Table 5 summarizes projected salinity-related habitat losses by habitat type within each state by acres and AAHUs. Following are summaries of the Service's analysis of potential project-related salinity impacts, by hydrologic units in Texas and Louisiana.

Salinty related impacts to aquatic communities

Texas Habitat Areas

A review of the impacts associated with the most recent modeling efforts suggest that Texas will have a conversion of 86 acres of fresh water marsh to upland at DA 24A. Indirect impacts suggest higher salinities over approximately 39,000 acres, resulting in lower productivity. In addition, the model indicates that there will be no salinity impacts in swamps/bottomland hardwoods/fresh water marsh north of I-10. Salinity increases range from 0.3 to 1.8 ppt, with the highest impacts in fresh water marsh at GIWW North and Adams Bayou, and brackish marsh in Old River Cove and GIWW North.

Upper Neches River

North Neches River (Project HU TX 1) --- This 4,143-acre unit has 2,760 acres of cypress-tupelo, 384 acres of fresh water marsh, 412 acres of bottomland hardwood forests, 127 acres of open water and the remainder is scrub/shrub and upland habitats. The large riverine flows and seasonal flooding that this area is exposed to would continue and only a negligible increase in water surface elevation would be expected in the FWP. The HS model indicates that no FWP salinity impacts and no loss of bottomland hardwood, marsh or swamp habitat acreage are expected to occur. As a result, there are no AAHU losses for hydrologic unit TX 1.

Neches Lake Bayou (Project HU TX 2) --- This 5,707-acre unit is located immediately downstream from TX 1 and contains 2,277 acres of cypress-tupelo swamp, 1,270 acres of fresh marsh, 1,040 acres of bottomland hardwood forests, with the remainder scrub/shrub and upland habitats. Habitats and fish and wildlife resources in this unit are very similar to TX 1. The large riverine trough flows and seasonal flooding that this area is exposed to would continue in the FWP and only a negligible increase in water surface elevation would be expected. The HS model indicates that no FWP salinity impacts and no loss of bottomland hardwood, marsh or swamp habitat acreage are expected to occur. As a result, there are no AAHU losses for hydrologic unit TX 2.

Rose City (Project HU TX 3) --- This 5,805-acre unit has 2,323 acres of fresh marsh, 1,775 acres of bottomland hardwood forests, 464 acres of cypress-tupelo, 1091 acres of open water, with the remainder other upland habitats. FWP impacts are associated with a 0.5 ppt salinity increase and would result in the loss of three acres of fresh marsh, with no losses in the bottomland hardwood or swamp areas. Also, the SNWW Dredged Material Management Plan proposes to expand an existing placement area in this unit. This expansion would result in the conversion of 85 acres of fresh marsh and 1 acre of open water to a confined upland placement area and the loss of 32 AAHUs.

West of Rose City (Project HU TX 4) --- This 493-acre unit contains 395 acres of fresh marsh and 97 acres of open water habitat. The marshes are remnants of larger marshes impacted by the industrial facilities and Corps placement area in the unit. Impacts associated with the project will be minimal. Salinity changes are expected to be minimal (0.5 ppt) with a loss of one acre of fresh marsh resulting in no change in AAHU's for this unit.

Lower Neches River

Bessie Height (Project HU TX 5) --- Bessie Heights is an 11,363-acre hydrologic unit and is the sight of the most contiguous loss of marsh in Texas. The unit contains 2,018 acres of fresh marsh, 1,932 acres of intermediate marsh, and 293 acres of bottomland hardwoods. FWP impacts would be associated with small increases in salinity (0.5ppt) and the loss of two acres of fresh marsh and one acre of intermediate marsh. These impacts would result in a total loss of 14 AAHUs for the unit.

Old River (Project HU TX 6) --- This unit is approximately 11,851 acres and contains 5,240 acres of brackish marsh and 230 acres of fresh and intermediate marsh on the periphery. There is a 199-acre tract of bottomland hardwood in one corner of the unit and 3,620 acres of the unit is open water. Increases of salinity to 13 ppt and the loss of 46 acres of brackish marsh result in a total loss of 116 AAHUs for the unit.

Gulf of Mexico to North of GIWW

GIWW North (Project HU TX 7) --- This 5,907-acre unit is comprised of three units located on the north side of the GIWW and all are within the largest remaining coastal freshwater marsh in Texas. There are 4,541 acres of fresh marsh, 588 acres of brackish marsh, 129 acres of intermediate marsh and 195 acres of open water. TPWD baseline salinities range from 0.7 to 0.9 ppt during the growing season in fresh and brackish marshes, respectively. Project impacts expect an increase in salinity to 4.0 ppt in fresh marsh and 1.6 ppt in brackish marshes. Sixty-three acres of fresh and two acres of brackish marsh will be lost. Project impacts will result in a total loss of 148 AAHUs in this unit.

Texas Point (Project HU TX 8) --- This unit is 11,422 acres and lies adjacent to the SNWW at Sabine Pass and extends for almost 13.5 miles along the Gulf of Mexico. The Texas Point NWR lies completely within this unit. This unit contains 4,898 acres of saline marsh, 2,398 acres of brackish marsh, 1,605 acres of intermediate marsh, 100 acres of fresh marsh, 1,413 acres of other upland areas, and 1,008 acres of open water. Baseline salinities for this area average 5.75 ppt for intermediate, 8.5 ppt for brackish and 12.5 ppt for the saline marshes. It should be noted that periodic hurricanes and tropical depressions do inundate these areas with high salinity waters, but usually are then punctuated by long periods of freshwater recovery (Gooch 1996). However, the potential for a 0.56 ppt increase to affect standing crop of fresh/intermediate marsh via inflow points at the (Service-estimated) six tidal creeks and bank failure points is certainly real. This pattern tends to serve the beneficial function of removal of surplus above-ground vegetation, much like periodic wildfires in prairie regions, thus allowing highly productive new-growth vegetation to recover, to the benefit of wildlife populations. This is different from encroachment of chronic, slightly higher salinity levels in these communities, which has been shown to alter vegetation patterns to a less diverse and less productive state for wildlife (Palmisano 1972).

Project impacts would include increases in salinity, interior land loss and shoreline retreat increases. Salinities are expected to move to 7.8 ppt, 10.6 ppt and 14.6 ppt for the intermediate, brackish and saline marshes, respectively. Expected land losses are 6 acres, 5 acres and 17 acres for intermediate, brackish and saline marshes, respectively. Shoreline retreat is expected to increase to 0.42 ft/yr between 0.5 and 3.5 miles west of the jetty. These impacts are expected to result in a loss of 31 AAHUs in this unit.

Salt Bayou (Project HU TX 9) --- This 55,044-acre unit is adjacent to the SNWW between TX 8 and the GIWW. The majority of this unit lies within the J.D. Murphree WMA and the McFaddin NWR. The Salt Bayou unit has been extensively impacted by human development, i.e. oil exploration, cattle grazing and the construction of levees and ditches to create waterfowl hunting opportunities. This development has lead to increases in the amount of open water and has decreased the amount of emergent marsh with causes most likely being the increases in salt water intrusion. Predicted losses of salinity increases from 6.9 ppt to 9.6 ppt for the brackish marsh and to 7.4 for the intermediate marsh include 49 acres of brackish marsh and 202 acres of intermediate marsh are expected. The 251 acres of brackish/intermediate marsh loss in Salt Bayou <u>is not included</u> in project compensation requirements because it was agreed that the Section 1135 Water Resources Development Act (WRDA) Keith Lake Fish Pass project, a TPWD/Corps cooperative project supported by the Service, would protect this entire HU from project-induced salinity increases. In fact, current project design alternatives would reduce

salinities within this HU by as much as 10 ppt. **The Service will monitor SNWW deepening progress along with the Section 1135 Keith Lake Fish Pass Project and will recommend additional habitat compensation should the Keith Lake project fail to materialize.** 10

Cow Bayou (Project HU TX 10) --- Cow Bayou flows into the Sabine River approximately three miles north of its confluence with Sabine Lake. This 4,990-acre unit comprises a narrow riparian corridor and its entire length is confined by development and Bridge City. There are two upland placement areas, 1,436 acres of fresh water marsh, 1,445 acres of intermediate marsh, and 110 acres of cypress-tupelo swamp located within the unit. A salinity increase of 1.0 ppt is expected in the swamps and fresh water marshes in the upper reaches. Salinity increases of 1.0 ppt (Table 3) are expected for both fresh water and intermediate marshes in the lower reaches. Fresh water and intermediate marsh loss are expected to be six acres and three acres, respectively, for a loss of 30 AAHUs.

Adams Bayou (Project HU TX 11) --- Adams Bayou flows into the Sabine River approximately 5 miles north of Sabine Lake. This 1,679-acre unit is comprised of a narrow riparian corridor. There are 516 acres of fresh marsh and 640 acres of bottomland hardwood forests. Cypress tupelo comprises only 115 acres in this unit. Swamp communities are expected to see salinity increases of 0.8 ppt and fresh marshes will see an increase of 1.5 ppt (Table 3). Though somewhat compromised and intruded-upon by urban areas and past oilfield development, these are important habitat areas heavily used by local residents for recreation. These increases translate into a loss of three acres for fresh water marshes. No loss of swamp or bottomland hardwood acres is expected, however, the increased salinity is expected to have an overall impact on the health of the system. Increased herbaceous coverage and slowing of tree growth is expected. These impacts reflect a loss of 19 AAHUs.

South of Blue Elbow Swamp (Project HU TX 12) --- This entire section (698 acres) of the lower Sabine River drainage system is composed of cypress-tupelo swamp. This habitat type is predicted to suffer no actual acreage loss from the 0.6 ppt salinity increase during low flow periods. Although no loss in swamp acreage is expected, the increase in salinity will cause a reduction in the overall health and productivity of the swamp. Expected impacts are a reduction of over story and a slowing in the rate of trunk diameter growth. This expected impacts result in a loss of 18 AAHUs.

Groves, Neches River (Project HU TX 13) ---This small (437-acres) intermediate marsh unit lying west of the Neches River shows a baseline salinity of 3.0 ppt and FWP impacts would increase salinities 1.0 ppt to 4.0 ppt. This translates to three acres of projected intermediate marsh loss and a loss of 3 AAHUs.

Texas portion of shared HU's (Project HU LA/TX 1 and 2) --- LA/TX 1 and 2 are predicted to have, at a maximum, 0.0 and 0.3 ppt salinity increases, causing insignificant habitat losses. The ICT Environmental Work Group biologists thought that such small predicted maximum salinity increases would not significantly percolate into adjacent, higher bottomland areas since bottomland flooding is almost always accompanied by increased freshwater events. Adjacent cypress-tupelo swamps would likewise be buffered from any slight channel salinity increases by large volumes of surface fresh water. Because impacts are expected to be negligible, there is no expected land loss and no loss of AAHUs.

Salinity-related impacts to aquatic communities (Louisiana)
Louisiana Habitat Areas

Perry Ridge (Project HU LA 1) --- This large (28,094-acres) unit lying immediately north of the GIWW and west of the Sabine River contains the largest freshwater marsh tract (18,859 acres) in the project area. Because of projected salinity increases in the upper and eastern Sabine Lake, it is considered potentially at risk from project-induced salinity intrusion. Significant (2,158 acres) bottomland forests also occur here. A small predicted salinity change (-0.3 ppt) at this unit's boundary extrapolates to predicted losses of 50 acres (-65 AAHU's) of fresh marsh and 12 acres (-53 AAHU's) of intermediate marsh (Table 4). The bottomland hardwood portion of the unit would not be affected by increased water levels enough to suffer damages from slightly increased salinities. Also, as is the case for upper Neches and lower Sabine Rivers (TX) units, higher water levels are normally associated with increased freshwater river flows and high rainfall events, conditions which would be reflected under the High Flow model scenario.

A shift toward more brackish marsh habitat occurred from 1949 to 1968. In 1968, there was a 10 percent decrease in fresh marsh and the unit was 55 percent intermediate and 20 percent brackish marsh, possibly caused by saltwater intrusion from the SNWW via Sabine Lake and the GIWW. The unit currently includes 27 percent intermediate marsh (7,370 acres), 29 percent fresh marsh (7,820 acres), 1 percent swamp (170 acres), and 30 percent open water (8,190 acres). The remaining 14 percent includes upland, ridge, swamp, forest, or developed land (3,751 acres) (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Willow Bayou (Project HU LA2) --- This huge (36,291 acres) unit lies east of Sabine Lake and is bordered by Pine Ridge on the north, Sabine Lake on the west, the Burton-Sutton Canal on the east, and the Starks South Canal on the south. Most (35,100 acres) of its marsh acreage is classified as intermediate and is therefore potentially sensitive to minor salinity changes. The modeled FWP -0.9 ppt salinity increase is predicted to cause a loss of 102 acres (-328 AAHU's) of intermediate marsh during project life. The relatively small amount (1,182 acres) of brackish marsh within this unit is predicted to experience a 1.4 ppt salinity increase due to the project, causing a loss of 2 acres (- 1 AAHU) (Table 4).

The eastern two-thirds of this unit was historically a mixture of fresh and intermediate marsh with the west classified as brackish marsh. 1968 and 1978 vegetation type maps showed a trend toward more brackish conditions. In 1988, the majority of the unit was brackish marsh, with a small area of intermediate marsh located in the southeastern corner. In 1990, the unit consisted of approximately 7 percent intermediate marsh (2,500 acres) and 52 percent brackish marsh (18,960 acres), with the remaining 41 percent consisting of open water and upland habitats (15,010 acres).

Black Bayou (Project HU LA3) --- This 39,853-acre unit is the project area's largest and consists of primarily intermediate marsh. The Black Bayou unit is bordered on the west by the Sabine River and Sabine Lake, Pines Ridge to the south, the GIWW to the north, and the Gum Cove Ridge, Bancroft Canal, Black Bayou and Right Prong Canal to the east. The predicted 1.1 ppt salinity increase in the intermediate marsh extrapolates to a predicted net loss of 130 marsh acres (-509 AAHU's). The modeled brackish increase of 0.8 ppt will cause 4 acres of loss (-1 AAHU) (Table 4). The total predicted losses for the unit equal 134 acres and 510 AAHUs.

There has been a shift to more brackish marsh from 1949 to the present. In 1949, the distribution of marsh types was 50 percent fresh, 20 percent intermediate, and 25 percent brackish. By 1968, there was an increase of 15 percent in brackish marsh and 10 percent in intermediate marsh, and a 30 percent decrease in fresh marsh habitat. This increase in more saline marsh types may have been caused by saltwater intrusion via the Sabine-Neches and Calcasieu Ship channels. The unit currently consists of approximately 23 percent intermediate marsh (9,480 acres), 34 percent brackish marsh (13,750 acres), nominal fresh marsh (600 acres), and 33 percent open water (13,410 acres), with some swamp, upland, forest, and developed land (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

West Johnson's Bayou (Project HU LA4) --- This unit lies just south of Sabine NWR and is bordered by Sabine Lake to the west, Buck Ridge to the south, Deep Bayou to the east, and Gray's Ditch to the north. Johnson's Bayou flows from the southeast to the northwest through the unit. The unit consists primarily of intermediate marsh (10,031 acres), with 14 percent (1,837 acres) brackish marsh. The predicted 1.2 ppt salinity increase is expected to cause an additional loss of 142 acres (-269 AAHU's) of intermediate marsh and a 0.7 ppt salinity increase would lead to the loss of 64 acres (-1 AAHU) of brackish marsh (Table 4).

In 1949, the unit was composed of 85 percent brackish marsh, and 5 percent each of saline marsh, intermediate marsh, and beach habitats. Little change in marsh type has taken place from 1949 to the present. In 1968, the area contained 75 percent brackish marsh, and 25 percent intermediate marsh (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Sabine Lake Ridges (Project HU LA5) --- This 33,472-acre unit is the most southerly of the Louisiana project hydrologic units and lies immediately north of the Gulf of Mexico and east of southern Sabine Lake and Sabine Pass. Subjected to higher salinities than the more northerly units, it is composed of 10 percent (3,198 acres) saline marsh, 44 percent (14,673 acres) brackish marsh, and 24 percent (8,232) intermediate marsh. Access for marine organisms is via Greens and Lighthouse Bayous. The 1.4 ppt maximum predicted salinity increase at the bayou's mouth would cause losses of 10 acres (-35 AAHU's) to saline marsh. A predicted salinity increase of 0.6 ppt would cause losses of 43 acres (-14 AAHU's) of brackish marsh and 93 acres (-218 AAHU's) of intermediate marsh (Table 4).

Sabine Lake Ridges Unit marsh types have recently shifted toward fresher marshes. In 1949, the area was 70 percent brackish marsh, 10 percent saline marsh, and 20 percent beach or Chenier. By 1968, 20 percent of the previous beach habitat had converted to intermediate marsh. Currently, the habitats in the unit consist of 11 percent saline marsh (3,800 acres), 35 percent brackish marsh (12,100 acres), 24 percent intermediate marsh (8,300 acres), 5 percent fresh marsh (1,810 acres), and 5 percent open water (1,713 acres), with the remaining 19 percent consisting of upland, swamp, forest, or developed land (6,545 acres) (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Johnson's Bayou Ridge (Project HU LA6) --- This small (4,089-acre) unit is bounded on the south by the Gulf of Mexico and on the north by Hackberry Ridge. Johnson Bayou Ridge habitats consist of brackish (2,744 acres) and saline (370 acres) marsh with Chenier forested uplands along Hackberry Ridge (975 acres). The 0.7 ppt predicted salinity increase would lead to a loss of 22 acres (-6 AAHU) of brackish marsh. A predicted salinity increase of 1.8 ppt would cause a loss of 5 acres (-2 AAHUs) of saline marsh over the project life (Table 4).

Forty percent of this unit consisted of saline marsh, with 5 percent brackish and intermediate marsh and the rest being Chenier ridge habitat in 1968. Since 1968, approximately 25 percent of the saline marsh has shifted to brackish (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Southeast Sabine (Project HU LA7) --- The 8,034-acre Southeast Sabine unit is bordered by a series of manmade canals bisecting the Sabine NWR. The western portion of this unit is bordered by the Starks Central Canal on the north, the Burton-Sutton Canal on the west, an unnamed canal to the east, and the Starks South Canal on the south. The work group determined that only the western portion of the unit would be affected by SNWW salinity increases. The unit contains 4,925 acres of intermediate marsh and 2,023 acres of fresh marsh. Predicted maximum salinity increases of 0.5 ppt would result in losses of 0 acres (-11 AAHUs) of fresh marsh. A predicted salinity increase of 0.2 ppt would cause a loss of 1 acre (- 0 AAHUs) of intermediate marsh (Table 4).

From 1949 through 1988, the unit was classified as intermediate marsh, with 10-20 percent brackish marsh. The unit contains 58 percent intermediate marsh (12,430 acres), 31 percent brackish marsh (6,590 acres), nominal fresh marsh (10 acres), and 11 percent open water and other habitats (2,249 acres) (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Southwest Gum Cove (Project HU LA8) --- This is an interior marshland unit bounded by Gum Cove Ridge to the north, Starks North Canal on the south, and on the west by Right Prong and Black Bayous. Its 11,386 acres contain 3,615 acres of fresh marsh and 6,605 acres of intermediate marsh. Predicted salinity increases of 0.9 ppt would result in the loss of 8 acres (-14 AAHUs) of fresh marsh and a loss of 15 acres (-4 AAHU's) of intermediate marsh over the project life (Table 4).

The unit's habitats shifted to more brackish marshes from 1949-1968 when 15 percent of the fresh to intermediate marshes converted to brackish marsh. Habitats include approximately 38 percent fresh marsh, 23 percent intermediate marsh, 7 percent brackish marsh, and 17 percent open water. The remaining 14 percent incorporates upland, swamp, forest, or developed land (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

East Johnson's Bayou (Project HU LA9) --- This 26,719-acre unit is composed primarily of intermediate marsh (26,138 acres) plus a small amount of uplands along Buck Ridge, which forms its southern boundary. It is bordered on the north by Sabine NWR. Salinity increases of 1 ppt are predicted to cause additional losses of 46 acres (-190 AAHUs) of intermediate marsh over current marsh loss (Table 4).

The East Johnson's Bayou Unit was divided evenly between intermediate and brackish marsh in 1949. By 1968, the unit was comprised of 70 percent intermediate marsh and 30 percent brackish marshes, which is indicative of a salinity decrease (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1999).

Louisiana portions of shared HU's (Project HU's LA/TX 1, 2) --- LA/TX 1 and 2 are predicted to have 0.1 ppt salinity increases, causing insignificant actual habitat losses and loss of 0 AAHU's to the cypress-tupelo community. The ICT Environmental Work Group biologists thought that such small predicted salinity increases would not significantly percolate into adjacent, higher elevation bottomland areas since bottomland flooding is almost always accompanied by increased freshwater events. Adjacent cypress-tupelo swamps would likewise be buffered from any slight channel salinity increases by large volumes of surface fresh water.

Habitat Trade-offs, Mitigation, and Beneficial Use (BU) Plan

On August 31, 2009, the Corps' Directorate of Civil Works – Planning Community issued implementation guidance for Section 2036(a) of the Water Resources Development Act of 2007. This guidance requires that the preferred alternative contain a mitigation plan for the fish and wildlife resources that are lost as a result of the unavoidable impacts caused by the project. These impacts must be compensated to the extent justified and the preferred alternative must have adequate mitigation that will ensure the channel improvement project will not have any measurable adverse impact to the significant resources in the area. The Corps also recognizes that the wetland resources outlined in this document are significant and could suffer long term impacts due to the preferred alternative.

The ICT met on several occasions and identified a preferred mitigation plan for Louisiana and Texas. All of the unavoidable impacts from the preferred alternative will occur in Louisiana. All of the project impacts in Texas will be offset by BU features.

The Work Group developed mitigation and BU goals, as follows:

1) No net loss of wetland acres,
2) Replace lost AAHU's 1:1,
3) Replace AAHU's in-kind,
4) Losses to be mitigated in the state in which they occur, and
6) Dredged material from Sabine Pass is to be shared equally between each state.

Following are explanations of proposed BU and mitigation features.

Texas

As previously discussed, land subsidence, salinity intrusion from original SNWW construction, small channel (largely oil field access) construction, levees, oil field brine runoff, and secondary salinity intrusion have all contributed to the conversion of over 9,500 acres of wetlands in the lower Neches River basin into tidally-influenced open water areas. Once converted, these areas are difficult to re-vegetate and return to their original productivity without raising lost elevations using massive amounts of dredged or otherwise imported material. Therefore, it was decided early in the interagency project planning process that new-work channel dredged material and subsequent maintenance material should be utilized to repair these distressed aquatic systems.

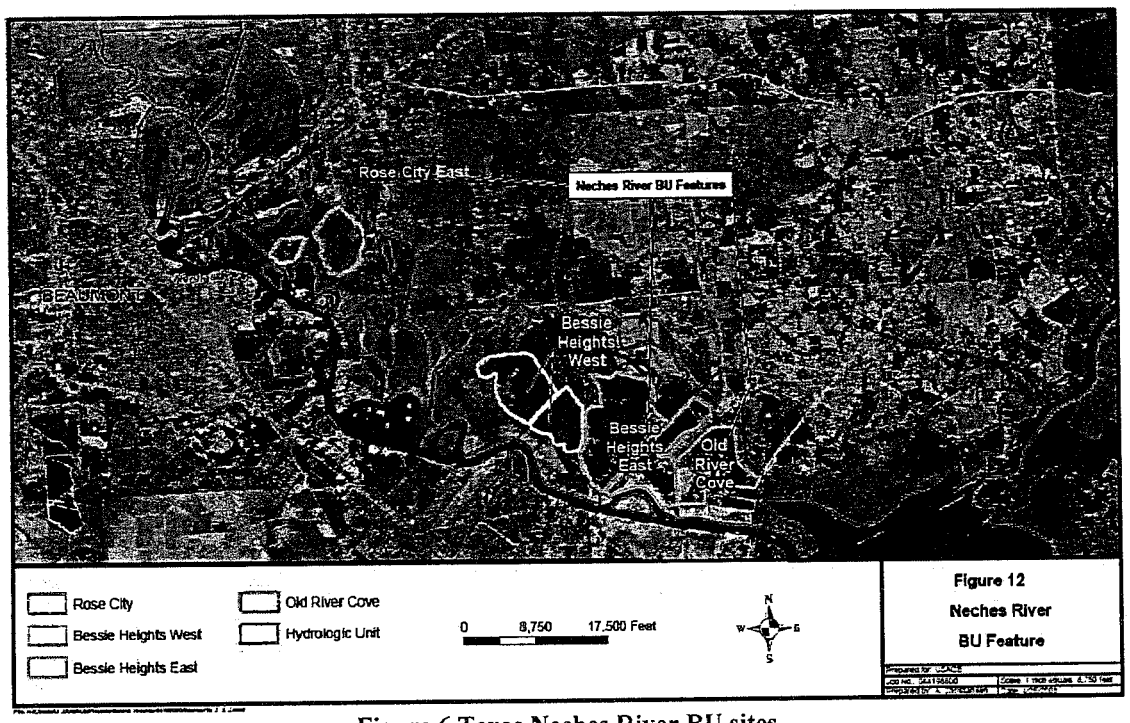

Figure 6 Texas Neches River BU sites

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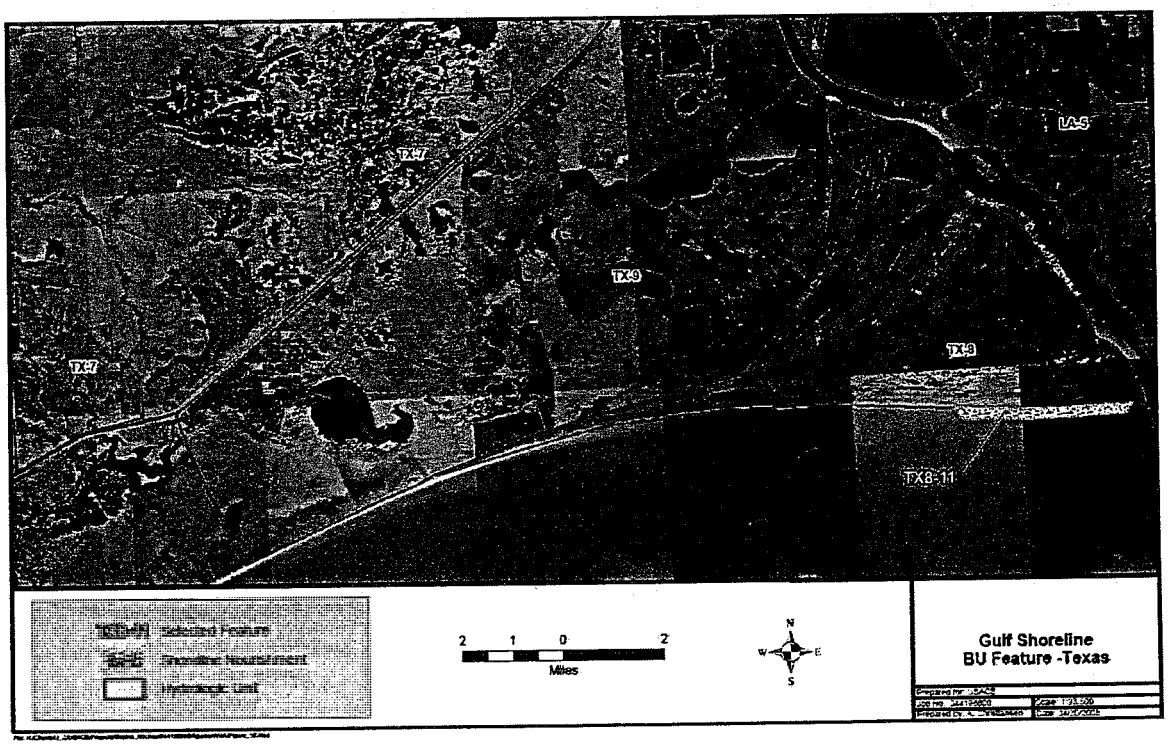

Figure 7 Texas shared BU beach nourishment

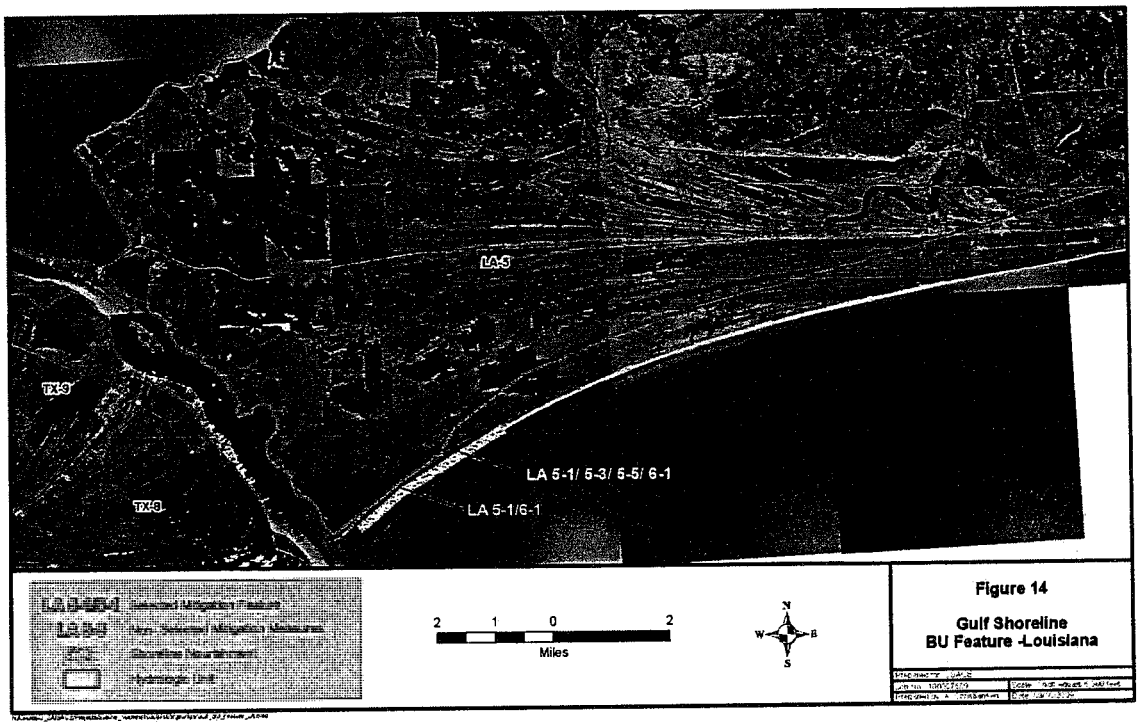

Figure 8 Louisiana BU beach nourishment

Rose City Marsh BU--- This formerly productive freshwater system includes most of hydrologic unit TX3, a 5,805-acre area composed primarily of cypress-tupelo swamp and freshwater marsh prior to the early 1900s. A total of 225 acres of emergent fresh marsh-elevation substrate would be constructed (and planted) using new work material by project year 15 and 120 more acres would be added using maintenance material from the first maintenance dredging cycle following construction. The placement of dredge material is expected to restore 18 inches of top soil over eroded mud flats and open water, thereby creating 345 acres of emergent fresh marsh, improving 72 acres of shallow water habitat and nourishing an additional 151 acres during the two events. This would result in construction of approximately 568 acres of restored marsh, marsh edge, channels, and potential swamp forest ridges (Tables 6 and 7). **The Service recommends that the post-authorization project work group pursue plans for the restoration of cypress-tupelo forest vegetation on suitable, higher-elevation ridges within the restored marsh area.** Formerly, this was the predominant vegetation type at this location, and cypress-tupelo swamp forest has been shown to support high native wildlife populations in this region and to be in decline on a nationwide basis. 12

The existing low salinities (0.25 ppt) show little improvement from the BU. In fact, the model shows a slight (0.3 ppt) (Table 3) salinity increase under low flow conditions with the project. However, since this projected increase is slight, the Service does not consider it biologically significant and to be compensated by the magnitude of habitat creation. Under actual field conditions, it is likely that many areas protected from direct connection by the newly constructed marshes and pumped terraces would frequently retain pockets of freshwater runoff from the surrounding watershed. We consider acreage losses and gains, through habitat creation, to be more realistic than small model-predicted salinity changes. Also, we consider it doubtful that

model output is sensitive enough to predict very small benefits to salinity levels at individual habitat features within shallow areas far removed from main channels.

Bessie Heights Marsh BU--- The most extensive losses of interior coastal wetlands in Texas have occurred in the lower Neches River delta. Of the estimated 13,800 acres of marshes formerly in this sector, 12,632 acres have been lost to open water (White et al. 1987, Sutherlin 1996). Primary causes were land subsidence and resultant salinity intrusion. Shallow water area (< 1 ft.) would be doubled within the sub-unit, and existing, currently stressed, marsh would be nourished by spillover from adjacent marsh creation. New work material to be used in this reach ranges in sand/clay ratios from 1:2 to 1:5. The marsh fans (splays) will be created by frequent movement of dredge pipes.

In the Bessie Heights East unit (Project HU 5), 1,190 acres of emergent intermediate marsh and 679 acres of emergent brackish marsh would be constructed using finer grained maintenance material. The DMMP features a total restoration of 1,869 acres in this unit, with improvement to 660 acres of shallow water habitat and the nourishing of an additional 615 acres of existing fringe marsh (Table 6). The inner marshes will have channels constructed to allow for drainage through reconstructed stream channels to the Neches River. This will provide flushing to the system and will maintain moderate soil salinities, while providing ingress and egress for marine dependent species.

Old River Cove Marsh BU---The Old River Cove (Project HU 6) will have a total of 639 acres of emergent brackish marsh restored, 139 acres of shallow water habitat improved and will re-nourish an additional 432 acres of existing fringe marsh at project inception (Table 6). Channels will be created to allow circulation throughout the created areas as well as to provide ingress and egress for marine dependent organisms. Conditions for submerged aquatic vegetation are expected to improve as still water areas are created and there is an increase in shallow water habitat. Table 6 summarizes the acreage to be improved from BU.

Table 6 Neches River BU Summary

Components of Neches River BU Feature	Restored Emergent Marsh	Improved Shallow Water Habitat	Nourished Existing Marsh	Total Influence Area
Rose City East	345	72	151	568
Bessie Heights East	1,869	660	615	3,180
Old River Cove	639	139	432	1,210
Total	2,853	871	1,198	4,958

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The Service considers the marsh creation measures in the lower Neches delta, the salinity reductions within the created marsh areas and their basins, and the potential slight salinity reductions in the upper Neches River portion of the study area to be beneficial habitat measures and to compensate for the slight salinity-related habitat stress in lower project reaches. However, experience in other large-scale estuarine channel enlargement projects involving placement of large volumes of dredged material has taught us that methods and construction techniques often require significant adjustments, interagency coordination, planning, monitoring, and on-site inspections. Success of BU features depends on sound planning, timely inspections, and the

ability to modify construction techniques on-site. Salinity levels should be monitored in areas where the model predicts changes following channel enlargement.

Therefore, the **Service recommends that an interagency coordination team be formed to include all State and Federal environmental agencies to meet regularly and provide inspection oversight and recommendations during post-authorization planning and construction. The Service will request yearly Fish and Wildlife Coordination Act transfer funds during the construction phase to provide inspection and design recommendations for habitat creation features.** 14

Colonial Waterbird Needs Analysis

The Service reviewed colonial waterbird datasets from Texas (TCWC 2006), and Louisiana (Michot et al. 2004). Waterbird colony sites in Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana known to be active since 2000 were mapped and yearly averages tabulated. Numbers of active colonies and breeding populations were compared to available wetland habitat to estimate whether additional waterbird breeding colony(s) could increase populations of this desirable and beneficial bird group. Colonial waterbirds are considered an important species group and an indicator of the health of large aquatic ecosystems due to their high visibility and source of tourism revenue, their role as top-level predators, their sensitivity to environmental factors such as contamination, and the availability of reliable population estimates.

Orange and Jefferson Counties, Texas, from 1996 thru 2005, hosted at least 28 nesting colonies containing a 10-yr. average of 2,550 nesting pairs. Due to year-to-year inconsistencies in counting effort, the 10-yr. maximum count of 5,039 nesting pairs might be closer to the average yearly nesting population. These nesting waterbirds belonged to 13 species, including seven wading bird species. Wading birds (herons, egrets, and spoonbills) normally nest in mature brush and trees.

Calcasieu and Cameron Parishes, Louisiana, hosted 11 small colonies, detected during Michot et al.'s 2004 Louisiana aerial survey. These 11 colonies had five species and 220 nesting pairs, mostly black-crowned night herons. The black-crowned night heron is often overlooked in the TCWC counts. This species tends to aggregate in small daytime, often non-nesting, colonies in isolated mainland brush thickets and does not represent a true colonial waterbird in many aspects. An average of 1,214 wading bird nesting pairs were observed in three southwest Louisiana colonies; one colony in Pool 3 of the Sabine National Wildlife Refuge, and two colonies in the Gum Cove region north of Pool 3 in the 2004-2005 Louisiana statewide wading bird and seabird surveys (Green et al. 2006).

Orange and Jefferson Counties in Texas combined cover 1,490 sq. mile, over 50 percent of which is urbanized or industrial. Cameron and Calcasieu Parishes, Louisiana combined covers 3,026 sq. mile; approximately 10 percent is urbanized or industrial. Yet, the Texas side of the project area (Orange and Jefferson Counties) host, on average, about 20 times more colonial nesting waterbirds and eight times more species richness than the Louisiana side.

This indicates that there may be a shortage of predator-free nesting habitat in the southwest Louisiana region, and may indicate that additional predator-free nesting island(s) in the Sabine

Lake system could increase colonial waterbird populations over vast areas of appropriate feeding habitat in Louisiana.

Sabine Lake Colonial Waterbird Nesting Island BU Opportunity --- Because of the proximity to one-time sources of firm clay building material, the shortage of waterbird nesting habitat within large areas of feeding habitat in southwestern Louisiana, and the past success in creating waterbird nesting habitat in bay systems, the Service **recommends using new-work dredged material to construct a waterbird nesting island in the most efficient location for placement of material and at least one mile from shore in the upper Sabine Lake area.** The island should be 4 to 12-acres in size and should be built to an elevation of at least 8 ft. mean high tide. Suggested location(s) are shown in Figure 1. 15

The Service made similar recommendations for the Houston-Galveston Navigation Channels (HCNC) Project. In 1999, using stiff new-work clays from HGNC deepening, the 10-acre Evia island was constructed approximately 3 miles east of the ship channel and 1.5 miles north of Bolivar Peninsula, in southern Galveston Bay. Colonial-nesting waterbirds nested on Evia Island during the first year post-construction, and in increasing numbers and diversity each year following. Nesting populations have increased from 1,050 pairs in 2001 to 6,800 pairs in 2006. The percentage of all Galveston Bay nesting pairs which nest on Evia Island and the three other HGNC beneficial use islands has increased from 3 percent (1,824 nesting pairs) in 2001 to 23 percent (8,419 nesting pairs) in 2005.

Native tree plantings have begun to provide habitat for the (declining) wading bird species. Predator control, often an expensive requirement of nesting island management, was largely avoided by proper tree placement and the Service would assist in developing plans for tree placement and construction. The Service would also assist in post-construction monitoring and management. Texas Audubon Society and Golden Triangle Audubon Society have expressed interest in providing assistance in protection and management (Kasner 2007).

Texas and Louisiana Point Gulf Beach Nourishment--- Maintenance material from the Sabine Pass SNWW channel reach will be placed alternately, every three years, on either the Texas or Louisiana Gulf beach for a distance of approximately three miles. In addition to halting the projected slight accelerated shoreline loss from increased ship wake waves due to channel enlargement, a cumulative 674 acres of new saline marsh would be constructed by the end of the 50-year project life at Texas and Louisiana Points.

Sabine Pass maintenance material has averaged approximately 51 percent silt, 31 percent clay, and 18 percent sand for maintenance dredging cycles since 1975. The maintenance material would be hydraulically pumped onto the the beach and nearshore zone. Some material is expected to flow over existing beach, marsh, and near shore waters. Vegetation would be planted on the inland portion of the dredged material to assist in its stabilization. A similar Corps' WRDA Section 204 Continuing Authorities Program project constructed at Texas Point in 2004 showed that the dredged material dissipated quickly during the placement event, with 60 percent remaining following initial disposal. It is estimated that 50 percent of the remaining material after each placement episode will erode away by the end of each 6-year cycle. New material added every 6 years would eventually create 674 acres of new saline marsh by the end of the project life at Louisiana and Texas Points (USACE 2009)

Existing Disposal Area Use and Management (DMMP) ---

DAs 1-4 --- Nearshore sites should be maximized in order to maximize benefits to demersal and benthic communities from creating bottom surface topography. Within EPA Green Book guidelines, nearshore offshore disposal sites should be moved as close to the Gulf beach as practicable, for fisheries habitat as well as beach nourishment purposes. 16

DA 16A --- This 202-acre site is an existing high-quality intermediate marsh, containing several shallow, open water ponds, bayous and natural circulation channels (Figure 2). It is unleveed, except for the low natural river berm, and receives tidal circulation through these avenues leading into the manmade ditch running along its southwest border. The site is presently at natural elevations. Therefore, the Service objects to the use of this site for dredged material disposal, especially given the availability of other nearby disturbed sites. 17

DA 14A (82 acres) --- This site is a relatively undisturbed *Spartina patens* wet meadow, containing one large (approximately 6 acres) and several small open-water ponds. As a high-quality wetland at natural elevations which would freely flood during spring tide and heavy rainfall events, it provides habitat for a diverse array of native wildlife species. The Service objects to the use of this site for dredged material disposal, given the availability of other nearby disturbed sites. 18

DA 23A (269 acres) --- This area is a leveed, second-growth, scrub-shrub forest. Wetland areas are present, many formed by the backwater effect of the levees. Dominant species are black willow (*Salix nigra*), hackberry, and Chinese tallow, with the occasional red maple, water oak, and yaupon (*Ilex vomitoria*). The Service recommends that if this site is converted to an upland DA: 1) damages to wetlands ("scrub-shrub" bottomland forest) be calculated using WVA methodology for project mitigation, and 2) disposal area water regime protocol be developed, in conjunction with Service and TPWD biologists, to maximize wetland characteristics of the enclosed DA for wintering waterfowl habitat during between-disposal periods. 19

DA 24A (187 acres) --- This site is composed of a marginal upland (possibly remnant bottomland hardwood) ridge and isolated wetlands. Wetlands contain small open-water pockets but are primarily densely vegetated with California bulrush (*Schoenoplectus californicus*), common reed (*Phragmites australis*), and *Spartina patens*. Edges and ditches have a more diverse assemblage of wetland plants, including black willow, rattlebox (*Sesbania drumondii*), wax myrtle (*Myrica sebiferum*), smartweed (*Polygonum sp.*), and narrow-leaf cattail. Uplands and transitional areas are dominated by the invasive Chinese tallow, but contain occasional yaupon, deciduous holly (*Ilex verticillata*), common baldcypress, red maple, sweetgum, American holly, and greenbriar. Hydrology is restricted by levees and roads, but both wetland and upland areas have potential for restoration. Adjacent wetlands to the north and northeast are of higher quality and contain more natural hydrology and circulation patterns. 20

The Service recommends that, if the 187-acre portion of the site is converted to an upland disposal area: 1) disposal area levee alignments and discharge points be reviewed by Service and TPWD biologists before final site designation for input on minimizing impacts to adjacent high-quality habitats, 2) disposal area water regime protocol be developed, in conjunction with Service and TPWD biologists and Jefferson County Navigation District, to maximize wetland characteristics of the enclosed DAs during between-disposal periods for wintering waterfowl habitat.

DA 26 --- (192 acres) This leveed site, adjacent to the Neches River in an old oxbow bend, has previously been used for disposal of SNWW material. It is freshwater marsh dominated by Chinese tallow, with small pockets of *Phragmites* sp., leafy three-square, narrowleaf cattail, water hyssop, rice cutgrass, and wax myrtle, primarily along remnant borrow ditches. While the site does have some value as waterbird and native reptile and amphibian habitat associated with the few, small open-water areas, its value is limited. Therefore, the Service would not object to its use as a new-work dredged material disposal site. However, a disposal area water regime protocol should be developed, in conjunction with Service and TPWD biologists, to maximize wetland characteristics of the enclosed DA during between-disposal periods for wintering waterfowl habitat. 21

DA 27A (84 acres) --- This leveed site contains a "backwater", isolated, early successional swamp forest created by previous levee construction. Species composition, limited species diversity, and high degree of disturbance make this habitat of fairly low value. 22

DA 27C (87 acres) --- The entire site has been leveed in the past and has received overland flow from past dredging activities. This site is a secondary upland forest. Common tree species (to 35 ft.) are water oak, sweet gum, arrowwood viburnum (*Viburnum dentatum*), Carolina buckthorn (*Frangula caroliniata*), wax myrtle, and loblolly pine (*Pinus taeda*). Most trees greater than 10 inch diameter at breast height (dbh) have been wind-thrown by recent storm events. The site has some value as wintering songbird and small mammal habitat. The Service recommends that a disposal area water regime protocol be developed, in conjunction with Service and TPWD biologists and Jefferson County Navigation District, to maximize wetland characteristics of the enclosed DA during between-disposal periods for wintering waterfowl habitat. 23

DA 27D (35 acres) --- This leveed area receives regular inflow from an adjacent industrial cooling facility which may contain some contaminants. The water table is kept artificially high year-round, supporting a dense vegetative community dominated by California bulrush and fringed by second-growth common baldcypress, Chinese tallow, and sweetgum. Small open-water areas and outlying roadside borrow ditches contain dense stands of invasive water hyacinth and *Salvinia minima*, with some native yellow pond-lily. Dense, weed-choked plant cover and the artificial water regime limit this site's wetland wildlife value, but it supports a wetland wildlife community typified by red-winged blackbird (*Aegelaius phoniceus*), common coot (*Fulica atra*), moorhen (*Gallinula chloropus*), sedge wren (*Cistothorus platensis*), and wood duck (*Aix sponsa*).

The Service recommends that if DA 27D is converted to an upland DA that a disposal area water regime protocol be developed to maximize wetland habitat potential during between-disposal intervals for wintering waterfowl use. 24

Table 7 SNWW Dredge Material Management Plan Restoration (BU) and Nourishment Features

Hydro unit	No.	Description	Size of Influence Area
Rose City	TX3-1 East	Restoring fresh marsh & shallow water habitat, & nourishing existing marsh in two construction events. New work material will be used to restore 225 ac marsh in 556 existing open water acres, construct hydraulic levees & construct three finger mounds & circular mound. Maintenance material from 1st cycle used to construct finger mounds & fill out northern margin, restoring an additional 120 acres of marsh. Material from Sec 18.	Influence area 568 ac; restoring 345 ac marsh in 556 open water acres
Bessie Heights	TX5-2	Restoration of intermediate & brackish marsh & shallow water habitat, and nourishment of existing marsh with maintenance material for 28 years. Assume 7 maintenance cycles - 267 acres marsh created per cycle. New work material used to build hydraulic containment levee at S end. Maintenance material used to restore 70-75% of the existing 2,546 ac of open water. Material comes from Neches River Channel Sect 13, 14, & 15.	Influence area - 3180 ac; 679 ac brackish marsh restored in 847 ac open water, and 1190 ac intermediate marsh restored in 1683 ac of open water.
Old River Cove	TX6-1	Restoration of brackish marsh & shallow water habitat, & nourishment of existing marsh with new work material. Area is semi-confined; new work material used to construct hydraulic containment levee along existing canals. New work material comes from Neches River Channel, Sections 13, 14, 15.	Influence area - 1,210 ac; restores 639 ac in 778 ac open water.
Keith Lake Marsh	TX9- 1	Marsh restoration in areas of breaking marsh north of Keith Lake, within the TPWD J.D. Murphree Wildlife Management Area. Degraded marsh areas will be filled with thin layers (6 to 24 inches) of maintenance material from Section 7 of the Port Arthur Canal in one maintenance cycle.	Influence area – 580 ac
Texas Point	TX 8-11	Nourish 0.5 to 3.5 miles from West Jetty using maintenance material from Section 5 over 50 yr project life. Unconfined placement of maintenance material along shoreline every 6 years for project life (8 placement episodes). Assume 50:50 split of material between Texas and Louisiana accomplished by alternating placement in TX and LA.	Affected shoreline 3.0 miles
Louisiana Point	LA5-6	Nourish 0.5 to 3.5 miles from East Jetty using maintenance material from Section 5. Unconfined placement of maintenance material along shoreline every 6 years for project life (8 placement episodes). Assume 50:50 split of material between Texas and Louisiana by alternating placement in TX and LA.	Affected shoreline 3.0 miles

(USACE 2009)

Table 8 Summary of DMMP Beneficial Use Feature Benefits (Units in AAHUs)

	Swamp	Bottomland Hardwood	Fresh Marsh	Intermediate Marsh	Brackish Marsh	Saline Marsh	Totals
Texas Impacts	-22	0	-206	-48	-131	-5	-412
TX 3 Rose City East			+178				+178
TX 5-2 Bessie Heights East				+305	+128		+433
TX 6-1 Old River Cove					+235		+235
TX 8-11 Texas Point Shoreline Nourishment						+222	+222
Texas BU Benefits							+1,068
Louisiana Impacts	0	0	-78	-1,571	-23	-37	-1,709
LA 5-2/6-2 Louisiana Point Shore Nourishment						+210	+210
Total Impacts							2,121
Total DMMP BU Benefits							1,278
Net Impacts over BU Benefits							-843

(USACE 2009)

The net Dredged Material Management Plan (DMMP) benefits (1,278 AAHUs) are not sufficient to totally offset project impacts of -2,121 AAHUs, thus a deficit of -843 AAHUs remain (Table 7). That deficit will be partially offset by the following proposed Louisiana mitigation. Louisiana impacts were minimized by Louisiana Point BU (+210 AAHUs), but 1,499 AAHUs of LA impacts remain to be mitigated. The benefits of the DMMP in Texas exceed Texas impacts by 656 AAHUs (+1,068 AAHUs from BU vs. -412 AAHUs impacts) (Table 8). Since the Coastal Zone Management Act does not apply to Federal lands, the Corps proposes to reduce the Louisiana mitigation needed by using excess Texas DMMP benefits to compensate for the project's impacts on the Sabine NWR. The total Sabine-Neches project impacts to the Sabine NWR (-340 AAHUs) will be offset by excess Texas DMMP benefits, leaving a surplus of +316 AAHUs and a compensatory mitigation target of 1,159 AAHUs in Louisiana (Table 9) (USACE 2009).

Table 9 Compensatory Mitigation Target for Louisiana (in AAHUs)

	Texas	Louisiana	Total Project Area
Net FWP Benefits/Impacts			
Total Impacts	-412	-1,709	-2,121
Total BU Benefits	1,068	210	1,278
Net FWP Benefits or Impacts	+656	-1,499	-843
Excess Texas Benefits Applied to Federal Land			
Excess Texas Benefits	+656		
Sabine NWR Impacts	-340		
Net Excess Texas Benefits	+316		
Compensatory Mitigation Target			
Net Impacts LA and Project		-1,499	-843
Federal Impacts Compensated By Texas Benefits		+340	
FWP Compensatory Mitigation Target		-1,159	-843 (-1,159 + 316)

(USACE 2009)

Louisiana SNWW Mitigation---

Sabine-Neches project impacts to Louisiana marshes are primarily related to salinity increases associated with the proposed channel deepening. Since no feasible salinity reducing mitigation measures could be found, the Habitat Workgroup evaluated various mitigation measures consisting of marsh restoration, terracing, shoreline protection and Gulf shoreline nourishment. Marsh restoration included different sources of dredged material - BU from the Channel to Orange maintenance dredging, to dedicated dredging in the GIWW and Sabine Lake. The Corps applied the CE/ICA in the certified version of the IWR-PLAN to identify mitigation features that provided the most cost effective environmental benefits to offset project impacts (USACE 2009).

Willow Bayou Unit Marsh Restoration - Sabine Lake Dedicated Dredging

Marsh restoration using material from dedicated dredging in Sabine Lake (Alternative B) or SNWW new work material (Alternative C) was proposed for the Willow Bayou hydrologic unit. Marsh restoration areas LA 2-16 through LA 2-19, and a fifth area (LA 2 ADD) located north of Willow Bayou Canal in Unit 5 of the Sabine SNWR were considered. LA 2-16 includes a 1,831-acre project area and would restore 822 acres of shallow open water with 2.6 million (M) cubic yards of dredged material. LA 2-17 includes a 2,297-acre mitigation area and would restore 1,035 acres of open water with 3.4 M cubic yards of material. LA 2-18 includes a 681-acre mitigation area and would restore 251 acres with an estimated 809,893 cubic yards of material.

LA 2-19 includes a 1,809-acre mitigation area and would restore an estimated 719 acres of marsh with 2.9 M cubic yards of dredged material. LA 2 ADD would restore 436 acres of marsh in a 1,285-acre project area with an estimated 1.5 M cubic yards of material, for a total restoration of 3,263 acres of marsh if all alternatives were selected (Figure 9, Table 10).

Figure 9 Willow Bayou Mitigation Proposed and Recommended

Table 10 Summary of Benefits of Willow Bayou Marsh Restoration Measures Evaluated

Mitigation Measure	AAHUs	Project Influence Area (ac)	Existing Marsh Nourished (ac)	Open Water (ac)	Restored Emergent Marsh (ac)	Cubic Yds. (Mil cyds)	Cubic Yds./ Acre
LA 2-16B & C	445	1,831	803	1,028	822	2.6	3,163
LA 2-17B & C	492	2,297	1,003	1,294	1,035	3.4	3,285
***LA 2-18B** & C	152	681	367	314	251	0.81	3,227
LA 2-19B & C	419	1,809	910	899	719	2.9	4,033
***LA 2-ADD B**	214	1,285	745	540	436	1.5	3,440
Totals (considered)	**1,722**	**7,903**	**3,828**	**4,075**	**3,263**	**11.21**	**3,435**
Selected	**366**	**3,775**	**1,112**	**854**	**687**		

Note: * Selected Willow Bayou Mitigation Measures. (USACE 2009)

The increments were combined in the ICA according to the most cost effective pumping distances and costs. Marsh would be restored by unconfined flow of dredged material from a hydraulic pipeline from either Sabine Lake (Alternative B) or SNWW Section 10 new work (Alternative C). Pipeline relocation and elevation control would be necessary to obtain the appropriate intermediate marsh elevation. Channels (tidal creeks, trenasses) would be constructed after the material has settled to return the areas to natural hydrologic conditions allowing tidal action to affect the newly restored marsh and to facilitate estuarine fisheries organism access (USACE 2009).

Dedicated dredging Alternative B would take material from a Sabine Lake borrow area located approximately 1,000 ft from the Sabine NWR shoreline. That borrow area would average 1,030 ft wide by 1.8 to 7.8 miles long by 7.5 ft deep. The borrow area would be continuous and parallel with the present Sabine Lake long shore circulation patterns to prevent the development of hypoxic conditions detrimental to aquatic organisms. The area is expected to fill with Sabine Lake and River sediments post construction. An access channel may be needed for the hydraulic dredge to access the proposed borrow area.

The borrow site is located within a Sabine Lake oyster seed harvesting ground designated by the Louisiana Department of Wildlife and Fisheries (LDWF), but oysters are not present in the proposed borrow area due to reduced salinities. Sabine Lake oyster reefs are limited to higher salinity areas in the southern part of Sabine Lake adjacent to and south of Blue Buck Point. An oyster survey by T. Baker Smith, Inc. (2006) found no live oyster reefs in the vicinity of the proposed eastern Sabine Lake borrow area. Use of this borrow area to implement this marsh restoration mitigation requires a waiver of lake dredging mitigation requirements from LDWF (USACE 2009). **The Service recommends that the Sabine Lake borrow area be relocated at least 1,000 feet from the eastern Sabine Lake shoreline to reduce possible adverse effects to shoreline erosion.** 25

Marsh restoration Alternative C, using SNWW new work dredged material, would pump dredged material from the deepening of the navigation channel across Sabine Lake and into the

Willow Bayou Unit marshes on SNWR. The 11-mile pumping distance would require the use of several booster pumps. An access canal may be required for booster pumps to access the lake shoreline (USACE 2009).

Marsh restoration benefits (Tables 10, 11, and 12) were calculated based on restoring additional marsh acreage, and the restored marshes' affect on reducing salinities and shoreline erosion due to reduction in wind fetch. Restoration of marsh in open water areas would reduce wind fetch and promote the still water conditions favorable for the growth of submerged aquatic vegetation. Land loss rates are expected to be lower due to the production of a more stable, higher marsh elevation (USACE 2009).

The last two columns of Table 10 depict total volume and volume per acre restored for each Willow Bayou Unit mitigation measure. The mean volume per acre is 3,435 cubic yards. This amount is close to the 3,478 cubic yards per acre calculated for the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) Sabine Refuge Marsh Creation Cycle 3 project (230 acres; 800,000 cubic yards). However the Sabine Refuge Marsh Creation Cycle 1 project restored about 125 acres of marsh using approximately 6,400 cubic yards of material per acre for an average of 4,900 cubic yards per acre for the two confined BU marsh restoration sites. The proposed Sabine-Neches mitigation will be unconfined dredged material placement. If this comparison with area constructed beneficial use projects is valid, the volumes needed to restore the mitigation areas listed in Table 10 could be underestimated by as much as about 30%.

The Service questions whether the Corps would be able to achieve the degree of marsh restoration depicted in the mitigation with unconfined placement of dredged material (Tables 10, 11, and 12) and recommends that the Corps review their calculations for volume of dredged material needed to achieve the listed mitigation. 26

The ICT approved Willow Bayou increments LA 2-18 B and LA 2-ADD B above. Alternative C for each of the above, consisting of marsh restoration using dredged material from the Sabine-Neches channel was considered too costly due to the need to transport the SNWW new work at least 11 miles across Sabine Lake. **The Service recommends Alternative "C" in the event that Alternative "B", Sabine Lake dedicated dredging, is not viable for SNWW Sabine NWR marsh restoration mitigation.** 27

Black Bayou Marsh Restoration – Channel to Orange Maintenance Material
Marsh restoration using dredged material from maintenance dredging of the Channel to Orange, Texas was proposed at LA 3-10 west of Rusty Vincent Lake (Figure 9). Material would be pumped from the Sabine River Channel between East Pass and the GIWW in one increment (LA 3-10R). Intermediate marsh at LA 3-10R would be restored in 6 cycles between TY5 and TY30, adding 132 acres each 5-yr cycle for a total of 792 acres restored in 1,148 acres of open water within a 2,465-acre project area (Figure 9, Tables 11 and 12) (USACE 2009).

Figure 10 Black Bayou Unit Mitigation Proposed and Recommended

The restored marsh would be constructed by the unconfined flow of dredged material via hydraulic dredge similar to the Willow Bayou Unit restoration described above. Pipeline movement and elevation control would be necessary to achieve marsh elevation to restore intermediate marsh. Tidal creeks (trenasses) would be constructed after the dredged material has settled (6 months to a year) to return the area to natural hydrology and facilitate estuarine aquatic organism access to the restored marshes (USACE 2009).

Marsh restoration benefits (Table 11) are achieved by the restoration of marsh in shallow open water, and the restored marshes' effect in reducing salinities and shoreline erosion by reducing wind fetch. Approximately 70 percent of the open water would be restored to intermediate marsh, and existing fringe marsh would be "nourished" by winnowing fine-grained suspended solids during sediment placement. The restored marsh would reduce wave energies in remaining open water areas reducing turbidity and promoting conditions favorable for the growth of submerged aquatic vegetation. Land loss rates are expected to be lower due to the creation of a more stable, higher marsh elevation (USACE 2009).

Table 11 Summary of Benefits of Selected Willow and Black Bayous Marsh Restoration Mitigation Measures; Channel to Orange Maintenance Material and GIWW Dedicated Dredging

Mitigation Measure	AAHU	Influence Area (ac)	Existing Marsh (ac)	Open Water (ac)	Restored Emergent Marsh (ac)
Willow Bayou Mitigation					
LA 2-18B & C	152	681	367	314	251
LA 2-ADD B	214	1,285	745	540	436
Channel to Orange					
LA 3-10R	198	2,465	1,317	1,148	792
GIWW Dedicated Dredging					
LA 3-15 B	231	1,788	877	911	683
LA 3-18 B	239	1,877	1,049	828	621
Total Selected	1,034	8,096	4,355	3,741	2,783

(USACE 2009)

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Black Bayou Marsh Restoration - Dedicated Dredging of Lake Charles Deep Water Channel/GIWW

Marsh restoration using dedicated dredging of accumulated material in the Lake Charles Deep Water Channel/GIWW was proposed for three areas in the vicinity of the Black Bayou Cutoff Canal (Figure 9). The 30-foot-deep 24.9 mile-long Lake Charles Deep Water Channel, constructed by local interests, joins the GIWW between the Sabine River and Lake Charles. It was authorized as a federal channel by the River and Harbor Act of 1935. It provided a deep water channel from the Port of Lake Charles to the Gulf of Mexico via the Sabine-Neches Waterway and was last maintained in 1940 when the Calcasieu Ship Channel was deepened to 30 feet. The channel contains sediment that could be mined to restore marshes in the Black Bayou area (USACE 2009).

Material would be pumped from a 13-mile stretch of the GIWW in two increments (LA 3-15 and LA 3-18) with LA 3-15 located immediately south of the GIWW in the Black Bayou watershed (Figure 9, Table 11). LA 3-15 would be restored first then LA 3-18. LA 3-15B and LA 13-19B would fill 75 percent of existing open water area. Intermediate marshes would be constructed via hydraulic dredge and unconfined pipeline discharge, with tidal creeks constructed after dredged material settlement similar to that described for LA 3-10R above (USACE 2009).

Marsh restoration benefits (Tables 11 and 12) are derived from the restoration of marsh acreage, as well as the restored marshes' effect in reducing salinities and wind fetch. Reduction in wind fetch would reduce shoreline erosion and turbidity and stimulate the production of submerged aquatic vegetation (SAV). An estimated 75 percent of the open water would be restored to intermediate marsh, and existing fringe marsh would be nourished by winnowing fine-grained suspended solids during material placement. Land loss rates are expected to remain the same because the area currently has a low land loss rate with the construction of the Black Bayou Hydrologic Restoration CWPPRA Project (CS-27). Dedicated dredging in the GIWW is not

predicted to establish a hydrologic connection to the deeper navigation channels in the Sabine and Calcasieu Rivers, and is not predicted to provide a channel for salinity wedges from those channels to enter the GIWW (USACE 2009).

The Service concurs with unconfined placement of material and recommends the construction of tidal creek channels (or trenasses) at least ten feet wide and two feet deep in the restored marsh, six months to a year, after disposal in order to return the area to natural hydrology for tidal movement and estuarine aquatic organism access to the restored marshes. The dredged material pipeline for marsh restoration (i.e., Willow Bayou and Black Bayou Units mitigation) should be placed in existing canals and waterways to the greatest extent practicable.

Selected Mitigation Plan

The selected mitigation plan compensates for the National Economic Development Plan (NED) salinity increase and associated losses in marsh acreage and biological productivity by restoring 2,783 acres of intermediate marsh in Louisiana to compensate for a projected 691 acres of marsh losses due to SNWW project salinity impacts. These mitigation measures produce 1,181 AAHUs that provide full compensation for the remaining (after DMMP BU) 1,159 AAHUs of impacts while meeting original mitigation goals for a balance of +22 AAHUs (Table 12).

The Service concurs that the Louisiana mitigation measures below (Table 12), along with the above BU measures compensate for SNWW project impacts in Texas and Louisiana. 29

The Corps should acquire a refuge Special Use Permit from the Sabine NWR (Terry Delaine, manager, Sabine NWR, 337-558-5574; or Don Voros of the Southwest Louisiana Refuges Complex, 1428 Hwy 27, Bell City, LA 70630; 337-598-2216) to coordinate the final planning for the dedicated dredging marsh restoration mitigation on Sabine NWR. 30

Table 12 Recommended Louisiana mitigation measures, SNWW NED Plan

Selected Mitigation Measures	MFWP AAHU	Restored Emergent Marsh (acres)
Willow Bayou		
LA2-18 B Marsh Restoration (Sabine Lake dredging)	152	251
LA2 ADD B Marsh Restoration (Sabine Lake dredging)	214	436
Black Bayou		
LA3-10R Marsh Restoration (Channel to Orange maintenance material)	198	792
LA3-15B Marsh Restoration (GIWW dredging)	307	683
LA3-18B Marsh Restoration (GIWW dredging)	310	621
Total Mitigation Compensation	1,181	2,783
Total Remaining Impacts (after BU)	-1,159	-843
Net After Compensation	**+22**	**+1,940**

(USACE 2009)

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Table 13 summarizes SNWW total impacts (– 938 acres and – 2,121 AAHUs) and DMMP BU (3,527 acres, 1,278 AAHUs) and mitigation (2,783 acres, 1,181 AAHUs) benefits. The balance of impacts vs. benefits project-wide is + 5,372 acres and + 338 AAHUs (Table 13). Impacts and benefits by habitat type are depicted in Table 14. In Louisiana, 92 percent (-1,571 AAHUs) of the impacts were to intermediate marshes, followed by 5 percent (-78 AAHUs) in fresh, 2 percent (-37 AAHUs) in saline, and 1 percent (-23 AAHUs) in brackish marshes. In Texas, 50 percent (-206 AAHUs) of the impacts were in fresh marsh, followed by 32 percent (-131 AAHUs) and 12 percent (-48 AAHUs) in brackish and intermediate marshes, respectively, and 5 percent (-22 AAHUs) in swamp habitats (Table 14). DMMP BU benefits of +1,068 AAHUs totally compensate for Texas impacts (-412 AAHUs). The mitigation (+1,181 AAHUs), Gulf shoreline DMMP BU benefits, and excess Texas DMMP benefits fully compensate for SNWW impacts to Louisiana marshes by providing an excess of +2,429 acres and + 22 AAHUs (Table 13).

Table 13 SNWW mitigation totals, by acres and AAHUs

Project Impacts (Acres/AAHUs)	FWP Impacts (Acres/AAHUs)	*Dredged Material Management Plan (DMMP) Benefits (Acres/AAHUs)	Net After DMMP (Acres/AAHUs)	Mitigation Benefits (MFWP) (Acres/AAHUs)	Difference (Acres/AAHUs)
ACRES					
LA FWP	- 691	337	-354	+2,783	+ 2,429
TX FWP	- 247	3,190	+2,943		+2,943
Total Acres	**- 938**	3,527	+2,589	**+2,783**	**+5,372**
AAHUs					
LA FWP AAHU	-1,709	+ 550 (+210 +340 from Texas)	-1,159	+1,181	+22
TX FWP AAHU	-412	+ 728 (+1,068 - 340 to LA)	+ 316	0	+ 316
Total AAHUs FWP	**-2,121**	**+ 1,278**	**- 843**	**+1,181**	**+ 338**

*Note: Excess Texas benefits (+340 AAHUs) were transferred to Louisiana to compensate for Sabine NWR impacts.

Table 14 SNWW impacts, BU, and mitigation totals by habitat type (AAHUs)

Habitat	Impacts	DMMP BU Benefits	Mitigation Benefits	Net Difference Project vs. Mitigation AAHUs
Louisiana				
Swamp	0	0	0	0
Fresh Marsh	-78 (5%)	0	0	-78
Intermediate Marsh	-1,571 (92%)	0	+1,181	-390
Brackish	-23 (1%)	0	0	- 23
Saline	-37 (2%)	+210	0	+ 173
Subtotal Louisiana	**-1,709**	**+210**	**+1,181**	**-318** (mitigated by Texas BU)
Texas				
Swamp	-22 (5%)	0	0	-22
Fresh Marsh	-206 (50%)	+178	0	-28
Intermediate Marsh	-48 (12%)	+305	0	+ 257
Brackish Marsh	-131 (32%)	+363	0	+ 232
Saline Marsh	-5 (1%)	+222	0	+ 217
Subtotal Texas	**-412**	**+1,068**	**0**	**+656**

(Units are in AAHUs)

Monitoring

BU monitoring in the Neches River sites

Success criteria at the Neches River sites will be the same as for the Louisiana sites. Texas has experienced colonization of some invasive species. The success criterion will include measures to limit the establishment of invasive plant species colonization at the BU sites. The Corps will assume management responsibilities for the first 10 years and then the Sabine Neches Navigation District (SNND) will assume responsibility for the remainder of the life of the project. Aerial photography will be used to monitor the progression of invasive species and will be flown in conjunction with the other data acquisition flights. Marsh elevation will be assessed one year after placement. The ICT will evaluate the data and determine if additional material is needed or if further action is necessary to allow for tidal exchange in the marsh. Marsh vegetation in this area has historically colonized on its own with little assistance. However, the ICT will evaluate the vegetation coverage in the mitigation sites and determine whether additional planting would be appropriate by using aerial photography beginning at year five after the material placement. If the vegetation coverage is not progressing, the ICT will make recommendations that will increase the likelihood of achieving the success criteria to include plantings. Invasive species will be monitored and the ICT will determine if further action is necessary to achieve the monitoring success criteria.

Table 15 Ecological success criteria for Texas mitigation sites

Monitoring the Neches River Beneficial Use Feature
for the Sabine-Neches Waterway Channel Improvement Project

	Rose City East	Bessie Heights East	Old River Cove
Ecological Success Criteria			
Placed material will be 60-80% vegetated with native, typical, emergent marsh 5 yrs after placement of material.	158 ac vegetated emergent marsh after one dredging cycle.	1,308 ac vegetated emergent marsh after 28 yrs and seven maintenance dredging cycles.	447 ac vegetated emergent marsh.
Marsh remains intact and 60-80% vegetated with native, typical, emergent marsh at end of project, 50 yrs.	158 ac vegetated emergent marsh.	1,308 ac vegetated emergent marsh.	447 ac vegetated emergent marsh.
Invasive, noxious, and/or exotic plants comprise less than 4% of marsh cover.	Less than 6 ac with undesirable plants.	Less than 52 ac with undesirable plants.	Less than 18 ac with undesirable plants.
Placed material elevation.	Maximum optimal elevation (as determined by pre-construction surveys in consultation with ICT) 1 year after placement of material.		
Monitoring Organization	USACE for 1st 10 yrs. SNND for monitoring after Yr 10 through 50-year period of analysis.		

(Corps 2009b)

Louisiana

Mitigation success criteria for all five sites in Louisiana will be the same due to proximity and similarity in ecological processes at each of the sites. The success criteria will consist of 60 to 80 percent emergent marsh, 20-40 percent open water and adequate elevation of the placed dredge material to support the colonization of the marsh vegetation. Service personnel believe that the marsh elevations at these mitigation sites range from 1.1 to 1.2 ft. Each of the mitigation sites will be constructed to the highest elevations (with instruction from the ICT and pre-construction surveys) that will support marsh vegetation. This target elevation is assumed to reach approximately 1.6 to 1.7 ft NAVD88 after settlement. This target elevation will allow for the projected sea level rise. Over the 50 year life of the project, an ecological success criterion of 60-80 percent emergent marsh is expected to be sustained. However, adaptive management will

be utilized to ensure that the success criteria are met on all levels. The USACE and the project sponsor, the SNND will manage the monitoring of the sites. Invasive species are believed to not be a problem in Louisiana. However, a success criterion is included to protect the marshes and prevent the spread of invasive plants to the mitigation sites. In addition, aerial photography will be collected and used to assess the success of the sites eight times over the life of the project. Table 16 depicts the acreage to be created.

Table 16 Mitigation monitoring for Louisiana

Mitigation Monitoring in Louisiana for the Sabine-Neches Waterway Channel Improvement Project

	Willow Bayou		Black Bayou West	Black Bayou East	
	LA 2-18B	LA 2-A00 B	LA 3-10R	LA 3-15B	LA 3-18B
Ecological Success Criteria					
Placed material will be 60-80% vegetated with native, typical, emergent marsh 5 yrs after placement of material.	176 ac vegetated emergent marsh	305 ac vegetated emergent marsh	92 ac marsh after 1st maintenance dredging, 185 ac marsh after 2nd maintenance dredging, 277 ac marsh after 3rd maintenance dredging, 370 ac marsh after 4th dredging cycle, 462 ac marsh after 5th dredging cycle, and 554 ac marsh after 6th dredging cycle	478 ac vegetated emergent marsh	435 ac vegetated emergent marsh
Marsh remains intact and 60-80% vegetated with native, typical, emergent marsh at end of project, 50 yrs.	176 ac vegetated emergent marsh	305 ac vegetated emergent marsh	554 ac vegetated emergent marsh	478 ac vegetated emergent marsh	435 ac vegetated emergent marsh
Invasive, noxious, and/or exotic plants comprise less than 4% of marsh cover	Less than 7 ac with undesirable plants	Less than 12 ac with undesirable plants	Less than 22 ac with undesirable plants	Less than 19 ac with undesirable plants	Less than 17 ac with undesirable plants
Placed material elevation	Maximum optimal elevation (as determined by preconstruction surveys in consultation with ICT) 1 year after placement of material				
Monitoring Organization	U.S. Army Corps of Engineers and Sabine-Neches Navigation District				

(Corps 2009b)

Monitoring of the BU placement on the Gulf Shore

Dredge material from the project is to be placed alternately on the Texas and Louisiana shores near the top of Gulf beaches at Texas Point and Louisiana Point. Dredged material would nourish existing marshes and the near-shore shallow water. The expectation is that some of the material will remain and assist with the severe erosion that continues to plague these two shorelines. It is hoped that some of the material may wash up on the beaches due to high tides and storm events and may nourish the marshes behind the dunes. Monitoring efforts will be initiated every three years beginning with the first placement and will continue for two full 6-year cycles at each point to year 13. The focus of this objective is to monitor and evaluate the success of on-shore and near-shore disposal to achieve a reduced rate of shoreline erosion and possible accretion. Texas Point shoreline erosion rate average should be less than 44 ft/yr while the Louisiana shoreline should exhibit accretion rate averages of more than 1.2 ft/yr (USACE 2009b). The shoreline erosion or accretion will be calculated by using Year 1 baseline aerial photograph and photography from Years 4, 7, 10 and 13. An annual report completed by the District Engineer will summarize the results of the achieved successes, failures, disposal activities and recommendations for obtaining the goals set forth by the ICT. This report will be available to all ICT members and other cooperating agencies. Five years following the disposal, the ICT will meet to assess the results and status of the emergent marsh. At this time, the ICT will evaluate whether there is need for additional data collection and if not, the ICT can recommend other corrective actions such as plantings, discharge pipe placement, and contouring of the marsh. Monitoring activities are set to stop when it has been determined that placement of dredge material is achieving the goal of reduced shoreline erosion and marsh re-nourishment behind the Gulf beaches. By using adaptive management, the ICT can evaluate and make

modifications/recommendations on dredge material disposal at either of these sites during the monitoring period.

Summary of Service Conclusions and Recommendations

1.) Construct a 2 to 12-acre, + 8 ft. colonial waterbird nesting island at least one mile offshore in Sabine Lake using project-dredged material. The island should include a sloping sand beach, preferably protected by a rock breakwater similar to the design of Evia Island in Galveston Bay. The Service can assist in final design, location, and management. 32

2.) Create an interagency work group during post-authorization planning, and continue the work group through planning and construction phases. The work group would execute important design, inspection, and monitoring functions for habitat creation features. These include: a) the 345-acre freshwater marsh (potentially some swamp acreage) and 183-acre freshwater lake creation at Rose City, b) the 1,190-acre intermediate marsh and 679-acre brackish marsh and 1,090-acre shallow freshwater habitat creation at Bessie Heights, c) the 639-acre brackish marsh and 139-acre shallow water habitat at Old River Cove, d) the 687-acre intermediate marsh creation from Sabine Lake dredging at Willow Bayou on Sabine NWW and e) the 2,096-acre intermediate marsh creation from the GIWW and Channel to Orange-dedicated dredging of accumulated maintenance material in the LA Black Bayou Unit. Experience at ongoing Federal navigation projects in Galveston Bay, Corpus Christi Bay, Atchafalaya Bay, and elsewhere have shown us that large-scale habitat creation using dredged material requires ongoing feedback and modification during and following construction in order to successfully turn conceptual plans into successful habitat creation features. 33

3.) Include as part of the interagency work group tasks, the monitoring and guidance for aquatic habitat (wintering waterfowl) management within DMMP upland disposal sites 23A, 24A, 27A, 27C, and 27D. 34

4.) Replace on a 1:1 basis on suitable bottoms within Sabine Pass or in the southern portion of Sabine Lake, any estimated oyster reef losses caused by project features. Oyster habitat mitigation should be accomplished concurrently with channel construction, should consist of at least a 1-ft thick layer of shell or suitable cultch material such as graded limestone or fly-ash rock, and should be followed up at one year post-construction with bottom profiling survey and grab sampling to insure adequate relief (minimum average 0.5 ft above bay and pass bottom) and oyster spat coverage. This mitigation is not needed if no Sabine Lake or Pass oyster habitat is disturbed by project features. 35

5.) The Service concurs with Willow Bayou Unit Alternative "B", restoring marsh on the Sabine NWR through dedicated dredging of material from Sabine Lake and placing that material in open water areas on that refuge north of the Willow Bayou Canal. However, if Alternative "B" should not prove viable, the Service recommends that Alternative "C", beneficial use of new work material from the SNWW, be used to restore marsh on Sabine NWR, or the rock breakwater shoreline stabilization measures, or Sabine NWR terracing measures be implemented as long as the acres protected/restored and AAHUs gained fully compensate for projected impacts. 36

6.) The Service recommends that the Corps review their calculations for volume of dredged material needed to achieve the listed mitigation in Louisiana and questions whether the Corps 37

would be able to achieve the degree of marsh restoration depicted in the recommended mitigation with unconfined placement of dredged material (Tables 11 and 12).

7.) The Service recommends the construction of tidal creek channels (or trenasses) at least ten feet wide and two feet deep in the restored marsh, six months to a year, if necessary, after disposal in order to return the area to natural hydrology for tidal movement and estuarine aquatic organism access to the restored marshes. The tidal creeks could be constructed by tracking marsh buggy track-hoes, or similar equipment, over proposed creek channel routes. The dredged material pipeline for marsh restoration (i.e., Willow Bayou and Black Bayou Units mitigation) should be placed in existing canals and waterways to the greatest extent practicable to minimize marsh damage. 38

8.) The Service recommends that the Sabine Lake borrow area be relocated at least 1,000 ft from the eastern Sabine Lake shoreline to minimize borrow area shoreline impacts. 39

9.) The Corps should acquire a refuge Special Use Permit from the Sabine NWR (Terry Delaine, manager, Sabine NWR, 337-558-5574; or Don Voros of the Southwest Louisiana Refuges Complex, 1428 Hwy 27, Bell City, LA 70630; 337-598-2216) to coordinate the final planning for the dedicated dredging marsh restoration mitigation on Sabine NWR. 40

10.) The Service recommends that the Corps construct the Sabine-Neches project mitigation at the same time as waterway enlargement construction is performed. 41

11.) The Service recommends that the Corps require protective easements on privately owned lands where Sabine-Neches mitigation is to be performed to ensure that the mitigation is not compromised by future development activities. 42

12.) The Service recommends that the Corps implement a DMMP BU and mitigation monitoring program to consist of aerial photography interpretation, elevation, and vegetation surveys to be conducted periodically during the project life to ensure that the BU and mitigation is successful at offsetting project impacts during the project life. 43

13.) The Service recommends that if DA 27D is converted to an upland DA, a disposal area water regime protocol be developed to maximize wetland habitat potential during between-disposal intervals for wintering waterfowl use. 44

14.) Develop an exotic and invasive species plan that will be used to control exotic and invasive species at the mitigation sites based on the success criteria used in the monitoring plan. 45

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RESPONSE TO COMMENTS

Comment No.	Response
1	The figure included in the Coordination Act Report (CAR) report is incorrect. It includes Neches River Beneficial Use (BU) components that have been dropped from the Preferred Alternative. Please see Final Environmental Impact Statement (FEIS) Figure 1.1-2 for the correct figure.
2	U.S. Army Corps of Engineers (USACE) notes that the CAR description of the Preferred Alternative (Recommended Plan in the Draft Feasibility Report [DFR]) is incorrect. The Recommended Plan is the Locally Preferred Plan (48-foot [ft] authorized depth), not the National Economic Development (NED) Plan (49 ft authorized depth). Also the description of the Recommended Plan in the CAR is incomplete. The Recommended Plan includes deepening and widening of the Taylor Bayou Channels and Basins and the addition of Neches River Turning/Anchorage Basins 1, 4 and 8 (see FEIS Section 2.3.2).
3	The figure included in the CAR report is incorrect. It includes Neches River BU components that have been dropped from the Preferred Alternative. Please see FEIS Figure 2.1-1 for the correct figure.
4	There are significant differences between U.S. Fish and Wildlife (USFWS) estimates of individual wetland types, as shown in CAR Table 1, and wetland type subtotals used in the Wetland Value Assessment (WVA) modeling of wetland impacts (FEIS Appendix C, Table 1). USACE notes that the Interagency Coordination Team (ICT) approved the wetland type acreages applied in the WVA modeling, and the impact results. Furthermore, USFWS in the CAR (pages 17-20) concurs with the USACE impact analysis. Therefore, the differences between these two estimates are assumed to be immaterial to the impact evaluation.
5	The total number of existing Placement Areas (PA) along the entire exiting Sabine-Neches Waterway (SNWW) is 20: 16 upland PAs and 4 Ocean Dredged Material Disposal Site (ODMDS) (see FEIS Section 2.4.2.1), not 13 as presented by the CAR.
6	PA 16A is discussed in FEIS Section 2.5.3.4.1: Areas Considered for PA Expansion. It is not an existing PA as implied by the CAR. As noted in the FEIS, this area was dropped from further consideration as a PA.
7	Table 4 reflects an error in FWP Net Change Average Annualized Habitat Units (AAHUs) presented in Draft EIS (DEIS) Table 4.1-3 for LA 8, Southwest Gum Cove, fresh marsh. The DEIS incorrectly shows a loss of 14 AAHUs for the net change to LA8 fresh marsh. The net change should be a loss 2 AAHUs (rather than a loss of 14 AAHUs as shown in the DEIS) and the total Louisiana change in AAHUs should therefore be a loss of 1,709 AAHUs.
8	USACE concurs with the restatement of losses by habitat type in this paragraph, with the exception of Louisiana losses in cypress-tupelo swamps. No loss (0 AAHUs) is predicted for Louisiana swamps (see FEIS Table 2.5-5). Also, USACE notes that the impacts listed in Table 4 would occur without the BU plan, which would fully offset impacts in Texas and partially offset impacts in Louisiana with BU benefits.
9	Error noted for comment 3 above is also reflected in this table. LA AAHUs for fresh marsh should be a loss of 78 rather than the loss of 90 shown in the table.
10	Comment noted. The Keith Lake Section 1135 CAP study was begun in 2003, well before impacts of the SNWW Channel Improvement Project (CIP) had been determined or potential mitigation measures defined. Since at that time it seemed likely that the CAP study and project construction would be completed before the SNWW CIP could be authorized and constructed, the Keith Lake Section 1135 study was considered separable from the SNWW CIP. It was assumed that a water control structure at the Fish Pass would be part of the future without-project condition for the SNWW CIP.

	Incremental impacts of the SNWW CIP will be calculated for the Salt Bayou unit of the SNWW study area when WVA modeling is completed for the Keith Lake Section 1135 study. It is possible that the excess Dredged Material Management Plan (DMMP) benefits (316 AAHUs) of the SNWW CIP will cover all incremental project impacts. However, if it is determined that additional mitigation is needed, then USACE and the non-Federal sponsor of the SNWW CIP will initiate consultation with resource agencies, identify and incrementally justify additional compensatory mitigation for the Salt Bayou unit, and prepare a supplemental environmental impact statement.
11	The figure included in the CAR report is incorrect. It includes Neches River BU components that have been dropped from the Preferred Alternative. Please see FEIS Figure 2.5-1 for the correct figure.
12	The proposed Rose City Marsh BU was developed in consultation with the ICT (which includes the USFWS) and benefits of the BU feature reflect marsh restoration, only. The ICT-approved BU plan for this area does not include plans for cypress-tupelo forest revegetation. USACE will not add this as a formal BU feature at this time. Although historically, cypress-tupelo swamp vegetation was the predominant vegetation at this location, the salinity regime in this area is changing due to climate change and relative sea level rise, and in the long term it is unlikely that this area would be able to sustain substantial cypress-tupelo forest vegetation.
13	USACE notes a typographical error in the acres of Nourished Existing Marsh for Bessie Heights East. The acres should be 651 (rather than 615), and the total should be 1,234 rather than 1,198. Further, USACE notes that the textual descriptions, and in general, the acreage descriptions in this table, reflect the revised BU plan presented in the FEIS. It is only the figures (described in Comment responses 1, 3, and 11 that convey a previous version of the BU plan.
14	USACE has committed to continuing the ICT through the preconstruction, engineering and design (PED) and project construction phases to provide input during the development of plans and specifications for BU features and mitigation measures, and on best management practices as described in response 6 above. The ICT would continue into the operations phase to ensure that the BU and mitigation measures have been constructed as specified in the DEIS and that the goals of the compensatory mitigation plan have been fully achieved. See FEIS Appendix J for a description of the mitigation monitoring and contingency plan, which describes the role and responsibilities of the non-Federal sponsor, the Sabine Neches Navigation District (SNND). USACE notes the USFWS stated intent to request the annual transfer funds under the FWCA during the construction phase. USACE will consider such requests for years in which significant SNWW CIP construction activities are scheduled and funds are available.
15	The construction of a bird island in Sabine Lake using new work material from the SNWW was evaluated during screening of potential BU features as described in FEIS Section 2.5.3.1. The ICT (including USFWS) participated in this screening and approved the results. Construction of a bird island using new work material was found to be feasible, but the costs would exceed placement in available upland PAs. This feature was eliminated because incremental costs were higher than upland placement and no cost-share partner could be identified.
16	USACE notes that the 4 closest ODMDS sites were designated by the U.S. Environmental Protection Agency (EPA) for the continued placement of dredged material removed from the SNWW Entrance Channel (Federal Register Vol. 52, No. 175, September 10, 1987, page 34218; FEIS, 1983 [EPA, 1983a]). The siting and impacts of the existing ODMDS were evaluated by the FEIS for the maintenance dredging of the SNWW Entrance Channel (the authorized 40-ft Project (USACE, 1975). The selected sites were located as close to the shoreline as practicable.
17	PA 16A is discussed in FEIS Section 2.5.3.4.1: Areas Considered for PA Expansion. As noted in the FEIS, this area was dropped from further consideration as a PA because the existing vegetation community and hydrologic connectivity to adjacent wetlands makes this a high quality native marsh providing important habitat for native fish and wildlife. USACE concurs with the USFWS assessment of the value of this area, and therefore did not include it in the FEIS Preferred Alternative (DFR Recommended Plan).
18	PA 14A is discussed in FEIS Section 2.5.3.4.1: Areas Considered for PA Expansion. As noted in the FEIS, this area was dropped from further consideration as a PA because it provides habitat for native wildlife species, is covered by a valuable intermediate wetland, and is intermittently hydrologically connected to the riparian corridor. USACE concurs with the USFWS assessment of the value of this area, and therefore did not include it in the FEIS Preferred Alternative (DFR Recommended Plan).

19	PA 23A is discussed in FEIS Section 2.5.3.4: Existing Inactive PAs. Recommendation 1: As noted in the FEIS, existing PA23A is a leveed upland area covered by secondary growth of tallow and black willow forest. It has been extensively modified by past placement activities and levee systems that have artificially altered the hydrology. Surrounding levees hold water and isolate the area from adjacent waterbodies, preventing contributions to the function of adjacent wetlands and the riparian corridor. It contains degraded habitat with low habitat value, primarily roosting habitat and some wildlife cover. USACE maintains that WVA modeling of this isolated, non-wetland habitat is not warranted and that renewed use of this area would not constitute a significant adverse impact. Recommendation 2: The DMMP (FEIS Appendix D) estimates that this PA would be used every 6 years for the placement of maintenance material. The PA must be drained between maintenance cycles to allow the sediment to settle, consolidate and dry out sufficiently for it to be used for levee maintenance and to provide PA capacity for the next cycle. USACE cannot accommodate this recommendation because it must manage the PA to provide future capacity for maintenance material from the proposed SNWW CIP.
20	PA 24A is discussed in FEIS Section 2.5.3.4.1: Areas Considered for PA Expansion. Recommendation 1: Impacts to low quality wetlands in the proposed PA have been assessed by the WVA model and included in the impacts evaluation for the proposed SNWW CIP. In order to minimize impacts, USACE redrew the proposed boundary to exclude 144 acres of higher value marsh, reducing the proposed PA from 331 to 187 acres. The boundaries of the proposed PA are set, and the locations of the levees are constrained by the proposed PA boundaries. USACE will design discharge points to minimize impacts to adjacent high quality habitat. Recommendation 2: The DMMP (FEIS Appendix D) estimates that this PA would be used once and filled with new work material from construction of the proposed SNWW CIP. There would be no ongoing opportunities to maximize wetland characteristics as recommended.
21	PA 26 is discussed in FEIS Section 2.5.3.4: Existing Inactive PAs. Recommendation: The DMMP (FEIS Appendix D) estimates that this PA would be used every 6 years for the placement of maintenance material. The PA must be drained between maintenance cycles to allow the sediment to settle, consolidate and dry out sufficiently for it to be used for levee maintenance and to provide PA capacity for the next cycle. USACE cannot accommodate this recommendation because it must manage the PA to provide future capacity for maintenance material from the proposed SNWW CIP.
22	PA 27A is one of the active PAs discussed in FEIS Section 2.5.3.3.1: Existing Active PAs. USACE notes that USFWS does not object to its use and does not make any recommendations.
23	PA 27C is discussed in FEIS Section 2.5.3.4: Existing Inactive PAs. Recommendation: The DMMP (FEIS Appendix D) estimates that this PA would be used every 6 years for the placement of maintenance material. The PA must be drained between maintenance cycles to allow the sediment to settle, consolidate and dry out sufficiently for it to be used for levee maintenance and to provide PA capacity for the next cycle. USACE cannot accommodate this recommendation because it must manage the PA to provide future capacity for maintenance material from the proposed SNWW CIP.
24	PA 27D is discussed in FEIS Section 2.5.3.4: Existing Inactive PAs. Recommendation: The DMMP (FEIS Appendix D) estimates that this PA would be used every 6 years for the placement of maintenance material. The PA must be drained between maintenance cycles to allow the sediment to settle, consolidate and dry out sufficiently for it to be used for levee maintenance and to provide PA capacity for the next cycle. USACE cannot accommodate this recommendation because it must manage the PA to provide future capacity for maintenance material from the proposed SNWW CIP.
25	FEIS Section 5.5.1 states that the borrow trench would be located at least 1000 feet from the Sabine National Wildlife Refuge (SNWR) shoreline, and that the exact location of the trench would be determined in consultation with the ICT (which includes USFWS) during PED.
26	As recommended, USACE has reviewed calculations for the volume of dredged material needed to construct the proposed mitigation areas. USACE believes that the estimate is sufficiently accurate for feasibility planning, and notes that the estimated cost of the mitigation area includes a 30 percent contingency.
27	If any part of the recommended mitigation plan is found to be not viable after project approval, USACE and the non-Federal sponsor of the SNWW CIP would initiate consultation with the ICT, identify and incrementally justify alternative compensatory mitigation, and prepare a supplemental environmental impact statement.

28	USACE notes that the recommended Willow Bayou Mitigation Measure LA 2-18 B does not include the alternative "C" as indicated in the USFWS table.
29	USFWS concurrence with the USACE mitigation and BU plans for the proposed SNWW CIP is noted.
30	As noted in FEIS Section 7.9 USACE has requested a compatibility determination from the SNWR for the proposed Willow Bayou mitigation area.
31	USACE notes that the Louisiana mitigation measures apply to the SNWW LPP, not the NED plan. Also, the table incorrectly compares and adds restored emergent marsh acres for Total Mitigation Compensation (2,783 acres) to the net SNWW CIP project impacts as measured in AAHUs (a loss of 843 AAHUs). The estimated total loss of acres as a result of the SNWW CIP is 691 acres (FEIS Table 2.4-16).
32	See USACE response to Comment 15.
33	See USACE response to Comment 14.
34	See USACE responses to Comments 19, 20, 21, 23, and 24.
35	FEIS Section 4.11.2.1.2 evaluates the potential for impacts to oyster reef by the proposed SNWW CIP. No impacts to oyster reef are anticipated in Sabine Pass because the channel is not being widened and no slumping is expected at the top of cut. No impacts to oyster reef in Sabine Lake are anticipated because salinities are generally too low to support spat growth, as confirmed by recent survey. Furthermore, as stated in FEIS Section ES.5 and Section 5.5.1, USACE has proposed that a water bottom survey of the borrow and access channel areas in Sabine Lake be conducted during the PED phase of the project. In the unlikely event that oyster reef is encountered, plans will be revised to avoid impacts.
36	See USACE response to Comment 27.
37	See USACE response to Comment 26.
38	FEIS Sections 5.5.1 and 5.5.2 describes the proposed Willow Bayou and Black Bayou mitigation measures. The descriptions include the construction of tidal creek channels. USACE will develop construction methods and plans in consultation with the ICT (which includes USFWS) during PED.
39	See USACE response to Comment 25.
40	See USACE response to Comment 30.
41	USACE plans to construct the proposed Willow Bayou, Black Bayou East and first phase of Black Bayou West concurrently with proposed channel deepening. The remaining 5 phases of the Black Bayou West mitigation measure would be completed over approximately the next 30 years in conjunction with maintenance dredging of the Sabine River Channel.
42	The Black Bayou East and West mitigation measures are located on private property. USACE has determined that conservation easements are not required because all restored areas would remain jurisdictional wetlands and would continue to be subject to the navigational servitude (Final FR Section VIII.E).
43	FEIS Appendix J contains a mitigation and beneficial use monitoring plan that was developed in consultation with USFWS and reviewed by the ICT. USACE received one comment on the draft plan, asking that we ensure ICT involvement in the monitoring. The plan contains periodic aerial photography interpretation and vegetation surveys. Construction contracts for mitigation and BU sites would incorporate an adaptive management approach to ensure that the initial construction contracts attain the appropriate elevation over the acreage specified for emergent marsh within each mitigation site.
44	See USACE response to Comment 24.
45	FEIS Appendix J contains a mitigation and beneficial use monitoring plan that was developed in consultation with USFWS and reviewed by the ICT. If the percentage coverage of exotic and invasive species exceeds the success criteria, the ICT will develop plans to remove and manage those species.

Appendix A4

Cultural Resources Coordination

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
FEBRUARY 7, 2007

Environmental Section

Mr. Don Klima
Advisory Council on Historic Preservation
Office of Federal Agency Programs
Old Post Office Building
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004

Dear Advisory Council on Historic Preservation (Council):

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan. A full description and maps of the proposed channel improvements can be found in the enclosed Background Report (Enclosure).

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6 (c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure). The four parties include the USACE, the Jefferson County Waterways and Navigation District (JCWND) and the Texas and Louisiana State Historic Preservation Officers (SHPOs) The draft PA will also be coordinated with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Included in the Enclosure is a draft PA prepared by the USACE that has been informally coordinated with the JCWND. The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging and placement activities related to the SNWW CIP.

We are notifying the Council of our intent to negotiate the PA for the SNWW CIP and inviting your participation pursuant 36 CFR 800.6 (a)(1)(i)(C). If you have any questions, please do not hesitate to call Ms. Nicole Minnichbach at 409-766-3878.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosure:
1 Background Report & Draft PA

CC w/o Enclosure

Paul Beard
Chairman
Board of Commissioners
Jefferson County Waterway and Navigation District
2348 Highway 69 N
Nederland, TX 77627

Thomas Hales Eubanks, Ph.D.
State Archaeologist and Director
Louisiana Division of Archaeology
P.O. Box 44247
Baton Rouge, Louisiana 70804

James E. Bruseth, Ph.D.
Deputy State Historic
Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
FEBRUARY 7, 2007

Environmental Section

Thomas Hales Eubanks, Ph.D.
State Archaeologist and Director
Louisiana Division of Archaeology
P.O. Box 44247
Baton Rouge, Louisiana 70804

Dear Dr. Eubanks:

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). A full description of the proposed channel improvements can be found in the enclosed Background Report (Enclosure). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan.

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6 (c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure). Included in the Enclosure is a draft PA prepared by the USACE that has been informally coordinated with the Jefferson County Waterways and Navigation District (JCWND). The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, new or extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging activities relate to the SNWW CIP.

In summary, Galveston District requests your review of the enclosed PA. Upon receipt of your comments and finalization of the draft PA in consultation with JCWND, the USACE will coordinate a final draft PA with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Public coordination required by 800.3 (a) will be accomplished by inclusion of the final draft PA in the Draft Environmental Impact Statement, which will be made available for public review and comment. If you have any questions, please don't hesitate to call Ms. Nicole Minnichbach at 409-766-3878.

Sincerely,

for Carolyn Murphy
Chief, Environmental Section

Enclosure:
1 Background Report & Draft PA

CC w/o Enclosure

Thomas Hales Eubanks, Ph.D.
State Archaeologist and Director
Louisiana Division of Archaeology
P.O. Box 44247
Baton Rouge, Louisiana 70804

James E. Bruseth, Ph.D.
Deputy State Historic
Preservation Officer
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P.O. Box 12276
Austin, Texas 78711

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
FEBRUARY 7, 2007

Environmental Section

Mr. Paul Beard
Chairman
Board of Commissioners
Jefferson County Waterway and Navigation District
2348 Highway 69 N
Nederland, TX 77627

Dear Mr. Beard:

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). A full description of the proposed channel improvements can be found in the enclosed Background Report (Enclosure). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan.

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6 (c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure). Included in the Enclosure is a draft PA prepared by the USACE that has been revised as per your request during informal coordination. The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, new or extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging activities relate to the SNWW CIP.

In summary, Galveston District requests your review of the enclosed PA. Upon receipt of your comments and finalization of the draft PA in consultation with the Texas and Louisiana State Historic Preservation Officers (SHPOs), the USACE will coordinate a final draft PA with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Public coordination required by 800.3 (a) will be accomplished by inclusion of the final draft PA in the Draft Environmental Impact Statement, which will be made available for public review and comment. If you have any questions, please don't hesitate to call Ms. Nicole Minnichbach at 409-766-3878.

Sincerely,

for Carolyn Murphy
Chief, Environmental Section

Enclosure:
1 Background Report & Draft PA

CC w/o Enclosure

James E. Bruseth, Ph.D.
Deputy State Historic
Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Paul Beard
Chairman
Board of Commissioners
Jefferson County Waterway and Navigation District
2348 Highway 69 N
Nederland, TX 77627

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
FEBRUARY 7, 2007

Environmental Section

James E. Bruseth, Ph.D.
Deputy State Historic
Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Dear Dr. Bruseth:

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). A full description of the proposed channel improvements can be found in the enclosed Background Report (Enclosure). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan.

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6 (c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure). Included in the Enclosure is a draft PA prepared by the USACE that has been informally coordinated with the Jefferson County Waterways and Navigation District (JCWND). The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, new or extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging activities relate to the SNWW CIP.

In summary, Galveston District requests your review of the enclosed PA. Upon receipt of your comments and finalization of the draft PA in consultation with JCWND, the USACE will coordinate a final draft PA with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Public coordination required by 800.3 (a) will be accomplished by inclusion of the final draft PA in the Draft Environmental Impact Statement, which will be made available for public review and comment. If you have any questions, please don't hesitate to call Ms. Nicole Minnichbach at 409-766-3878.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosure:
1 Background Report & Draft PA

CC w/o Enclosure

Paul Beard
Chairman
Board of Commissioners
Jefferson County Waterway and Navigation District
2348 Highway 69 N
Nederland, TX 77627

Thomas Hales Eubanks, Ph.D.
State Archaeologist and Director
Louisiana Division of Archaeology
P.O. Box 44247
Baton Rouge, Louisiana 70804

Preserving America's Heritage

March 5, 2007

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

REF: Proposed Programmatic Agreement for Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Murphy:

On February 9, 2007, the ACHP received your notification and on February 19 the supporting documentation regarding potential adverse effects to historic properties associated with the construction and operation of the Sabine-Neches Waterway Channel. Based upon the information you have provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases* of our regulations "Protection of Historic Properties (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in consultation to resolve adverse effects is needed. However, if we receive a request for participation from a State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO) or other consulting party, we may reconsider this decision. Additionally, should circumstances change and you determine that our participation is required, please notify us.

Pursuant to 36 CFR 800.6(b)(1)(iv), you will need to file the final Programmatic Agreement (PA) developed in consultation with the Texas and Louisiana SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the PA and documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions, please call me at 202-606-8554.

Sincerely,

Tom McCulloch, Ph.D., R.P.A.
Program Analyst
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 809 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

MITCHELL J. LANDRIEU
LIEUTENANT GOVERNOR

State of Louisiana

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

ANGÈLE DAVIS
SECRETARY

PAM BREAUX
ASSISTANT SECRETARY

April 19, 2007

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

Re: Draft Programmatic Agreement
Sabine-Neches Waterway Channel
Improvement Project (SNWW CIP)
Cameron Parish, Louisiana

Dear Ms. Murphy:

Receipt is acknowledged of your letter dated February 7, 2007, transmitting a copy of the draft Programmatic Agreement (PA) for the proposed Sabine-Neches Waterway Channel Improvement Project (SNWW CIP).

We have completed our review of the document and have enclosed a marked-up copy with our comments. Please address our comments as appropriate and transmit a fully executed copy of the PA for our files.

Should you have any questions concerning our comments, do not hesitate to contact Duke Rivet in the Division of Archaeology at (225) 342-8170.

Sincerely,

Pam Breaux

Pam Breaux
State Historic Preservation Officer

PB:PR:s

Enclosure: as stated

Appendix A5

Public Comments

contact LTC Mark Malcolm—703–604–7047 or e-mail: Malcolm, Mark A LTC DUSA(OR).

Wayne Joyner,

Program Support Specialist, Army Science Board.

[FR Doc. 02–12700 Filed 5–20–02; 8:45 am]

BILLING CODE 3710–08–M

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare a Draft Environmental Impact Statement for Improvements to the Sabine-Neches Ship Channel Near Beaumont and Port Arthur, Texas as Published in a Resolution of the Senate Committee on Environment and Public Works, dated June 5, 1997, 105th Congress, 2nd Session

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: The proposed action to be addressed in the Draft Environmental Impact Statement (DEIS) is to evaluate several widening and deepening alternatives to improve a deep-draft navigation channel that connects harbor facilities in the Beaumont and Port Arthur area with the Gulf of Mexico. The study will focus on circulation and salinity changes associated with an improved channel and develop dredged material disposal options that will include an evaluation of beneficial uses of dredged material. The project is being maintained at its authorized depth of 40 feet and includes about 56 nautical miles of deep-draft channel. The Beaumont/Port Arthur area is located about 90 miles northeast of Houston, Texas. The local sponsor for the project is the Jefferson County Waterway and Navigation District.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and DEIS can be answered by: Ms. Lizette Richardson, (409) 766–3123, Project Manager, Project Management Branch, or Ms. Janelle Stokes, (409) 766–3039, Environmental Lead, Environmental Section, Planning Branch, Planning Environmental and Regulatory Division, P.O. Box 1229, Galveston, Texas 77553–1229.

SUPPLEMENTARY INFORMATION:

(1) *Background.* The study began in 1997 when Congress directed the Secretary of the Army to study the feasibility of modifying the channels serving the Ports of Beaumont, Port Arthur, and Orange, Texas in the interests of commercial navigation. A reconnaissance study evaluated a deepening and widening plan to establish a Federal Interest in the project. The study concluded that there was a Federal Interest in continuing studies in 1998. The feasibility study began in March 2000 and will determine the most cost-effective alternative for improving the channel while protecting the Nation's environment.

(2) a. *Alternatives.* The construction alternatives that will be evaluated in the feasibility phase are: (1) Deepening the channel to 45 ft from offshore to the Beaumont turning basin; (2) deepening the channel to 48 ft from offshore to the Beaumont turning basin ; (3) deepening the channel to 50 ft from offshore to the Beaumont turning basin ; (4) various combinations of selective widening and turning basins; 5) various combinations of selective widening and turning basins with each one of the above depths.

b. *No Action.* A ''No Action'' alternative will be evaluated and presented for comparison purposes in evaluating the various construction alternatives.

(3) *Scoping.* The scoping process will involve Federal, State and local agencies, and other interested persons and organizations. Scoping meetings are scheduled for May 28 and 29, 2002 in Lake Charles, Louisiana, and Beaumont, Texas. The time and place of these meetings will be announced in local newspapers and mailings. Issues to be discussed at these meetings include, but are not limited to, changes in salinity and circulation, changes in fresh and saltwater marshes, water and sediment quality, erosion along the channel, threatened and endangered species impacts, opportunities for ecosystem restoration, and the beneficial use of dredged material. Any person or organization wishing to provide information on issues or concerns should contact the Corps of Engineers at the above address.

4. *Coordination.* Further coordination with environmental agencies will be conducted under the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, the Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat), and the Coastal Zone Management Act under the Texas Coastal Management Program and the Louisiana Coastal Resources Program. An Interagency Coordination Team (ICT) has been formed to provide guidance and counsel on matters relating to the evaluation of environmental impacts of this project. The ICT is composed of representatives from 4 Federal agencies, 7 regulatory agencies from the States of Texas and Louisiana, the local sponsor, and the U.S. Army Corps of Engineers.

5. *DEIS Preparation.* It is estimated that the DEIS will be available to the public for review and comment in January 2004.

Carolyn E. Murphy,

Chief, Environmental Section.

[FR Doc. 02–12647 Filed 5–20–02; 8:45 am]

BILLING CODE 3710–52–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER02–517–002, et al.]

UtiliGroup, Inc., et al.; Electric Rate and Corporate Regulation Filings

May 14, 2002.

The following filings have been made with the Commission. The filings are listed in ascending order within each docket classification.

1. UtiliGroup, Inc.

[Docket No. ER02–517–002]

Take notice that on May 3, 2002, UtiliGroup, Inc. (UtiliGroup) tendered for filing with the Federal Energy Regulatory Commission (Commission) additional information to its original Petition for Acceptance of Initial Rate Schedule, Waivers and Blanket Authority filed December 10, 2001 and Amendment filed February 4, 2002.

Comment Date: May 24, 2002.

2. San Diego Gas & Electric Company

[Docket No. ER02–613–001]

Take notice that on April 30, 2002, San Diego Gas and Electric Company (SDG&E) tendered for filing with the Federal Energy Regulatory Commission (Commission) revised tariff sheets in Docket No. ER02–613–000, dated December 24, 2001, reflecting its proposed recovery of revenue requirements. Since making its filing, SDG&E determined that the revenue requirement submitted did not include recovery of franchise fees paid to the cities and counties in its service territory.

SDG&E is requesting the Commission to approve the revised revenue requirements and rates effective July 1, 2002 through December 31, 2002.

Comment Date: May 24, 2002.

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

16 December 2009

DEPARTMENT OF DEFENSE

Department of the Army; U.S. Army Corps of Engineers

Notice of Availability for the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Site Designation

AGENCY: Department of the Army, U.S. Army Corps of Engineers (USACE), Department of Defense; U.S. Environmental Protection Agency (EPA).

ACTION: Notice of Availability.

SUMMARY: The U.S. Army Corps of Engineers, Galveston District, announces the release of the Draft Feasibility Report (DFR) and the Draft Environmental Impact Statement (DEIS), the EIS for the Ocean Dredged Material Disposal Site Designation, the Draft General Conformity Determination, and the public comment period, for the Sabine Neches Navigation District's (SNND) proposed Sabine-Neches Waterway Channel Improvement Project (SNWW CIP).

DATES: The USACE, Galveston District, will be accepting written public comments on the DEIS through February 10, 2010. All comments must be postmarked by February 10, 2010.

ADDRESSES: You may send written comments to the USACE, Galveston District, Attn: Ms. Janelle Stokes, P.O. Box 1229, Galveston, TX 77553-1229, or by email to janelle.s.stokes@usace.army.mil.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and the DEIS should be directed to Ms. Janelle Stokes, (409) 766-3039, or at the email address above.

SUPPLEMENTARY INFORMATION:

Authority:-The lead agency for this proposed channel improvement action is the USACE with several cooperating agencies including EPA, the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), the Texas General Land Office,

and the Louisiana Department of Wildlife and Fisheries (LDWF). As authorized by the Senate Committee on Environment and Public Works Resolution, dated June 5, 1997, USACE has reviewed previous USACE reports on the SNWW and other pertinent reports to determine the feasibility of modifying the channels serving the ports of Beaumont, Port Arthur, and Orange, Texas, in the interest of commercial navigation.

The lead agency for the proposed action to designate four new Ocean Dredged Material Disposal Sites (ODMDS) to receive portions of new work and future maintenance material from the proposed CIP is EPA, under the authority of Section 102 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) (33 U.S.C. 1412).

Background: The USACE has joined in an agreement with the SNND to prepare a DFR and a DEIS for proposed improvements to the SNWW. The proposed SNWW CIP is intended to improve the efficiency of the deep draft navigation system while protecting the area's coastal and estuarine resources. The lead agency for the DEIS is USACE. This DEIS was prepared as required by the National Environmental Policy Act (NEPA) to present an evaluation of potential impacts associated with the proposed CIP. The DEIS is now available for public review and comment.

Project Description: The SNND proposes to increase the authorized depth of the channel from 40 to 48 feet along the entire 64-mile-long existing channel and add a 13.2-mile extension to the offshore channels into the Gulf of Mexico. The offshore navigation channels, known collectively as the Entrance Channel, are divided into the Extension Channel, the Sabine Bank Channel, the Sabine Pass Outer Bar Channel, and the Sabine Pass Jetty Channel. They would be deepened from 42 to 50 feet. The inshore channels (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. No modifications to the existing Sabine Pass Jetties are contemplated in conjunction with this project. Potential rehabilitation of the jetties is currently being studied, with the goal of preparing a long range plan of modification needed to ensure that the jetties continue to function appropriately to support the Federal navigation channel. Except for the one channel reach just beyond the jetties, the bottom width of the offshore Entrance Channel would be 700 feet wide. Since the existing Sabine Bank Channel is 800 feet wide, the bottom width of the deepened channel would be reduced to 700 feet wide. However, high currents passing around the mouth of the jetties require that the bottom width of the Sabine Pass Outer Bar Channel remain 800 feet wide, and therefore the deepened channel would be tapered to connect to the 700 foot Entrance Channel. With the exception of the Taylor Bayou basins and channels, the inshore channels would retain their existing 500 to 400 foot widths. The Taylor Bayou basins and channels would be widened to improve maneuverability for vessels using that facility. Neither the Sabine Neches Canal nor the Neches River Channel would be systematically widened, but navigation efficiency would be improved with bend easings in both reaches, and the addition or enlargement of turning and anchorage basins on the Neches River Channel.

Approximately 98 million cubic yards (mcy) of new-work dredged material would be generated from the proposed project. Maintenance dredging over the 50-year period of analysis is expected to yield approximately 650 mcy of dredged material. Dredged material will be placed in 16 existing upland placement area (PA) features and two new expansion cells at existing upland PAs. For the Entrance Channel, material will be placed in four existing and four proposed ODMDS features.

The proposed sites for the four new ODMDS are bounded by the following coordinates:

ODMDS "A"
29° 24′ 47″ N, 93° 43′ 29″ W; 29° 24′ 47″ N, 93° 41′ 08″ W
29° 22′ 48″ N, 93° 41′ 09″ W; 29° 22′ 49″ N, 93° 43′ 29″ W

ODMDS "B"
29° 21′ 59″ N, 93° 43′ 29″ W; 29° 21′ 59″ N, 93° 41′ 08″ W
29° 20′ 00″ N, 93° 41′ 09″ W; 29° 20′ 00″ N, 93° 43′ 29″ W

ODMDS "C"
29° 19′ 11″ N, 93° 43′ 29″ W; 29° 19′ 11″ N, 93° 41′ 09″ W
29° 17′ 12″ N, 93° 41′ 09″ W; 29° 17′ 12″ N, 93° 43′ 29″ W

ODMDS "D"
29° 16′ 22″ N, 93° 43′ 29″ W; 29° 16′ 22″ N, 93° 41′ 10″ W
29° 14′ 24″ N, 93° 44′ 10″ W; 29° 14′ 24″ N, 93° 43′ 29″ W

The water depth at the proposed four new ODMDS ranges from 39 to 46 feet. The bottom topography is flat, and proposed ODMDS "A", the most inshore proposed ODMDS, is approximately 19 miles from the coast at its closest point. A separate DEIS evaluating the proposed designation by EPA of the four new proposed ODMDSs accompanies the SNWW CIP DEIS as Appendix B. Beneficial uses of dredged material in the DMMP consist of the Neches River Beneficial Use (BU) Feature (Rose City East, Bessie Heights East, and Old River Cove), and the Gulf Shore BU Feature at Texas and Louisiana Points. Compensatory mitigation in the form of marsh restoration is proposed for all unavoidable environmental impacts in Louisiana.

Availability of Draft Environmental Impact Statement (DEIS): Pursuant to section 102(2)(c) of the NEPA of 1969, as amended and as implemented by the Council on Environmental Quality (40 CFR parts 1500-1508) a DEIS for the proposed SNWW CIP has been filed with the EPA and is being made available to Federal, State, and local agencies, and all interested parties. The DEIS can be viewed online at http://www.swg.usace.army.mil/. Copies of the DEIS can be requested from Ms. Janelle Stokes at the address above. In addition, copies of the DEIS are available for viewing at the following libraries:

- Beaumont Public Library, 801 Pearl, Beaumont, TX 77701.

- R.C. Miller Library, 1605 Dowlen, Beaumont, TX 77701.
- Elmo Willard Library, 3590 East Lucas, Beaumont, TX 77701.
- Theodore Johns Branch Library, 4255 Fannett, Beaumont, TX 77701.
- City of Orange Public Library, 220 N. 5th Street, Orange, TX 77630.
- Marion and Ed Hughes Public Library, 2712 Nederland Ave., Nederland, TX 77627.
- Port Arthur Public Library, 4615 9th Avenue (at Highway 73), Port Arthur, TX 77642.
- Bridge City Public Library, 101 Parkside Drive, Bridge City, TX 77611.
- Calcasieu Parish Public Library, 301 W. Claude Street, Lake Charles, LA 70605.

Water Quality Certification: The USACE is requesting §401 State Water Quality certification from Texas and Louisiana for this action. A Clean Water Act §404(b)(1) evaluation of the proposed action, provided in the DEIS (Appendix E), summarizes the results of water and sediment analyses and describes the effects of the proposed discharges. Short-term increases in turbidity may be caused by the unconfined flow of dredged material during construction of BU features and mitigation measures. Proposed channel improvements should decrease the number of vessel trips, thus decreasing the probability of a spill. All relevant sediment and water quality data for both new-work and maintenance dredging material were reviewed by a team of State and Federal resource agencies (the Contaminants Workgroup of the Interagency Coordination Team), including the Texas Commission on Environmental Quality (TCEQ) and Louisiana Department of Environmental Quality (LDEQ), and they found no cause for concern over water or sediment quality in any channel reach.

Draft General Conformity: As required by the Clean Air Act, the EPA has promulgated rules to ensure that Federal actions conform to the appropriate State Implementation Plan (SIP). The General Conformity Rule (40 CFR Part 51, Subpart W) applies to Federal actions, within maintenance or nonattainment areas. Pursuant to Section 176 of the Clean Air Act Amendments of 1990, the USACE has prepared a document entitled, "Draft General Conformity Determination, Sabine-Neches Channel Improvement Project" (Appendix F). This document will be noticed for public comment and will be submitted by the USACE to the TCEQ, EPA, and other air pollution control agencies, as appropriate, concurrently with this DEIS. As part of the General Conformity process, the USACE will make this document available to the public for review and comment for a period of 30 days. During this time, the USACE will consult with the TCEQ and the EPA seeking concurrence that emissions from the Preferred Alternative are conformant with the Texas SIP for the Beaumont-Port Arthur area. Once written confirmation is received from the TCEQ and the EPA, the USACE will prepare a Final General Conformity Determination for the proposed SNWW CIP.

Construction activities associated with the proposed CIP would result in emissions from combustion products from project dredging, support, and reuse/disposal equipment.

Pollutant emissions from construction and dredging activities may result in short-term impacts on air quality in the immediate vicinity of the project site. Emissions of volatile organic compounds for the activities subject to USACE responsibility are exempt from a General Conformity Determination because they are below the 100-ton-per-year (tpy) threshold. Estimated nitrogen oxide (NO_x) emissions for activities subject to USACE responsibility would exceed the conformity threshold of 100 tpy for all years of construction. Therefore, USACE has prepared a General Conformity Determination for NO_x emissions, which would be submitted to TCEQ, EPA, and other air pollution control agencies, as appropriate, to ensure conformity of this project with the SIP. It is expected that the Preferred Alternative would be found to conform to the Texas SIP for the Beaumont-Port Arthur non-attainment area.

Section 102 of the Marine Protection Research, and Sanctuaries Act (MPRSA): Section 102 of the MPRSA requires a determination that dredged material placement in the ocean would not reasonably degrade or endanger human health, welfare, or amenities or the marine environment, ecological systems, or economic potential (shellfish beds, fisheries, or recreational areas). Maintenance and construction dredged material proposed for placement at the existing and the proposed new ODMDSs, designated by the EPA under MPRSA, is subject to evaluation using the ocean dumping environmental criteria. The proposed new ODMDSs are outlined in Appendix B of the DEIS. The conclusion of the ODMDS Designation DEIS (Appendix B) was that the Preferred ODMDSs met all of the five general and 11 specific criteria listed in 40 CFR 228.5 and 228.6 and are, therefore, acceptable under the MPRSA. All material transported for ocean disposal would be evaluated pursuant to EPA Ocean Dumping Regulations and Criteria (MPRSA Section 102). Use of the ODMDSs would be in accordance with an approved Site Monitoring and Management Plan (SMMP, Appendix B).

National Register of Historic Places: The staff archaeologist has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible, and other sources of information. The following is current knowledge of the presence or absence of historic resources and the effects of the proposed project upon these properties: remote sensing surveys have been completed for the Outer Bar Channel, the Sabine Pass Jetty Channel, the Sabine Pass Channel, the Port Arthur Canal, the Sabine-Neches Canal, and the Neches River Channel in Jefferson and Orange counties, Texas, and Cameron Parish, Louisiana. No remote-sensing survey has been conducted for the Sabine Bank Channel, the proposed Extension Channel or the existing or proposed ODMDSs. This project would not impact NRHP-listed properties or State Archeological Landmarks; however, it may potentially adversely impact terrestrial and marine historic properties eligible for listing in the NRHP. This DEIS has been coordinated with the Texas and Louisiana State Historic Preservation Officers. A Historic Properties Programmatic Agreement (Appendix H) has been executed among the Texas and Louisiana SHPOs, the SNND and USACE to address subsequent investigations, coordinate surveys of impact areas, test potentially eligible sites, and manage data recovery or avoidance measures as necessary. Tribal coordination, required by the NHPA, has been conducted. Tribes with

historical or cultural ties to the region were contacted early in the study to identify their interests and concerns. The draft Programmatic Agreement has also been coordinated with the Tribes. No Tribes have requested to become consulting parties, and no impacts to Tribal land or traditional cultural properties have been identified.

Threatened and Endangered Species: Indications are that the proposed project may affect a few Federally listed endangered or threatened species. The project is likely to adversely affect but is not likely to jeopardize the following species: loggerhead, Kemp's ridley, hawksbill, leatherback, and green sea turtles. The project, however, is not likely to adversely affect the piping plover or its Critical Habitat, or the brown pelican. Potential impacts to the wintering piping plover would be associated with implementation of the Gulf Shore BU Feature. The recurring placement of dredged material for shoreline nourishment would affect areas of designated Critical Habitat. A Biological Assessment (BA) was prepared and was presented to the USFWS and the NMFS in the DEIS. NMFS has reviewed the BA and has prepared a Biological Opinion outlining the measures to be taken to avoid and minimize potential sea turtle takes, particularly during hopper dredging activities. The USFWS provided concurrence with the determinations made in the BA for all species under their jurisdiction, including nesting sea turtles (Appendix G).

Essential Fish Habitat (EFH): Consultation for EFH of the Magnuson-Stevens Fishery Conservation and Management Act was initiated in May 2002 with the public scoping meeting. Letters were also sent to the NMFS in April 2006. Our initial determination is the proposed action would have temporary and local impact on EFH and Federally managed fisheries in the Gulf of Mexico. In the long-term, restored marsh and improved shallow-water habitat in the proposed mitigation and Neches River BU Feature will create and benefit EFH. Open water in marshes would be improved as EFH habitat by creating smaller, shallow-water pools and channels in which fetch and turbidity are reduced. In addition, existing, sediment starved marsh within the influence areas targeted for mitigation and BU would be nourished by the winnowing of fine-grained sediments during unconfined placement of the dredged material. The requirements of the act have been met (Appendix A3).

Other Agency Authorizations: Texas and Louisiana Coastal Zone consistency certification is required. USACE has stated that the project is consistent with the Texas and Louisiana Coastal Zone Management Programs' goals and policies and will be conducted in a manner consistent with said Programs. Additional information can be found in Appendix I of the DEIS. The DEIS and Texas Coastal Consistency Determination has been submitted to the Coastal Coordination Council for review, and the Louisiana Coastal Consistency Determination has been submitted to the Louisiana Department of Natural Resources for review.

Public Comment and Public Hearing: A Public Hearing on the proposed project is scheduled for the last week of January. The specific day for the Public Hearing has not yet been determined. However, for more information on the hearing date, meeting location,

and general information, please visit http://www.swg.usace.army.mil/. Poster presentations will be available for viewing and project team members will be present to discuss the DEIS at a Workshop that will precede the hearing. The Workshop will be conducted from 5 p.m. to 6:45 p.m. on the day of the formal Hearing, and the formal Hearing will commence at 7 p.m.

Public Interest Review Factors: The DEIS will be reviewed in accordance with CEQ NEPA regulations (40 CFR Part 1500-1508), and USACE's regulation ER 200-2-2 (*Environmental Quality: Policy and Procedures for Implementing NEPA*, 33 CFR 230), and other pertinent laws, regulations and executive orders. The decision whether to recommend construction of this project to Congress will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity in the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the project, must be balanced against reasonably foreseeable detriments associated with the project. All factors which may be relevant to the project will be considered. These include, but are not limited to: dredged material management, air quality, shoreline erosion, economics, general environmental concerns, historic resources, protected species, navigation, recreation, water and sediment quality, energy needs, safety, hazardous materials, and in general, the welfare of the people.

Solicitation of Comments: The USACE is soliciting comments from the public, Federal, State, and local agencies and officials, Indian tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Comments will be considered in the evaluation of impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments will be used in preparation of the Final EIS pursuant to NEPA. Comments are also used to determine the overall public interest of the proposed activity.

16 December 2009
Date

DAVID C. WESTON
COL, EN
Commanding

Comment Date: 5 p.m. Eastern Time on Monday, December 28, 2009.

Any person desiring to intervene or to protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214) on or before 5 p.m. Eastern time on the specified comment date. It is not necessary to separately intervene again in a subdocket related to a compliance filing if you have previously intervened in the same docket. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant. In reference to filings initiating a new proceeding, interventions or protests submitted on or before the comment deadline need not be served on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St., NE., Washington, DC 20426.

The filings in the above proceedings are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. E9–30585 Filed 12–23–09; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings No. 2

December 16, 2009.

Take notice that the Commission has received the following Natural Gas Pipeline Rate and Refund Report filings:

Docket Numbers: RP10–117–001.

Applicants: Algonquin Gas Transmission, LLC.

Description: Algonquin Gas Transmission, LLC submits First Revised Sheet 590 et al to FERC Gas Tariff, Fifth Revised Volume 1 effective 12/1/09.

Filed Date: 12/11/2009.

Accession Number: 20091214–0130.

Comment Date: 5 p.m. Eastern Time on Wednesday, December 23, 2009.

Docket Numbers: RP10–188–001.

Applicants: Arlington Storage Company, LLC.

Description: Arlington Storage Company submits First Revised Sheet No 4A to FERC Gas Tariff, First Revised Volume No. 1.

Filed Date: 12/09/2009.

Accession Number: 20091210–0133.

Comment Date: 5 p.m. Eastern Time on Monday, December 21, 2009.

Any person desiring to protest this filing must file in accordance with Rule 211 of the Commission's Rules of Practice and Procedure (18 CFR 385.211). Protests to this filing will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Such protests must be filed on or before 5 p.m. Eastern time on the specified comment date. Anyone filing a protest must serve a copy of that document on all the parties to the proceeding.

The Commission encourages electronic submission of protests in lieu of paper using the ''eFiling'' link at *http://www.ferc.gov*. Persons unable to file electronically should submit an original and 14 copies of the protest to the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426.

This filing is accessible on-line at *http://www.ferc.gov*, using the ''eLibrary'' link and is available for review in the Commission's Public Reference Room in Washington, DC. There is an ''eSubscription'' link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov*, or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. E9–30584 Filed 12–23–09; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Notice of Commission Half-Day Closing

December 17, 2009.

Pursuant to Executive Order of President Barack Obama, all executive departments and other agencies of the Federal government shall be closed for the last half of the scheduled workday on Thursday, December 24, 2009, the day before Christmas Day.

In accordance with section 385.2007 of the Commission's Rules, 18 CFR 385.2007, filings and documents due to be filed on Thursday, December 24, 2009, will be accepted as timely on the next official business day.

Kimberly D. Bose,

Secretary.

[FR Doc. E9–30580 Filed 12–23–09; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–8986–8]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information, (202) 564–1399 or *http://www.epa.gov/compliance/nepa/.*

Weekly Receipt of Environmental Impact Statements

Filed 12/14/2009 Through 12/18/2009

Pursuant to 40 CFR 1506.9

Notice: In accordance with Section 309(a) of the Clean Air Act, EPA is required to make its comments on EISs issued by other Federal agencies public. Historically, EPA has met this mandate by publishing weekly notices of availability of EPA comments, which includes a brief summary of EPA's comment letters, in the **Federal Register.** Since February 2008, EPA has been including its comment letters on EISs on its Web site at: *http://www.epa.gov/compliance/nepa/eisdata.html.* Including the entire EIS comment letters on the Web site satisfies the Section 309(a) requirement

to make EPA's comments on EISs available to the public. Accordingly, after March 31, 2010, EPA will discontinue the publication of this notice of availability of EPA comments in the **Federal Register.**

EIS No. 20090438, Draft EIS, NPS, NY, Roosevelt-Vanderbilt National Historic Sites, General Management Plan, Implementation, Hyde Park, NY, Comment Period Ends: 02/22/2010, Contact: Marjorie Smith, 339–223–0131.

EIS No. 20090439, Final EIS, FHWA, ME, Aroostook County Transport Study, Route I–161 Connector, To Identify Transportation Corridors that will Improve Mobility and Efficiency within Northeastern Aroostook County and other portions of the U.S. and Canada, U.S. Army COE Section 404 Permit, Endangered Species Act, NPDES and Section 10 River and Harbors Act, Caribou, Aroostook County, ME, Wait Period Ends: 01/25/2010, Contact: Mark Hasselmann, 207–622–8355.

EIS No. 20090440, Final EIS, USFS, CO, Vail Ski Area's 2007 Improvement Project, Proposed On-Mountain Restaurant from the top of Vail Mountain to Mid Vail, Special-Use-Permit, Eagle/Holy Cross Ranger District, White River National Forest, Eagle County, CO, Wait Period Ends: 01/25/2010, Contact: Don Dressler, 970–945–3212.

EIS No. 20090441, Final Supplement, FHWA, TN, Shelby Avenue/Demonbreun Street (Gateway Boulevard Corridor, from I–65 North [I–24 West] to I–40 West in Downtown Nashville, To Address Transportation needs in the Study Area. Davidson County, TN, Wait Period Ends: 01/25/2010, Contact: Charles J. O'Neill, 615–781–5770.

EIS No. 20090442, Draft EIS, USACE, 00, Sabine-Neches Waterway Channel Improvement Project, Proposed Ocean Dredged Material Disposal Site Designation, Southeast Texas and Southwest Louisiana, Comment Period Ends: 02/10/2010, Contact: Janelle Stokes, 409–766–3039.

EIS No. 20090443, Final EIS, FHWA, DC, ADOPTION—Department of Homeland Security Headquarters at the St. Elizabeths West Campus, To Consolidate Federal Office Space on a Secure Site, Washington, DC, Contact: Jack VanDop, 703–404–6282. The U.S. Department of Transportation's, Federal Highway Administration (DOT/FHWA) has ADOPTED the U.S. General Services Administration FEIS #20080452, filed on 10/31/2008. DOT/FHWA was a Cooperating Agency for the above project. Recirculation of the FEIS is not necessary under 40 CFR 1506.3(c).

EIS No. 20090444, Final EIS, USA, NM, White Sands Missile Range (WSMR), Development and Implementation of Range-Wide Mission and Major Capabilities, NM, Wait Period Ends: 01/25/2010, Contact: Jennifer Shore, 703–602–4238.

EIS No. 20090445, Draft EIS, USFS, ID, Boise National Forest Project, Proposed Amendments to the Land and Resource Management Plan, Wildlife Conservation Strategy (WCS) Phase 1: Forested Biological Community, Located within Portions of Ada, Boise, Elmore, Gem, and Valley Counties, ID, Comment Period Ends: 03/24/2010, Contact: Cyd Weiland, 208–373–4135.

EIS No. 20090446, Final EIS, USFS, VT, Jarbidge Ranger District Rangeland Management Project, Proposed Reauthorizing Grazing on 21 Existing Grazing Allotments, Humboldt Toiyabe National Forest, Elko County, NV, Wait Period Ends: 12/25/2009, Contact: Vernon Keller, 775–355–5356.

EIS No. 20090447, Final EIS, USACE, AL, Foley Land Cut Portion of the Gulf Intracoastal Waterway, Proposed Construction of Residential, Commercial and Marine Development, Gulf Shores and Orange Beach, Baldwin County, AL, Wait Period Ends: 01/25/2010, Contact: Linda Brown, 251–694–3786.

Amended Notices

EIS No. 20090424, Draft EIS, USN, AK, Gulf of Alaska Navy Training Activities, Proposal to Support and Conduct Current, Emerging, and Future Training Activities, Implementation, Gulf of Alaska, AK, Comment Period Ends: 01/25/2010, Contact: Amy Burt, 360–396–0924. Revision to FR Notice Published 12/11/2009: Correction to Contact Telephone Number.

EIS No. 20090433, Final EIS, USFS, CA, Lassen National Forest, Motorized Travel Management Plan, Implementation, Butte, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama Counties, CA, Wait Period Ends: 01/19/2010, Contact: Christopher O'Brien, 530–252–6698. Revision to FR Notice Published 12/18/2009: Correction to Contact Telephone Number.

EIS No. 20090435, Draft EIS, APHIS, 00, Glyphsate-Tolerant Alfalfa Events J101 and J163: Request for No regulated Status, Implementation, United States, Comment Period Ends: 02/16/2010, Contact: Cindy Eck, 301–734–0667. Revision to FR Notice Published 12/18/2009: Correction to Contact Telephone Number.

Dated: December 21, 2009.

Pearl E. Young,

NEPA Compliance Division, Office of Federal Activities.

[FR Doc. E9–30588 Filed 12–23–09; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

Sunshine Notice

December 17, 2009.

TIME AND DATE: 10 a.m., Thursday, January 7, 2010.

PLACE: The Richard V. Backley Hearing Room, 9th Floor, 601 New Jersey Avenue, NW., Washington, DC.

STATUS: Open.

MATTERS TO BE CONSIDERED: The Commission will consider and act upon the following in open session: *Secretary of Labor* v. *Cumberland Coal Resources, LP*, Docket Nos. PENN 2008–51–R, *et seq.* (Issues include whether an order issued to the operator under 30 CFR 75.363(a) (requiring that hazardous conditions be corrected or posted) should be amended to allege a violation of 30 CFR 75.360(b) (requiring that the person conducting a preshift examination identify hazardous conditions).)

Any person attending this meeting who requires special accessibility features and/or auxiliary aids, such as sign language interpreters, must inform the Commission in advance of those needs. Subject to 29 CFR 2706.150(a)(3) and 2706.160(d).

CONTACT PERSON FOR MORE INFO: Jean Ellen, (202) 434–9950/(202) 708–9300 for TDD Relay/1–800–877–8339 for toll free.

Jean H. Ellen,

Chief Docket Clerk.

[FR Doc. E9–30591 Filed 12–22–09; 11:15 am]

BILLING CODE 6735–01–P

FEDERAL TRADE COMMISSION

Agency Information Collection Activities; Proposed Collection; Comment Request

AGENCY: Federal Trade Commission (''FTC'' or ''Commission'').

ACTION: Notice.

SUMMARY: The information collection requirements described below will be

www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters and any form of encryption and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.*

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the OEI Docket in the EPA Headquarters Docket Center.

Dated: February 12, 2010.

Rebecca Clark,

Director, National Center for Environmental Assessment.

[FR Doc. 2010–3240 Filed 2–18–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–8988–2]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–1399 or *http://www.epa.gov/compliance/nepa/.*

Weekly Receipt of Environmental Impact Statements

Filed 02/01/2010 through 02/12/2010. Pursuant to 40 CFR 1506.9.

Notice

In accordance with Section 309(a) of the Clean Air Act, EPA is required to make its comments on EISs issued by other Federal agencies public. Historically, EPA has met this mandate by publishing weekly notices of availability of EPA comments, which includes a brief summary of EPA's comment letters, in the **Federal Register.** Since February 2008, EPA has been including its comment letters on EISs on its Web site at: *http://www.epa.gov/compliance/nepa/eisdata.html.* Including the entire EIS comment letters on the Web site satisfies the Section 309(a) requirement to make EPA's comments on EISs available to the public. Accordingly, after March 31, 2010, EPA will discontinue the publication of this notice of availability of EPA comments in the **Federal Register.**

Federal Offices in Washington, DC, were closed because of inclement weather from February 8–11, 2010. Accordingly the Notice of Availability for the Weekly Receipt of Environmental Impact Statements filed 02/01/2010 through 02/05/2010 was not published in the **Federal Register** on February 12, 2010.

EIS No. 20100033, Draft EIS, BLM, CA Chevron Energy Solutions Lucerne Valley Solar Project, Proposing To Develop a 45-megawatt (MW) Solar Photovoltaic (PV) Plant and Associated Facilities on 516 Acres of Federal Land Managed, California Desert Conservation Area Plan Amendment, San Bernardino County, CA, Comment Period Ends: 05/19/2010, Contact: Greg Thomsen 951–697–5237.

EIS No. 20100034, Final EIS, USFWS, CA, Hatchery and Stocking Program. Operation of 14 Trout Hatcheries and the Mad River Hatchery for the Anadromous Steelhead, Federal Funding, California Department of Fish and Game, CA, Wait Period Ends: 03/22/2010, Contact: Bart Prose 916–978–6152.

EIS No. 20100035, Draft EIS, USACE, TX, Lake Columbia Regional Water Supply Reservoir Project, Proposes to Construct, Operate and Maintain a Dam and Reservoir, Mud Creek, Angelina River, Cherokee and Smith Counties, TX, Comment Period Ends: 04/05/2010, Contact: Brent Jasper 817–886–1733.

EIS No. 20100036, Final EIS, BR, CA, New Melones Lakes Area Resource Management Plan, Implementation, Tuolumne and Calaveras Counties, CA, Wait Period Ends: 03/22/2010, Contact: Melissa Vignau 916–989–7182.

EIS No. 20100037, Second Draft Supplement, USFS, 00, Sierra Nevada Forest Plan Amendment, Proposes to Provide an Objective Comparison of all of the Alternatives for 2004 Final EIS, Amending Land and Resource Management Plans, Modoc, Lasser, Plumas, Tahoe, Eldorado, Stanislaus, Sequoia, Sierra, Inyo and Humboldt-Toiyabe National Forests, and the Lake Tahoe Basin Management Unit, Several Counties, CA and NV, Comment Period Ends: 04/05/2010, Contact: Randy Moore 707–562–8737.

EIS No. 20100038, Draft Supplement, FSA, 00, PROGRAMMATIC—Conservation Reserve Program (CRP), Implement Certain Changes to the CRP as Enacted by Congress in the 2008 Farm Bill, in the United States, Comment Period Ends: 04/05/2010, Contact: Mathhew T. Ponish 202–720–6853.

EIS No. 20100039, Final EIS, WAPA, 00, ADOPTION—Southwest Intertie Project, Construction and Operation, 500kV Transmission Line from the existing Midpoint substation near Shoshone, ID to a new substation site in the Dry Lake Valley of Las Vegas, NV area to a point near Delta, UT, Permits Approval and C, Wait Period Ends: 03/22/2010, Contact: Mathew Blevins 720–962–7621. U.S. DOE/WAPA has adopted the BLM's FEIS #19930233, filed 07/09/1993. WAPA was not a Cooperating Agency for the above FEIS. Accordingly, recirculation of the document is necessary under Section 1506.3(b) of the CEQ Regulations.

EIS No. 20100040, Draft EIS, NRC, IA, GENERIC—License Renewal of Nuclear Plants (GEIS) Regarding Duane Arnold Energy Center, Supplement 42 to NUREG–1437, near the Town of Palo, Linn County, IA, Comment Period Ends: 04/19/2010, Contact: Charles H. Eccleston 301–415–8537.

EIS No. 20100041, Final EIS, FHWA, MI, US–31 Holland to Grand Haven Project, Transportation Improvement to Reduce Traffic Congestation and Delay, Ottawa County, MI, Wait Period Ends: 03/22/2010, Contact: David T. Williams 517–702–1820.

EIS No. 20100042, Final EIS, USACE, CA, Natomas Levee Improvement Program Phase 4a Landside Improvement Project, Issuing of 408 Permission and 404 Permits, California Department of Water Resources (DWR) and the California Central Valley Flood Protection Board, Sutter and Sacramento Counties, CA, Wait Period Ends: 03/22/2010, Contact: Elizabeth Holland 916–557–6763.

EIS No. 20100043, Final EIS, FHWA, IA, Southeast (SE) Connector in Des Moines, Iowa, To Provide a Safe and Efficient Link between the MLK Jr. Parkway at SE 14th Street to the U.S. 65 Bypass, Funding, U.S. Army COE

Section 404 and NPDES Permits, Polk County, IA, Wait Period Ends: 03/22/2010, Contact: Lubin Quinones 515–233–7300.

EIS No. 20100044, Final EIS, USFS, CA, Lower Trinity and Mad River Motorized Travel Management, Proposed to Prohibit Cross-Country Motor Vehicle Travel Off Designated National Forest Transportation System (NFTS) Roads and Motorized Trails, Six River National Forest, CA, Wait Period Ends: 03/22/2010, Contact: Linda West 707–441–3561.

Amended Notices

EIS No. 20090442, Draft EIS, USACE, 00, Sabine-Neches Waterway Channel Improvement Project, Proposed Ocean Dredged Material Disposal Site Designation, Southeast Texas and Southwest Louisiana, Comment Period Ends: 03/12/2010, Contact: Janelle Stokes 409–766–3039.

Revision to FR Notice Published 12/24/2009: Extending Comment Period from 02/10/2010 to 03/12/2010.

Dated: February 16, 2010.

Robert W. Hargrove,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2010–3241 Filed 2–18–10; 8:45 am]

BILLING CODE 6560–50–P

FARM CREDIT ADMINISTRATION

Farm Credit Administration Board; Sunshine Act; Regular Meeting

AGENCY: Farm Credit Administration.

SUMMARY: Notice is hereby given, pursuant to the Government in the Sunshine Act (5 U.S.C. 552b(e)(3)), that the February 11, 2010 regular meeting (75 FR 6393, February 9, 2010) of the Farm Credit Administration Board (Board) has been rescheduled due to the recent inclement weather in the Washington DC metropolitan area.

DATE AND TIME: The regular meeting of the Board will now be held at the offices of the Farm Credit Administration in McLean, Virginia, on February 24, 2010, from 9 a.m. until such time as the Board concludes its business.

FOR FURTHER INFORMATION CONTACT: Roland E. Smith, Secretary to the Farm Credit Administration Board, (703) 883–4009, TTY (703) 883–4056.

ADDRESSES: Farm Credit Administration, 1501 Farm Credit Drive, McLean, Virginia 22102–5090.

SUPPLEMENTARY INFORMATION: This meeting of the Board will be open to the public (limited space available). In order to increase the accessibility to Board meetings, persons requiring assistance should make arrangements in advance. Two of the three agenda items have been removed for this rescheduled meeting. The matter to be considered at the meeting is:

Open Session

- *Approval of Minutes*
  - January 14, 2010

Dated: *February 16, 2010.*

Roland E. Smith,

Secretary, Farm Credit Administration Board.

[FR Doc. 2010–3356 Filed 2–17–10; 4:15 pm]

BILLING CODE 6705–01–P

FEDERAL COMMUNICATIONS COMMISSION

[IB Docket No. 04–286; DA 10–245]

Fourth Meeting of the Advisory Committee for the 2012 World Radiocommunication Conference Rescheduled to March 2, 2010

AGENCY: Federal Communications Commission.

ACTION: Notice.

SUMMARY: In accordance with the Federal Advisory Committee Act, as amended, this notice advises interested persons that the fourth meeting of the WRC–12 Advisory Committee will be held at the Federal Communications Commission. The purpose of the meeting is to continue preparations for the 2012 World Radiocommunication Conference. The WRC–12 Advisory Committee will consider any preliminary views and draft proposals introduced by the WRC–12 Advisory Committee's Informal Working Groups. The meeting, originally scheduled for February 10, 2010 as published in the **Federal Register**, Vol. 75, No. 9 on January 14, 2010, was postponed due to the closure of the Federal Government because of inclement weather. Less than 15 calendar days notice of the rescheduled meeting is being provided due to the need to receive the WRC–12 Advisory Committee's recommendations to provide timely input to the meeting of the Inter-American Telecommunication Commission (CITEL).

DATES: March 2, 2010, 11 a.m. to 12 noon.

ADDRESSES: Federal Communications Commission, 445 12th Street, SW., Room TW–C305, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Alexander Roytblat, Designated Federal Official, WRC–12 Advisory Committee, FCC International Bureau, Strategic Analysis and Negotiations Division, at (202) 418–7501.

SUPPLEMENTARY INFORMATION: The Federal Communications Commission established the WRC–12 Advisory Committee to provide advice, technical support and recommendations relating to the preparation of United States proposals and positions for the 2012 World Radiocommunication Conference (WRC–12).

In accordance with the Federal Advisory Committee Act, Public Law 92–463, as amended, this notice advises interested persons of the fourth meeting of the WRC–12 Advisory Committee. The WRC–12 Advisory Committee has an open membership. All interested parties are invited to participate in the WRC–12 Advisory Committee and to attend its meetings. The proposed agenda for the fourth meeting is as follows:

Agenda

Fourth Meeting of the WRC–12 Advisory Committee, Federal Communications Commission, 445 12th Street, SW., Room TW–C305, Washington, DC 20554.

March 2, 2010, 11 a.m. to 12 noon

1. Opening Remarks
2. Approval of Agenda
3. Approval of the Minutes of the Third Meeting
4. Informal Working Group Reports and Documents Relating to Preliminary Views
5. New Guidelines for Federal Advisory Committee Membership
6. Future Meetings
7. Other Business

Federal Communications Commission.

Mindel De La Torre,

Chief, International Bureau.

[FR Doc. 2010–3292 Filed 2–18–10; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL DEPOSIT INSURANCE CORPORATION

Notice of Agency Meeting

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that at 10:10 a.m. on Wednesday, February 17, 2010, the Board of Directors of the Federal Deposit Insurance Corporation met in closed session to consider matters related to the Corporation's supervision, resolution, and corporate activities.

In calling the meeting, the Board determined, on motion of Vice Chairman Martin J. Gruenberg,

Barwil

Barwil Agencies (NA), Inc.
85 IH-10 North, Suite 105
Beaumont, TX 77707

Telephone: 409-832-6700
Fax: 409-832-2031
Telex: 6734231
Cable: BARWILBM

May 16, 2000

Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229

Mr. Frank Garcia,

I have just received the notice for the meeting concerning the Sabine-Neches Waterway, Texas Feasibility Study. I will not be able to attend the meeting, but would like to take this opportunity to give you my comments.

I am the Assistant Manager for Barwil Agencies (NA) Inc., a worldwide steamship agency with an office in Beaumont, Texas. In case you are not familiar with what we do, here is a brief description. We are the agents for foreign and U.S. Flag vessels that come into the ports of Port Arthur, Beaumont, and Orange, Texas. We attend the vessels on behalf of the owners and/or charters and assist in an efficient port stay and turn around.

With the current status of the Sabine-Neches Waterway, I feel that it is close to reaching its capacity for vessel traffic movement and without improvements our ports will not be competitive enough to attract new business or maintain the current level. If the information I have is correct, the combined ports of Port Arthur, Beaumont and Orange, Texas make the fourth busiest port in the Nation. With the multi-million dollar expansions at the Fina Refinery and the Clark Refinery and with the Exxon/Mobil merger this will only serve to increase the vessel traffic volume on our waterway. Approximately 75 to 80 percent and in some cases more, the crude oil used by the local refineries comes via the waterway by vessels.

Not only would waterway improvements help the refineries it would also be beneficial to the ports themselves and open up more opportunities for grain, bag products and forest products. Keeping in mind the environmental impact that deepening and widening the Sabine-Neches Waterway would have, I believe it is imperative that improvements to be made. If this issue is not addressed in a timely manner, economic growth and individual jobs could be lost.

Thank you for your time and the opportunity to make comments.

Sincerely,

Andy Collins

Andy Collins
Assistant Manager
Barwil Agencies (NA) Inc.

STREAM PROPERTY MANAGEMENT, INC.
P.O. Box 40
Lake Charles, Louisiana 70602

June 8, 2000

Richard D. Tomlinson, P.E.
Project Manager
Department of the Army
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

Re: Sabine-Neches Waterway
Texas Feasibility Study

Dear Mr. Tomlinson:

The Sabine-Neches Waterway Texas Feasibility Study should include the environmental concerns and potential impacts on the marshes east of Sabine Lake in Louisiana. The potential impacts of saltwater intrusion, increased tidal fluctuation, decreased freshwater retention and vegetative marsh loss are immense. The dredging of the channel from 1912 through 1962 and maintained through this year has been directly responsible for the loss of approximately 50,000 acres of vegetative marsh in Louisiana in the Sabine wetland basin. The environmental concerns for the vegetative wetland loss are of grave concern to myself as a landowner and other concerned citizens. Louisiana involvement as a stakeholder in this process needs to be emphasized in the feasibility study due to the fact that the majority of wetlands affected are located in Louisiana.

By this means we would suggest that the historical hydrology and the wetland diversity be re-established in the Sabine Lake system. The widening and deepening of the Sabine-Neches waterway will cause further marsh loss to an already stressed and fragile system. This feasibility study, through hydrologic modeling and other methods, will identify the problems in the Sabine ecosystem. We would suggest in the absence of a lock at the mouth of the Sabine Pass Channel, that there be at least a constriction at the causeway at its junction with Highway 82 and the separation of the Sabine Lake from the navigation channel along the northern boundary of Sabine Lake . Hydrologic protection should also include maintenance and construction of water control structures along inlets into

the wetlands east of Sabine Lake. There are many wildlife and wetland issues involved in these wetlands due to the historical diversity in this area. This project, as presently proposed with no environmental components, will have significant adverse impacts on my land in Cameron Parish. We emphasize the environmental, social, and economic concerns in our area and expect to be kept abreast of the study as it progresses.

Thank you for the opportunity to have input in the early stages of this feasibility study. We look forward to working with you very closely in the future.

Sincerely,

David Richard

DR:kd

CC: Congressman Chris John
1504 Longworth House Office Building
Washington, D.C. 20515

Congressman Nick Lampson
417 Cannon House Office Building
Washington, D.C. 20515-4309

OLD SOUTH WETLANDS, LLC
100 JYRO LANE
CARENCRO, LA 70520

June 21, 2000

Richard D. Tomlinson, P.E.
Project Manager
Department of the Army
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77552-1229

Re: Sabine-Neches Waterway
Texas Feasibility Study

Dear Mr. Tomlinson:

I am purchasing property in Cameron Parish Louisiana which has frontage on the lower Sabine River near its entrance into Sabine Lake and I am very concerned about the impact of the proposed Sabine-Neches Channel Improvement Project. I would be very much opposed to any project which would cause any environmental damage or ecological changes to this area such as saltwater intrusion, increased tidal fluctuation, decreased freshwater retention, or marsh loss. The State of Louisiana and the Federal Government are doing everything possible to stop coastal wetland loss and I would not want to see any project take place whose effect is antagonistic to these efforts. I would hope that every effort would be taken to take environmental concerns into consideration as related to this project.

Thank you for the opportunity to express my concerns. Please keep me informed as the project progresses.

Sincerely,

Randy Richard

Paula – pls add Mr. Richard to your list – thanks!
Richard

JAMES C. ROBINSON
230 WEST PRIEN LAKE ROAD
LAKE CHARLES, LA. 70601

July 5, 2000

Richard D. Tomlinson, P.E.
Project Manager
Department of the Army
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

Re: Sabine-Neches Waterway
Texas Feasibility Study

Dear Mr. Tomlinson:

The Sabine-Neches Waterway Texas Feasibility Study should include the environmental concerns and potential impacts on the marshes east of Sabine Lake in Louisiana. The potential impacts of saltwater intrusion, increased tidal fluctuation, decreased freshwater retention and vegetative marsh loss are immense. The dredging of the channel from 1912 through 1962 and maintained through this year has been directly responsible for the loss of approximately 50,000 acres of vegetative marsh in Louisiana in the Sabine wetland basin. The environmental concerns for the vegetative wetland loss are of grave concern to myself as a landowner and other concerned citizens. Louisiana involvement as a stakeholder in this process needs to be emphasized in the feasibility study due to the fact that the majority of wetlands affected are located in Louisiana.

By this means we would suggest that the historical hydrology and the wetland diversity be re-established in the Sabine Lake system. The widening and deepening of the Sabine-Neches waterway will cause further marsh loss to an already stressed and fragile system. This feasibility study, through hydrologic modeling and other methods, will identify the problems in the Sabine ecosystem. We would suggest in the absence of a lock at the mouth of the Sabine Pass Channel, that there be at least a constriction at the causeway at its junction with Highway 82 and the separation of the Sabine Lake from the navigation channel along the northern boundary of Sabine Lake . Hydrologic protection should also include maintenance and construction of water control structures along inlets into

the wetlands east of Sabine Lake. There are many wildlife and wetland issues involved in these wetlands due to the historical diversity in this area. This project, as presently proposed with no environmental components, will have significant adverse impacts on my land in Cameron Parish. We emphasize the environmental, social, and economic concerns in our area and expect to be kept abreast of the study as it progresses.

Thank you for the opportunity to have input in the early stages of this feasibility study. We look forward to working with you very closely in the future.

Sincerely,

James C. Robinson

DR:kd

CC: Congressman Chris John
1504 Longworth House Office Building
Washington, D.C. 20515

Congressman Nick Lampson
417 Cannon House Office Building
Washington, D.C. 20515-4309

A. R. DOOLEY, JR.
CHAIRMAN

2575 Ashley
Beaumont, TX 77702

July 7, 2000

Department of the Army
Galveston District Corps of Engineers
P. O. Box 1229
Galveston Texas 77553-1229

Gentlemen,

Please change my address to:

A. R. Dooley, Jr.
2575 Ashley
Beaumont, TX 77702

Here is a label from the recent mailing to me regarding the Sabine-Neches Waterway Feasibility Study.

SWG-PE-P 1332970/04/11/00/24/
- - - - - - - - - - - - - - -
A. R. DOOLEY
229 DOWLEN
BEAUMONT TX 77706

Thank you.

A. R. Dooley, Jr

DOOLEY TACKABERRY
Fire & Safety - Equipment/Services/Systems
4849 Cardinal Drive • Beaumont, Texas 77705 USA
Voice: 409.835.7696 • Fax: 409.835.7695 • email: rhew@dtihome.com

HYDRAULIC DREDGES – DRAGLINES – SPUD BARGES

MIKE HOOKS INC.

P.O. BOX 1525 • LAKE CHARLES, LA 70602

409 Mike Hooks Road
Westlake, LA 70669

General Dredging & Marine Contractors

PHONE (337) 436-6693
FAX (337) 433-8701

July 10, 2000

Richard D. Tomlinson, P.E.
Project Manager
Department of the Army
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

Re: Sabine-Neches Waterway
Texas Feasibility Study

Dear Mr. Tomlinson:

The Sabine-Neches Waterway Texas Feasibility Study should include the environmental concerns and potential impacts on the marshes east of Sabine Lake in Louisiana. The potential impacts of saltwater intrusion, increased tidal fluctuation, decreased freshwater retention and vegetative marsh loss are immense. The dredging of the channel from 1912 through 1962 and maintained through this year has been directly responsible for the loss of approximately 50,000 acres of vegetative marsh in Louisiana in the Sabine wetland basin. The environmental concerns for the vegetative wetland loss are of grave concern to myself as a landowner and other concerned citizens. Louisiana involvement as a stakeholder in this process needs to be emphasized in the feasibility study due to the fact that the majority of wetlands affected are located in Louisiana.

By this means we would suggest that the historical hydrology and the wetland diversity be re-established in the Sabine Lake system. The widening and deepening of the Sabine-Neches waterway will cause further marsh loss to an already stressed and fragile system. This feasibility study, through hydrologic modeling and other methods, will identify the problems in the Sabine ecosystem. We would suggest in the absence of a lock at the mouth of the Sabine Pass Channel, that there be at least a constriction at the causeway at its junction with Highway 82 and the separation of the Sabine Lake from the navigation channel along the northern boundary of Sabine Lake. Hydrologic protection should also include maintenance and construction of water control structures along inlets into the

wetlands east of Sabine Lake. There are many wildlife and wetland issues involved in these wetlands due to the historical diversity in this area. This project, as presently proposed with no environmental components, will have significant adverse impacts on my land in Cameron Parish. We emphasize the environmental, social, and economic concerns in our area and expect to be kept abreast of the study as it progresses.

Thank you for the opportunity to have input in the early stages of this feasibility study. We look forward to working with you closely in the future.

Sincerely,

T. A. Hooks.

TH:gs

CC: Congressman Chris John
1504 Longworth House Office Building
Washington, D.C. 20515

Congressman Nick Lampson
417 Cannon House Office Building
Washington, D.C. 20515-4309

CENTURY GROUP

Century Group Inc.
P.O. Box 228
Sulphur, Louisiana 70664-0228
Tel: 1-800-527-5232, Ext. 147
Fax: 1-800-887-2153
E-Mail: sales@centurygrp.com
Website: www.centurygrp.com

July 13, 2000

Richard D. Tomlinson, P. E.
Project Manager
Department of the Army
Galveston District
U. S. Army Corps of Engineers
P. O. Box 1229
Galveston, TX 77553-1229

Re: Sabine – Neches Waterway
Channel Improvements Project

Dear Mr. Tomlinson:

As a landowner of approximately 1,200 acres of marshland adjacent within 2 miles of the Sabine River and Sabine Lake, I would like to express my concern over the deepening and widening of the channels serving the ports of Beaumont and Orange. Because of channelization in the past, marshlands east of Sabine Lake in Louisiana have realized increased salt water intrusion and tidal fluctuations which have had a negative impact in regards to erosion and loss of vegetation essential for a healthy marine estuary.

It is our hopes that your agency will strongly consider implementing measures that will not only stop further destruction of these fragile wetlands, but will help return the Sabine River basin to its historical state.

As a landowner on the lower Calcasieu River Estuary I can forewarn you that the widening and deepening of this channel will only accelerate the destruction and loss of these wetlands. We are witnessing firsthand rapid erosion and loss of marshland because of the tidal fluctuations caused by the Calcasieu River Ship Channel.

C:\Data\JRV\PRECAST\US Army Corp of Engineers Tomlinson 07132000.doc

I appreciate the opportunity to be able to express my concerns and ask that I be included on the mailing list of this project so that I can be kept informed of the progress of this study. Your consideration is greatly appreciated.

Should you have any questions please feel free to contact me at 1-800-527-5232, Ext. 109.

Sincerely,
CENTURY GROUP INC.

Rusty Vincent

Rusty Vincent
President/CEO
Railroad Products Division
P. O. Box 228
Sulphur, LA 70664-0228

Cc: Congressman Chris Johns
1504 Longworth House Office Building
Washington, DC 20515

Congressman Nick Lampson
417 Cannon House Office Building
Washington, DC 20515-4309

RV/cmt

T. BARRY WILKINSON
ATTORNEY AT LAW
769 SEVENTH STREET
P. O. BOX 588
PORT ALLEN, LA 70767

TELEPHONE
(225) 383-3020

FACSIMILE
(225) 336-9919

July 25, 2000

Mr. Richard D. Tomlinson, P.E.
Project Manager
Department of the Army
Galveston District
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

RE: Sabine-Neches Waterway
Texas Feasibility Study

Dear Mr. Tomlinson:

I was recently made aware of the Sabine-Neches Waterway channel improvement project planned with the U.S. Army Corps of Engineers. I understand that a feasibility study is going to be undertaken regarding this project. I represent the owners of wetlands and marshes lying east of the Sabine Lake in Louisiana. We have occupied this property in excess of thirty-three years. In that regard, we have already seen drastic changes in our marsh vegetation and salt water intrusion. The changes have been most pronounced in the last three to five years. However, the changes are for the worse and seem to be accelerating in the last year or two. It appears from the planned project that without due consideration and counter balancing measures that this project will further accelerate the negative impacts of salt water intrusion, increase tidal fluctuation, decreased fresh water retention and vegetative marsh loss. I realize that the project is probably a needed project from an economic standpoint. However, with the proper study and input I am certain that proper measures can be taken to lessen the negative impact of salt water intrusion, increased tidal fluctuation, decreased fresh water retention and vegetative marsh loss. It has been suggested that a lock at the mouth of the Sabine Pass Channel would help immensely in this regard. If this is too costly or not feasible then there should be at least some sort of constriction near the causeway at its junction with Highway 82 and the separation of the Sabine Lake from the navigation channel along the northern boundary of Sabine Lake. Other recommended measures are the maintenance and construction of water controlled structures along the numerous inlets into the wetlands east of Sabine Lake. Without these measures being taken I fear that there will eventually be a total destruction and loss of the wetlands and

marshes as we have historically known them. Again, I must emphasize that without the implementation of the currently proposed project we are already having immense problems in this regard. Thank you for allowing me to provide some input in the early stages of this feasibility study. I would appreciate being kept notified of developments and the opportunity to further participate in this process.

If you have any questions, please contact me.

Very truly yours,

T. Barry Wilkinson

cc: Congressman Chris John
1504 Longworth House Office Building
Washington, D.C. 20515

Congressman Nick Lampson
417 Cannon House Office Building
Washington, D.C. 20515-4309

WEST CAMERON PORT COMMISSION

P. O. Box 1160
Cameron, Louisiana

Clifton Cabell, President
Jimmy Brown, Vice-President
Greg Wicke, Secretary
Terry Hebert, Treasurer

Board Members
Rodney Guilbeaux
Robert Manuel
Wendell Wilkerson
Sammy Faulk
J.P. Constance

July 26, 2000

Major Randy L. Turner, Deputy District Engineer
Department of the Army
Galveston District Corps of Engineers
P. O. Box 1229
Galveston, TX 77553-1229

Re: Sabine-Neches Waterway, Texas Feasibility Study

Dear Major Turner:

The West Cameron Port Commission is concerned about the impact this navigation project would have on saltwater intrusion into the swamps and marshes of the Calcasieu-Sabine Basin east of Sabine River and Sabine Lake. These marshes have already suffered catastrophic losses due to hydrologic alterations. It is imperative that this feasibility study evaluate the potential impacts to the Louisiana and Texas coastal marsh ecosystem from these hydrologic alterations.

In essence, we the West Cameron Port Harbor & Terminal Commission stand in opposition to the widening and deepening of the channel.

Sincerely,

Clifton Cabell, President
WEST CAMERON PORT COMMISSION

letter
pieces so I copied
it for you.

(5)

Carolyn Thibodeaux
337-775-5046 (H)
337-775-7877 (F)
beachesCT@netscape.com

CAMERON PRESERVATION ALLIANCE

SABINE PASS LIGHTHOUSE, INC.
P.O. BOX 773
CAMERON, LA 70631
www.sabinelighthouse.org

Ms. Carolyn Thib.
Mr. Ernest Granger, V.
Mrs. Hilda Crain, . Grand
Mrs. Cindy McGee, S Johnson
Mrs. Marianna Primeaux, At . Camer

October 10, 2001

Senator Mary Landrieu
United States Senate
Washington, DC 70510-1804

Dear Senator Landrieu:

The Cameron Preservation Alliance - Sabine Pass Lighthouse, Inc. request to be put on your mailing list to be notified of any correspondence, meetings or activities concerning the dredging, widening, and any other projects in which the Sabine Ship Channel is included.

We are very concerned about activities on-going in this area. The on- going Corp of Engineers project to dredge the Sabine River and dump the spoils on the banks of the river is very disturbing. There is a grove of 40 year old trees that will be destroyed It is my understanding that the "Back to Nature" idea means that our government would take the lead in protecting and saving important areas such as this for fu' generations. This is a beautiful natural area with an abundance of migrating This project is also interfering with the access to the Sabine Pass Lighthou levees are butting up to the only access by vehicle to this National Treas the levee is several feet higher than the road, when it rains, the mud w the road.

Should you need more information, please do not hesitate to contact me . 7226.

Sincerely,

Carolyn

Carolyn Thibodeaux, President
Cameron Preservation Alliance -
Sabine Pass Lighthouse, Inc.

Coalition to Restore Coastal Louisiana

746 Main Street, Suite B101 • Baton Rouge, LA 70802
225-344-6555 • Fax 225-344-0590 • coalition@crcl.org • www.crcl.org

May 28, 2002

Ms. Lizette Richardson
Galveston District
US Army Corps of Engineers
P O Box 1229
Galveston TX 77553-1229

Dear Ms. Richardson:

On behalf of the Coalition to Restore Coastal Louisiana, we would like to express our grave concern about the potential negative impacts on Louisiana's coastal wetlands should the proposed widening and/or deepening of the Sabine-Neches Waterway channel take place.

The proposed changes to the Sabine-Neches Waterway channel will increase shoreline erosion and saltwater intrusion in the Calcasieu-Sabine basin. Saltwater intrusion has contributed greatly to the loss of wetlands in the Calcausieu-Sabine basin over the past 50 years. This project would exacerbate the loss of additional wetlands and vital estuarine habitat.

Due to the potential for increased salinity and shoreline erosion, this proposed project appears to conflict with the restoration strategies outlined in *Coast 2050*. *Coast 2050* is a comprehensive strategic plan for restoring Louisiana's coastal wetlands and stabilizing the coastal zone to prevent further wetland loss. The plan has been approved by all 20 coastal parishes, as well as the state, and federal government agencies, including the US Army Corps of Engineers. This project as proposed could potentially thwart the implementation of *Coast 2050* and threaten Louisiana's ability to gain greater national support for coastal restoration.

Also, the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) requires that all US Army Corps of Engineers' navigation and flood control projects be consistent with coastal restoration plans developed under the CWPPRA statute. We have seen no evidence to date that this has been done with respect to this project.

Irrespective of this legal requirement for consistency, any proposed project that will contribute to the destruction of wetlands while state and federal government programs spend millions of dollars to restore those same wetlands is inconceivably wasteful and ill-planned

We will submit a letter outlining our concerns in greater detail by June 28.

Sincerely,

Mark S. Davis
Executive Director

COMMENT FORM

PUBLIC SCOPING MEETING
SABINE-NECHES WATERWAY FEASIBILITY STUDY & EIS
LAKE CHARLES, LA. – MAY 28TH, 2002
BEAUMONT, TX. – MAY 29TH, 2002

This form is provided for your comments on the Sabine-Neches Waterway Feasibility Study and Environmental Impact Study. We appreciate your interest and comments on this project.

Comments:

It has recently been brought to the attention of Jefferson County Drainage District No. 7 that a Feasibility Study is under way relative to the modification of the Sabine-Neches Waterway. As you are probably aware, the District operates and maintains a Hurricane Flood Protection System consisting of a combination of Pump Stations, Canals and the Levee. This system was designed and built by the U.S.C.O.E. with the District serving as the local sponsor. The District is concerned about the impact that deepening and widening the channel may have relative to the integrity of the hurricane levee. In the past few years, settlement of the blanket stone along the waterway has been observed and is presently being monitored by the District. This problem has also been expressed to the Corp. At this time, the District is requesting to be brought into the discussion group so as to address any issues that may adversely effect the levee system.

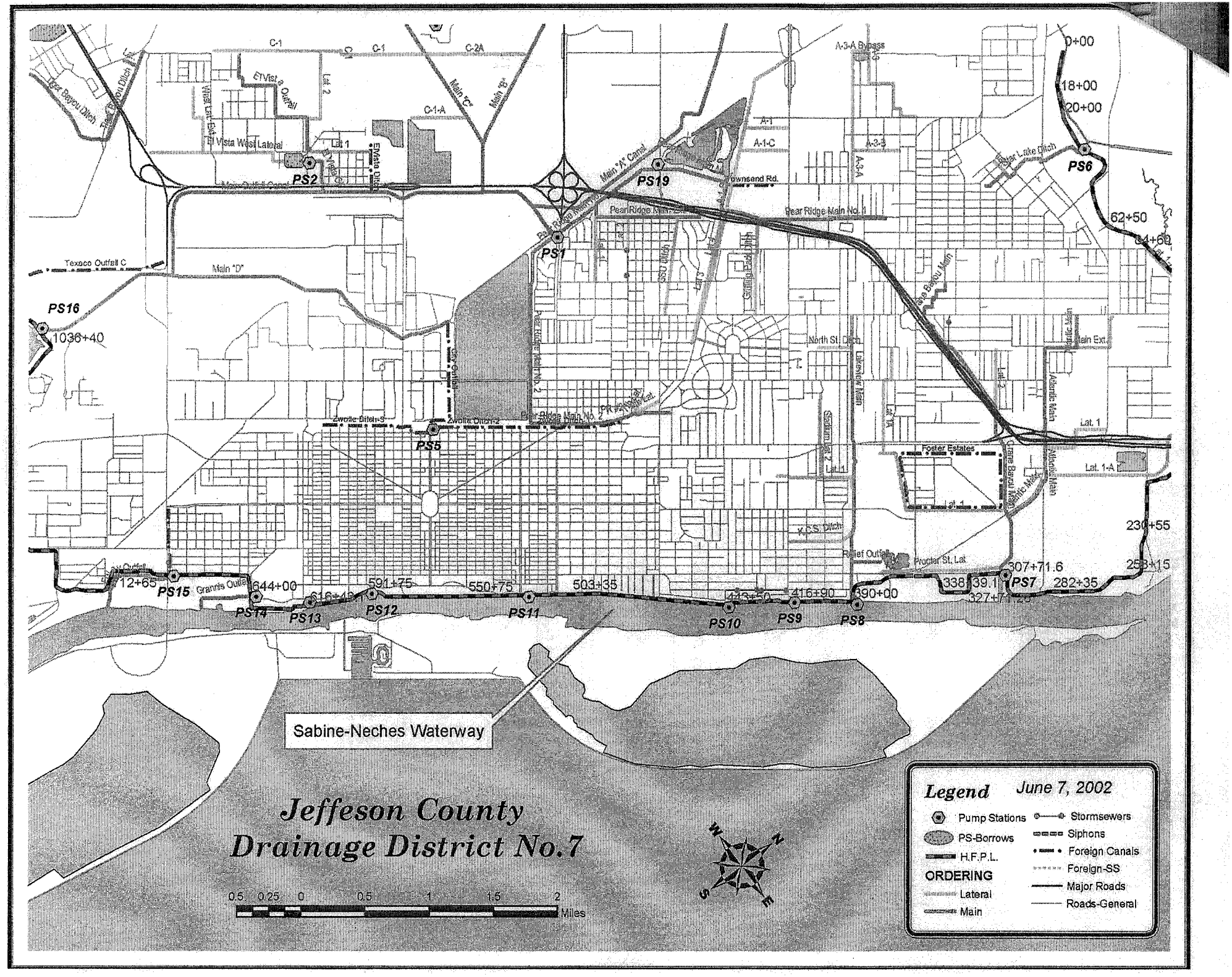
Mail your comments by June 28, 2002 to:

Colonel Leonard D. Waterworth
District Engineer
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229
Galveston, TX 77553

Please print:

Your name: Phil Kelley

Address: Jefferson County Drainage District No. 7
P. O. Box 3244
Port Arthur, TX 77643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June 7, 2002
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Texaco Outfall C
Vista West Lateral
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Pear Ridge Main No. II
Pear Ridge Main No. 2
Pear Ridge Lateral
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Pine Bayou Main
Crane Bayou Main
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COMMENT FORM

PUBLIC SCOPING MEETING
SABINE-NECHES WATERWAY FEASIBILITY STUDY & EIS
LAKE CHARLES, LA. – MAY 28TH, 2002
BEAUMONT, TX. – MAY 29TH, 2002

This form is provided for your comments on the Sabine-Neches Waterway Feasibility Study and Environmental Impact Study. We appreciate your interest and comments on this project.

Comments:

After attending the meeting in Beaumont on 5/29/02, I discussed the issues presented with one of my clients, Jefferson County Drainage District No. 7 (DD7). The staff at DD7 has expressed some concerns and have raised some valid issues which need to be considered. DD7 along with the U.S.C.O.E. constructed the Hurricane Flood Protection Levee (HFPL) around Pt. Arthur in the 70's and 80's. DD7 would like to know what impacts to the HFPL and the associated gate and pumping structures will be caused by the proposed upgrade to the Sabine-Neches Waterway. DD7 is additionally disturbed by the fact that they have not been contacted by any member of the project team to discuss any issues they might have in addition to those stated above.

Mail your comments by June 28, 2002 to:

Colonel Leonard D. Waterworth
District Engineer
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229
Galveston, TX 77553

Please print:

Your name: Allen D. Sims, P.E.

Address: Carroll & Blackman, Inc.
1360 N. Seventh Street
Beaumont, TX 77702

SIERRA CLUB

Houston Regional Group
P.O. Box 3021
Houston, Texas 77253-3021
713/895-9309

5/29/2002

Ms. Janelle Stokes
Environmental Lead
Planning Branch
and
Ms. Lizette Richardson
Project Manager
Project Management Branch

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

Dear Ms. Stokes & Ms. Richardson,

I am sorry I cannot be at the public scoping meetings for the Draft Environmental Impact Statement (DEIS) for the Sabine-Neches Waterway Feasibility Study. Please forgive this hand written letter. My computer has malfunctioned and is not working.

Please send me a copy of any materials available or handed out at the scoping meetings about this proposal.

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." *John Muir*

Recycled paper

We have a number of concerns we want to bring to your attention.

First, the cumulative impacts of this project and all past, present, and future forseeable actions must be addressed fully in a comprehensive DEIS. For instance, some of the actions that should be analyzed, assessed, & evaluated include the environmental impacts of the present, past, or future Neches River Channel, the Port Arthur East and West Turning Basins, the Beaumont Turning Basin, the East and West Sabine Pass Jetties, all dredge disposal areas, Taylors Bayou Turning Basin, the Gulf Intercoastal Waterway, the Sabine-Neches Canal, Highway 87, the Orange Turning Basin, the Cow Bayou Channel, the Adams Bayou Channel, the Sabine River Channel, the Channel Around Harbor Island, the Orange Municipal Slip, the Channel to Echo, the Sabine Pass Anchorage Basin, the Sabine Pass Jetty Channel, the Sabine Pass Outer Bar, the Sabine Bank, the Port Arthur Canal,

The Neches River Saltwater Barrier, the Steinhagen Dam & expansion, the Sam Rayburn Dam and expansion, Toledo Bend Reservoir, Rockland Reservoir, Fastrill Dam (Weches), Lake Palestine, Lake Striker, Lake Easter, Lake Jacksonville, Lake Athens, Lake Cherokee, Martin Lake, Lake Murvaul, Lake Tyler, Lake Tyler East, Big Cow Creek Dam, Bon Weir Dam, Ponta Dam, Sooogee Dam, Stateline Dam, State Highway 322 stages I & II, Rabbit Creek Dam, Carthage Dam, Kilgore Dam, various wastewater treatment plants, water pipelines or canals, and other water projects in the Sabine & Neches Rivers. Also any major ports/other developments and highways.

All of these past, present, and forseeable future actions have or will have impacts on the Sabine & Neches Rivers. In toto all must be comprehensively assessed in a DEIS that analyzes all cumulative impacts.

For instance, we are very concerned that the existing channels in the Sabine and Neches and <u>any</u> proposals to deepen those channels will increase saltwater intrusion and impact the Big Thicket National Preserve (BTNP), including the Beaumont and Pine Island/Little Pine Island Bayous Corridor. This will result in diminished biodiversity and vegetation killing.

We are very concerned about so-called beneficial uses of dredged materials. At present we do not favor the creation of spoil islands in any marine or brackish environments. These islands will simply serve as another way to redeposit the dredge material while giving the appearance of being environmentally green. Storms will overtop & redeposit sediments into prime nursery areas for finfish, crabs, shrimp, and other marine or aquatic life.

We are concerned that deepening channels to 45-50 feet will increase salinity in brackish water areas & destroy their nursery area function.

The full cost of the proposal must have full mitigation provided. This means full land acquisition to mitigate for destroyed or degraded habitats. Only then will a true benefit/cost be determined & project feasibility can then be assessed.

The full impacts of this proposal on the development of the floodplains of the Neches & Sabine Rivers must be determined.

The full impacts on Blue Elbow Swamp must be determined.

The full impacts on this proposal driving development in a hurricane and storm prone area must be determined.

The full impacts on the Texas Point and McFaddin National Wildlife Refuges must be determined.

The full impacts on the J. D. Murphree Wildlife Management Area and Sabine Rim State Park must be determined.

The full impacts of dredge disposal on the beach paralelling State Hwy 87 must be determined & the linkages fully assessed including impacts.

We urge the Corps not to rush into this project. Already Corps personnel are stating the project looks like it has a positive benefit when public review & input and full assessment, analysis, & evaluation have not been done (See enclosed articles). This appears to make the Corp biased in favor of the proposal before it has even

been assessed. This biasing is illegal under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's (CEQ) NEPA implementing regulations.

We appreciate the opportunity to comment and request we be placed on the mailing list and be sent all information about this proposal including a hard copy of the DEIS.

Thank you.

Sincerely,

Brandt Mannchen

Brandt Mannchen
Chair, Big Thicket Committee
Lone Star Chapter of the Sierra Club
5431 Carew
Houston, Texas 77096
H 713-664-5962, W 713-640-4313

BUSINESS

D

THURSDAY
JANUARY 31, 2002

Markets/3D

Engineers weigh ship channel deepening

Sabine-Neches passage could be dredged to 50 feet

By DAN WALLACH
THE ENTERPRISE

BEAUMONT — A preliminary decision to deepen the Sabine-Neches Ship Channel to 50 feet from its existing 40 feet could be ready by July.

An engineer conducting a study for the U.S. Army Corps of Engineers said the depth range under consideration is anywhere from 45 to 55 feet.

"The draft work we've been doing so far looks like it's in the 50-foot range," said Richard Tomlinson, the project manager. "We don't officially know ourselves, so we can't say for sure."

To recommend the project, the corps must show an economic benefit in the national interest.

A local waterway official said that benefit already is proved with the corps recently increasing the waterway's ranking for foreign-trade tonnage from fifth to third.

The trend in U.S. ports is to cut deeper channels to accommodate larger ships, particularly those that serve oil and petrochemical refining plants.

Tomlinson said the estimated cost of digging the Sabine-Neches channel 10 feet deeper is about $400 million.

The local sponsors would have to pay 25 percent of the cost, he said.

The local sponsors also would have to provide some additional assets, such as real estate for placement of dredged material.

However, current law requires local sponsors to pay 50 percent of the total cost if the channel depth goes past 45 feet, said Tom Jackson, general manager of the Jefferson County Waterway and Navigation District.

Also, if the depth goes past 45 feet, the local sponsor assumes maintenance costs, Jackson said.

"There is a proposal to nullify that penalty, but as it stands today, there is a penalty for

STUDY, next page

FROM THE BUSINESS COVER

STUDY: Benefits would exceed upgrade costs

Continued from page 1D

depths past 45 feet," Jackson said.

"If it changes, we could go to 50 feet," he said.

Another wild card is the cost of relocating pipelines that cross the channel, he said.

A federal judge in Houston this week wrote an opinion involving the Port of Houston that places the cost of pipeline relocation on the port.

The corps already approved cutting the Houston Ship Channel to 45 feet from 40 feet, and construction there is under way.

The port is appealing the judge's decision.

In July 1991, U.S. District Judge Howell Cobb in Beaumont dealt with a similar problem in which a pipeline company wanted Drainage District 6 to pay for line relocations in the Taylor Bayou flood control project.

Cobb ruled against the pipeline company, saying its position "not only was not good law, but not good sense."

The Fifth Circuit Court of Appeals in 1993 upheld Cobb's ruling that the pipeline company was responsible for the relocation.

Jackson said at least 65 pipelines cross the Sabine-Neches ship channel.

The corps' recommendation for deepening is based on a cost-benefit ratio averaged during a 50-year span for the project, Tomlinson said.

In the case of the Sabine-Neches channel, the cost-to-benefit ratio is 1-to-2, he said.

If the cost is measured at about $400 million, the benefit is expected to yield about $800 million, he said.

"All depths are in that (cost-benefit) ballpark," he said.

The greatest net benefit results from a depth of 50 feet for the channel, he said.

The corps also is studying whether to deepen the channel serving Corpus Christi to as deep as 52 feet from its current 45 feet.

Tomlinson said the corps will determine its recommendation in July and prepare its environmental impact study for public review by December 2003.

A final version of the plan should be ready by April 2004, he said.

Business reporter Dan Wallach may be reached at dwallach@beaumontenterprise.com or call (409) 833-3311, ext. 450.

Dredge project would produce huge amounts of silt, sludge

By JEORGE ZARAZUA
THE ENTERPRISE

BEAUMONT — Sorry kids, this is bigger than mud pies.

We're talking about millions of tons of silt, or dredged sediment, that is expected to be pumped from the bottom of the Sabine-Neches Ship Channel if the federal government approves the deepening and widening of the waterway.

It's such a colossal amount of dirt that the U.S. Army Corps of Engineers has begun to consider what to do with it, even before the project is approved.

Deepening the ship channel to 45 feet will produce enough silt, commonly called spoil, to create a mountain 14,000 feet above sea level if dumped in one place, or fill the Astrodome three times.

Traditionally, the Corps has set the dredged sediment aside, dumping it either on land surrounding the river or out in the Gulf of Mexico, where ships don't travel.

But in an effort to be more environmentally friendly, not to mention there's little room in the county for a mountain-sized mud pile, the Corps has enlisted the aid of a Baton Rouge consulting firm to help come up with solutions.

Representatives with Gulf Engineers and Consultants Inc. have had public meetings across Southeast Texas and Southwest Louisiana, asking residents how more than 40 million cubic yards of dredged sediment can be used to help the environment.

The representatives recently posed the question to Jefferson County commissioners.

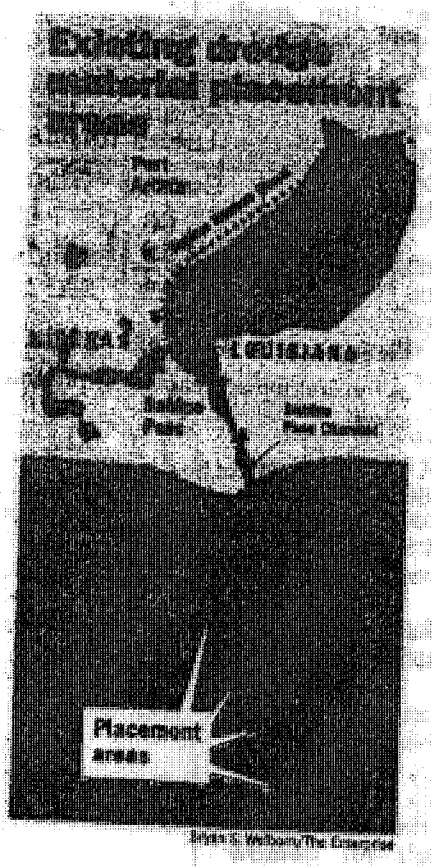
SILT, page 6A

WEATHER

Today: Scattered showers
High: 60s. Low: 40s.

Update, page 2A

http://www.SoutheastTexasLive.com



SILT: Project not yet approved

Continued from page 1A

"We're not interested at this point whether the ideas are technically or economically feasible, the Corps is going to take all the suggestions that are made and sort them out," said Jacques Bagur, one of the consultants.

County Commissioners said they want the dredged sediment pumped out along the county's coast, forming barriers that would protect not only its beaches, but also Texas 87.

Richard Tomlinson, the Corps' project manager, said other suggestions include pumping the silt via pipelines to areas such as the Bessie Heights Marsh and the J.D. Murphee Wildlife Management Area to replenish their marshes.

"This is going to be some good stuff," Tomlinson said. "In fact, we anticipate there is going to be a demand for the material."

If all else fails, then the Corps could build its own island.

It's been done before with the dredged sediment from the deepening project at the Houston Ship Channel, said Marilyn Uhrich, a spokeswoman for the Corps in Galveston.

It took the Corps about a month to create Evia Island, which has become a protected habitat for gulls, pelicans, sandpipers and a myriad of other birds.

Gulf Engineers and Consultants Inc. may be reached at 225-336-4606.

Reporter Jeorge Zarazua may be reached at jzarazua@beaumontenterprise.com or at (409) 833-3311, ext. 419.

(5)

DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

CEMVN-PM

12 Jun 02

MEMORANDUM FOR Commander, Galveston District, Post Office Box 1229, Galveston, Texas 77553

SUBJECT: Senator Mary Landrieu's Letter Forwarding a Letter From Ms. Carolyn Thibodeaux, Cameron Preservation Alliance Regarding the Sabine Ship Channel

1. As the subject letter concerns a matter within your jurisdiction, I am forwarding it directly to you for a reply (see encl 1).

2. We have advised Senator Landrieu's office that the letter is being forwarded to you (see encl 2).

2 Encls
as

THOMAS F. JULICH
Colonel, EN
Commanding

Estate of J. G. GRAY
P.O. Box 40
Lake Charles, Louisiana 70602

02 JUL 12 AM 3:57

June 24, 2002

Colonel Leonard Waterworth
District Engineer
U.S. Army Corps of Engineers
Galveston District
P.O. Box 1229
Galveston, TX 77553

Re:Public Scoping Meeting – Sabine Neches Waterway Feasibility Study and EIS

Dear Colonel Waterworth:

Stream Property Management, Inc. is a wholly owned subsidiary of the Estate of J.G. Gray located in Lake Charles, Louisiana. We own, manage and represent tens of thousands of acres that will be adversely impacted by the widening and/or deepening of the Sabine Neches Waterway. Huge areas of valuable coastal wetlands in the Sabine Basin in Louisiana have been adversely affected for the past century by the changes in hydrology through salt water intrusion and increased tidal fluctuation caused by the Sabine-Neches Waterway.

In this day and time of environmental awareness, our country and state have recognized the importance of coastal wetlands. Louisiana passed Act 6 (R.S. 49:213 et seq.) in 1989 creating the Coastal Wetlands Conservation and Restoration Authority as the initial step to restore Louisiana Coastal Wetlands.. The Coastal Wetlands Planning, Protection, and Restoration Act (P.L. 646) was passed by the 101st U.S. Congress in 1990. These Acts have shown widespread public support and awareness in Louisiana and the United States for the preservation and restoration of our coastal wetlands. There have been huge mistakes made in the past allowing large quantities of salt water to intrude into traditional freshwater wetlands. The coastal marshes located in Calcasieu and Cameron Parishes were traditionally fresh and intermediate wetlands with a small border of brackish marsh along the shoreline. Since the channel construction and enlargements, beginning in the late 1800's, huge areas of these wetlands have been washed out to sea. Because of the fragile nature and organic composition of the soils, these soils have not been rebuilt, thus leaving vast open water expanses.

The deepening and widening of channels has been shown to not only increase salinities but to increase tidal fluctuations and storm surges. In low lying areas such as these wetlands surrounding Sabine Lake, an increased tidal amplitudes are devastating to these fragile marshes. The added danger in deepening and widening this channel is a further threat to the deterioration of our coastal wetlands, allowing increased hurricane and tropical storm surges to inundate these marshes.

As your staff can aptly demonstrate, the losses on both sides of Sabine Lake parallel the channel improvements on the Sabine Neches Channel. It is also evident at this point in time that freshwater is becoming a more valuable resource as witnessed by your latest project regarding the saltwater barrier in the Neches River. There is no such barrier in the Sabine River. There is no such barrier between the Sabine Basin and the Calcasieu Basin which was connected by a deep water channel by act of congress in 1912. The hydrology of this basin can not tolerate more changes and, in fact, needs to have the past century of adverse impacts addressed as soon as possible.

Coast 2050 is a comprehensive plan endorsed by five departments of the U.S. Government and the State of Louisiana. This plan outlines many restoration efforts, along with the white paper published in 1994, the Calcasieu-Sabine Basin plan submitted by NRCS in 1989 and many other plans that have addressed these problems and outlined solutions. The solutions identify a salinity control measure at Sabine Pass, along with perimeter control projects, one of which has been recently approved by the Coastal Wetlands Planning, Protection and Restoration Act, the East Sabine Lake Project. This project outlines a perimeter control system to control salinity inside the interior marshes of the east side of Sabine Lake. This project has been developed by five federal agencies including the U.S. Army Corps of Engineers (New Orleans District) to protect this area. As pointed out in the scoping meeting in Lake Charles, we have seen no evidence of coordination between the Interagency Coordination Team (ICT) group for the Sabine Neches Waterway and the plans and construction projects being implemented in Louisiana. A representative from Coastal Management, Department of Natural Resources, has been attending these ICT meetings but coordination in regard to these larger projects has not been witnessed according to the minutes of the ICT.

Many meetings with user groups were held to ask for public input into eco-system planning and beneficial use of dredged spoil ideas. The 244 suggestions by user groups and landowners are added to the official record for the scoping meeting by this letter with Attachment "A". One of the issues that was brought up during these user group meetings was lack of public input, and lack of the ability to question the merits of the project, along with the lack of public and private participation. Private landowners that are being affected by this project have had an almost inconsequential voice in this process. This was evidenced in the scoping meeting that was held in Lake Charles on May 28th by allowing the public only three minutes per person to comment. The Corps of Engineers and Jefferson County Navigation District have had years to plan this project and have spent millions of dollars prior to these scoping meetings. The individuals from the public whose land was being affected were given a total time of three minutes to speak at the scoping meeting. This is hardly enough time for an individual to explain his

interest in the project or how the project may affect him. Now, is it equitable that the government has spent millions in preparing for this project and allows the public, whose private land is being affected, a three minute time frame with the option to submit written comments as per this correspondence? I feel this was totally inadequate and totally unfair to the private landowners being affected by this channel.

By this means, we request that before any channel improvements are approved that the past wetland damages of this channel be restored to the satisfaction of the landowners affected by this channel improvement prior to the proposed channel improvement project moving forward.

Some spoil disposal sites are located on the east bank of the Sabine River in Louisiana from Sabine Pass to Sabine Lake. These areas of spoil deposition should no longer be used with the technology we have available today. This spoil should be placed for beneficial use in many areas around the lake that are not being utilized at this time. Spoil is also being placed in public water bottoms of Sabine Lake. This public resource does not deserve to be taken away for channel improvements and/or maintenance. The Keith Lake area on the west side of the Sabine Neches channel has also been severely deteriorated by the saltwater intrusion and excessive tidal fluctuation caused by this channel. Many opportunities for water control and beneficial use of dredged spoil are available in that area as evidenced by suggestions in Attachment "A".

I want to thank you for the ability to make these comments and would hope that further coordination with private landowners and individuals who will be adversely affected by the proposed channel improvements be consulted and kept abreast of every activity in the future. I regret that this type of government action is intended for the public good but seems to exclude the public from comment except for limited and controlled through "scoping" meetings.

Sincerely,

David Richard
P.O. Box 40
Lake Charles, LA 70602
337-433-1057, extension 19
drichard@streamcompany.com

Enclosure
CC: Senator John Breaux
Senator Mary Landrieu
Congressman Nick Lampson
State Senator G. Theunissen
State Representative Dan Flavin
State Representative Ronnie Johns

RECOMMENDATIONS MASTER LIST

1. Deposit dredged materials in open water areas within the marshes (affected by subsidence, erosion, and saltwater intrusion) at Texas Point NWR.

2. Deposit dredged materials at Lafitte's Landing 1 and 2 (south end of Pleasure Island, lake side, along shoreline and by marina) to provide shoreline erosion control and wetland creation.

3. Deposit dredged materials at Pleasure Island Marina for shoreline erosion control and marsh creation.

4. Construct a salinity control structure at the Keith Lake Fish Pass/SNCC intersection to reduce saltwater intrusion while allowing for unhindered navigation and marine organism ingress/egress.

5. Construct a system (depending on hydrologic model) of berms or levees (terraces) north of Pleasure Island in the gap and restore the island along the Sabine-Neches Canal to protect the lake from higher salinities in the channels.

6. Restore the hydrologic connection (freshwater sheetflow) at Salt Bayou between the marshes north and south of the GIWW.

7. Construct a structure on the east part of Salt Bayou to restore freshwater flow to marshes south of the GIWW.

8. Deposit dredged materials, particularly those with higher sand content, lineraly along the shoreline from Texas Point NWR westward through McFaddin NWR.

9. Deposit dredged materials, particularly those with higher sand contant, lineraly along the shoreline east of the entrance channel.

10. Create gaps in both entrance channel jetties to increase sediment transport to Gulf shorelines.

11. Stabilize the shoreline on the east edge of Texas Point NWR at gaps in the jetty north of pilot station and repair the jetty.

12. Construct a two to six acre bird island or islands, at least five feet high with a sheltered lagoon, in the north part of Sabine Lake near Sidney Island at least one mile offshore.

13. Establish salinity controls, including the restoration of historic flow volumes, in Texas Bayou and associated channels connecting to the SNWW on Texas Point NWR through such things as low-level rock weirs, plugging man-made channels, water control structures, and/or other channel modifications.

14. Deposit dredged materials in open water areas and degraded marshes in the east part of the Salt Bayou watershed north and south of Keith Lake.

15. Stabilize the shoreline in any reaches of the GIWW projected to have increased salinities as a result of the project.

16. Establish erosion control on the Taylor Bayou outfall canal shoreline, primarily on the south bank.

17. Stabilize the banks of the GIWW in Louisiana, particularly the south bank, because the north bank has been largely stabilized through two coastal restoration projects.

18. Protect the cypress swamp area south of the Neches River Saltwater Barrier from possible excessive salinities by installing structures, terraces, or other hydrologic components.

19. Use high sand content dredged materials from offshore, including existing disposal areas, for beach enhancement purposes.

20. Implement the East Sabine Lake Hydrologic Restoration Project to protect approximately 35,000 acres of brackish to intermediate marsh in the west part of the Sabine NWR and adjacent lands from elevated salinities by such things as water control structures at major bayous and canals and earthern terraces in existing shallow-water areas.

21. Construct a gate on the Sabine Pass Channel or a sill offshore to establish hydrologic control.

22. Restore the interior hydrology of Salt Bayou marshes south of the GIWW on TPWD land.

23. Construct a low-level rock weir or similar structure at the causeway to prevent excessive salinities from entering the lake.

24. Construct salinity controls in the brackish marsh regions east of the intersection of Lighthouse Bayou and the Sabine Pass Channel.

25. Deposit dredged materials from the SNWW in large, shallow, open-water areas in the west part of the Sabine NWR north and south of the Willow Bayou Canal and in the Greens Lake area.

26. Deposit dredged materials from the SNWW on the east shoreline of Sabine Lake at the Sabine NWR and adjacent lands.

27. Deposit dredged materials from the SNWW in the open-water areas of the Greens Lake area to create marshes.

28. Establish salinity control between the GIWW and the Sabine River to protect the Louisiana side.

29. Establish salinity control west of the Hwy. 87 bridge and the GIWW to protect the Texas side.

30. Use new work materials one-time offshore that would degrade to feeder berms.

31. Establish topographic relief offshore.

32. Establish nearshore feeder berms for shoreline protection.

33. Protect and stabilize the Middle Marsh Drain Ditch.

34. Restore the saltwater guard lock at the north end of Pleasure Island.

35. Establish salinity control at the mouth of Cow Bayou.

36. Establish salinity control at the mouth of Adams Bayou.

37. Establish salinity control on the Old Ferry Road Borrow Ditch.

38. Establish salinity control at Old River Bayou.

39. Create terraces in the Entergy Power Plant Marsh.

40. Isolate the Entergy outfall canal by recreating the historic canal berms.

41. Use dredged materials to create terraces and mounds and backfill canals in the Bessie Heights Marsh.

42. Restore the natural hydrology of the Bessie Heights Marsh by restoring the natural bayou and closing the two canals.

43. Divert some of the stormflow in Anderson Gully into the Bessie Heights Marsh.

44. Restore the cypress swamps in the Rose City Oilfield through hydrologic restoration, salinity control, and beneficial use of dredged materials.

45. Plug the Hwy. 87 borrow ditch to restore flows to Nig Bayou.

46. Protect the shoreline on the north side of Old River Cove.

47. Use dredged materials to create mounds and terraces in Old River Cove.

48. Use dredged materials in the Old River Unit of the Lower Neches River WMA.

49. Use dredged materials in the open-water areas of the Burton Canal Marsh east of the Sabine River and the Burton Canal.

50. Use dredged materials in the open-water areas of the marsh east of Phoenix Lake.

51. Protect and restore the north shore of Keith Lake.

52. Construct a structure in the Sabine River at Orange to protect the cypress-tupelo swamps upstream if Sabine Compact withdrawals are implemented.

53. Use dredged materials to create a bird island north of the causeway.

54. Use dredged materials to restore marsh elevations in the interior of the Salt Bayou Marsh south of the GIWW.

55. Divert the Neches River through the Bessie Heights Marsh into Sabine Lake by leveeing the channel.

56. Create a substrate for oysters in south Sabine Lake to restrict salinity and flow.

57. Construct a navigation lock at Sabine Pass, which would resolve many of the problems, particularly saltwater intrusion, in the Sabine Lake area.

58. Construct a low-level rock weir constriction at the mouth of Sabine Lake at the causeway to reduce saltwater intrusion.

59. Implement the East Sabine Lake Hydrologic Restoration Project (a CWPPRA project) to provide salinity control on the east shore of Sabine Lake.

60. Implement the NRCS Public Law 566 rock weirs along the length of Black Bayou.

61. Construct a salinity control structure at the mouth of Black Bayou.

62. Use dredged materials between Pleasure Island and Sabine Island to create an earthen barrier that would protect Sabine Lake from saltwater intrusion from the channels.

63. Use dredged materials to restore the marsh in the Old River Unit south of Bridge City.

64. Remove Placement Area 11 at the north end of Pleasure Island to restore the estuarine bottom and reestablish public access to state waterbodies.

65. Remove Placement Area 8 at the south end of Pleasure Island to restore the estuarine bottom and reestablish public access to state waterbodies.

66. Use dredged materials to restore the marshes north and south of Keith Lake.

67. Use dredged materials to restore the marshes in the Greens Bayou area.

68. Use dredged materials to restore the marshes in the Willow Bayou area.

69. Establish an earthen barrier with water control structures along the entire east edge of Sabine Lake to protect the marshes from salinity intrusion and wave action.

70. Use dredged materials to restore the marshes north of Lighthouse Bayou.

71. Construct a structure at the mouth of Lighthouse Bayou to reduce salinity intrusion.

72. Use dredged materials to restore the marshes south of Perry Ridge.

73. Provide greater opportunities for fishing (for example, piers) to compensate for the decline of boater access to Sabine Lake from Louisiana that has been brought about by hydrologic restoration projects.

74. Stabilize the shoreline on the east side of Sabine Lake using boudin bags (geotextile tubes filled with dredged materials).

75. Use dredged materials to restore the marshes northwest of the Black Bayou Oil and Gas Field.

76. Maintain Sabine River freshwater flows into Sabine Lake in keeping with the Coast 2050 strategy.

77. Establish a navigation lock on the GIWW at Gum Cove Ridge to reduce saltwater intrusion to the east.

78. Use dredged materials to enhance the existing marsh strip and refurbish the deteriorated rock barriers on the south side of the GIWW in the Gum Cove Unit 13 area.

79. Use dredged materials to restore the marshes and establish a bird island south of the GIWW in the Gum Cove Unit 13 area.

80. Provide shoreline protection and hydrologic restoration for the fresh marsh east of the Sabine River and between the GIWW on the south and the Sabine Island WMA on the north.

81. Create terraces and use dredged materials to restore marshes between Perry Ridge and the Sabine River.

82. Protect the marshes between the Sabine NWR and Sabine Pass by protecting the shoreline of Sabine Lake and establishing salinity controls on Madame Johnsons Bayou,

Forge Bayou, Greens Bayou, and Johnsons Bayou in keeping with the East Sabine Lake Hydrologic Restoration Project.

83. Use dredged materials to restore marsh in all open-water areas east of Sabine Lake where it is feasible to pump them, and construct terraces to restore marsh in all open-water areas east of Sabine Lake where it is not feasible to pump dredged materials (note: not location specific).

84. Use dredged materials and construct terraces in the open-water areas of the Black Bayou Cutoff Canal area.

85. Restore the hydrology and prevent saltwater intrusion at the oil field ditch and lateral ditches running west from the Black Bayou Cutoff Canal.

86. Establish a state park in the area east of Lighthouse Bayou and south of Hwy. 82 (contingent on private property donation and not necessarily including the lighthouse).

87. Use dredged materials to restore eroded beaches in the vicinity of the 15-mile marker from the Louisiana line (that is, in the Dunn Beach and Martin Beach areas).

88. Construct an earthen barrier on the east bank of the Sabine River from the GIWW to Sabine Island to eliminate saltwater intrusion.

89. Use dredged materials to restore the marshes in the area north of the GIWW and west of the Gray and Vinton drainage canals.

90. Use one-time placement of dredged materials in various areas to create coastal forest and chenier habitat (note: not location specific).

91. Use dredged materials to create cheniers on the high marsh from Louisiana Point to Holly Beach.

92. Use dredged materials to restore marshes in the Bessie Heights Marsh area.

93. Provide erosion control along the channel on the north portion of Pleasure Island.

94. Provide erosion control along the channel on the extreme south portion of Pleasure Island.

95. Use dredged materials to restore the north end of Pleasure Island where Sabine Lake is breaking through.

96. Use dredged materials to restore the southern tip of the peninsula north of the northern tip of Pleasure Island.

97. Provide erosion control using concrete revetment on the west side of the Port Arthur Canal across from Placement Area 11 in the vicinity of the vessel repair facility.

98. Use dredged materials to close the gap between the channel and Sabine Lake north of Pleasure Island.

99. Use dredged materials to close the gaps between the islands at the north end of Sabine Lake.

100. Elevate Hwy. 87 with dredged materials near Sabine Pass.

101. Provide erosion control along the channel on the south portion of Pleasure Island in the vicinity of Placement Area 8.

102. Use dredged materials to restore the marsh on the south end of Humble Island.

103. Use dredged materials to restore the marsh on the south side of the GIWW below Taylor Bayou.

104. Use dredged materials to restore the marshes north of the GIWW in Louisiana.

105. Restore access to the Sabine Lighthouse and stop erosion in the immediate area.

106. Use dredged materials to build developable land on the north side of the Neches River from Beaumont downstream.

107. Use dredged materials to build up the area near Hwy. 82 and the causeway so that a bridge can be built over the channel directly linking Hwy. 82 and Hwy. 87.

108. Use dredged materials to restore the eroding beach in the vicinity of Peveto Beach.

109. Breach the levees and use dredged materials to restore the manmade lakes within Sabine NWR to their original marsh condition.

110. Use dredged materials to fill in oilfield service canals wherever they are contributing to salinity intrusion into Louisiana's marshes (note: not location specific).

111. Use dredged materials to build islands offshore on both sides of the channel for migratory birds that would simulate the function of a natural delta.

112. Use dredged materials to build islands for migratory birds in Sabine Lake far enough from shore to protect from predators.

113. Use dredged materials to construct cheniers in Louisiana and Texas, planting them with oaks and other vegetation that occur on natural cheniers.

114. Use dredged materials to restore cheniers in Louisiana and Texas (perhaps by removing the existing top layer of sand and shell, depositing dredged materials, and they relaying the sand and shell on top), with easements to protect them for bird use.

115. Use dredged materials to buffer cheniers in Louisiana and Texas that are in danger of disappearing.

116. After placing dredged materials in new placement areas, shape and contour the areas so that they appear natural, and plant native vegetation to support wildlife (note: not location specific).

117. Shape and contour existing dredged material placement areas so that they appear natural, and plant native vegetation to support wildlife (note: not location specific).

118. Construct recreational amenities, particularly primitive campgrounds, on cheniers and on placement areas that have been filled (note: not location specific).

119. Construct a lock at Sabine Pass to prevent saltwater intrusion into Sabine Lake.

120. Construct a bulkhead on the channel side of Pleasure Island from the intersection of the SNWW and the GIWW to the north end of the island.

121. Mine dredged materials from Placement Area 8 to build up the 43 acres at the south end of Pleasure Island owned by the port and then replace with new dredged materials.

122. Preserve the productive shallow-water areas of the two placement areas on Pleasure Island by depositing dredged materials on top of the existing levees, particularly near the channel, and develop the land for recreational use.

123. Use dredged materials to build up the land on the southern portion of Pleasure Island from Placement Area 8 to the south end of the island on the lake side and bulkhead the channel side.

124. Provide erosion control for all of Pleasure Island on the channel side.

125. Use dredged materials to rebuild the approximately one-quarter mile of land at the north end of Pleasure Island that has completely eroded away and protect it with erosion control structures.

126. Use dredged materials to build up the land on Pleasure Island directly across from the Taft Avenue Extension to preserve its potential as a location for a second bridge to the island.

127. Construct a new salinity control structure on the north side of the GIWW at the point where Salt Bayou intersects the GIWW.

128. Use dredged materials to restore the beach and create dunes south of McFaddin NWR between Sea Rim State Park and High Island.

129. Use dredged materials to rebuild the island at the McFadden Bend Cutoff (Reserve Fleet area across from Sun Terminal) that was lost to erosion.

130. Use dredged materials to restore Bessie Heights Marsh and construct salinity control structures to protect the marsh.

131. Construct a salinity control structure on the Keith Lake Fish Pass.

132. Limit salinity intrusion into Keith Lake by using dredged materials to fill in the cuts that have been made into the lake on its north side.

133. Build vegetated dunes and institute ongoing erosion control and beach nourishment for the eroded beach in the vicinity of McFaddin NWR.

134. Construct a structure at the channel end of the Pilot Station Cut to limit saltwater intrusion.

135. Construct a structure at the channel end of the Texas Bayou Cut to limit saltwater intrusion.

136. Construct a structure at Keith Lake Fish Pass to limit saltwater intrusion.

137. Investigate the potential for mining existing placement areas for high-quality dredged materials that can be used in various restoration projects (note: not location specific).

138. Use maintenance dredging materials from the GIWW to restore the eroded beach in the vicinity of McFaddin NWR.

139. Use dredged materials from the lower portion of Taylor Bayou for marsh restoration and beach nourishment.

140. Mine the high-quality sediments from behind the dam at Steinhagen Lake (outside of the study area) for use in marsh restoration and beach nourishment projects in the study area.

141. Modify the jetty system to restore the longshore current and deposition of materials along the beach west of the channel.

142. Use the high-quality materials from offshore channel dredging to restore the eroded beach in the vicinity of McFaddin NWR.

143. The beach in the vicinity of McFaddin NWR is being eroded because the longshore current is deflected outward by the jetties and then turns back sharply toward the beach.

Build a longshore parallel jetty system to minimize the assault on the beach by the inwardly turning longshore current.

144. Because it is of higher quality, use dredged materials from the GIWW for beach restoration west of the channel rather than for other purposes.

145. Reinforce the shoreline all along the channel to reduce erosion and the need for maintenance dredging.

146. Implement the Drainage District 6 proposed Taylors Bayou Diversion Channel project west of the present diversion channel and from Taylors Bayou to the GIWW to alleviate flooding.

147. Use dredged materials to restore the eroding beach south of McFaddin NWR to protect Hwy. 87.

148. Pump sand from offshore to restore the eroding beach south of McFaddin NWR to protect Hwy. 87.

149. Restore the Rose City Marsh in keeping with the plan of action submitted by TNRCC, which involves breaking the open-water areas into cells with levees and restoring one cell at a time with dredged materials.

150. Preserve the oxbow above the Rose City Marsh, with possible donation or easement and recreation link with mainland.

151. Close the breaks into the marsh on the southeast bank of Keith Lake that are contributing to saltwater intrusion.

152. Resolve the problem of too much fresh water in the Blind Lake area where the TPWD levee and the GIWW are interrupting sheetflow, perhaps by constructing a drainage canal to the GIWW.

153. Reduce saltwater intrusion into Bessie Heights Marsh by separating the marsh from the Neches River by building a levee along the river bank and rebuilding the levee on the GSU canal.

154. Reduce saltwater intrusion by building a levee across the old dredged material placement area to Bird Island Bayou.

155. Restore the Mires Bayou area by building levees to close the oxbow at both ends, which would limit saltwater intrusion.

156. Protect the Texas Point marshes by constructing a longshore rock jetty and placing dredged materials along the beach behind the jetty.

157. Use dredged materials to restore marshes throughout the study area that have been converted to open-water areas, as seen by comparing historic to contemporary maps (note: not location specific).

158. Constrict the channel to about 250 feet at Sabine Pass to reduce saltwater intrusion into Sabine Lake.

159. Construct a lock at Sabine Pass to eliminate saltwater intrusion into Sabine Lake.

160. Deposit dredged materials southeast of the lighthouse to create a raised area or dunes that would protect the lighthouse from storm surges and assist in erosion control.

161. Place dredged materials southeast of the lighthouse along the mudflats and slightly inshore at an elevation of about three feet to protect the lighthouse.

162. Control coastal erosion west of Johnsons Bayou by the placement of materials from offshore channel dredging.

163. Use every opportunity presented by the present and proposed projects to preserve the lighthouse for future generations (note: not site or recommendation specific).

164. Construct a saltwater barrier at the mouth of Lighthouse Bayou to limit saltwater intrusion into the marsh.

165. Construct an emergent or submerged rock barrier north of the causeway to limit saltwater intrusion into Sabine Lake.

166. Build a levee or separate salinity control structures from Blue Buck Point east to limit saltwater intrusion into the marshes through the numerous small ditches and oilfield canals.

167. Construct an erosion control structure and rebuild the land with dredged materials in the eroding cove on the east side of the lake and north of the causeway.

168. Construct an erosion control structure and rebuild the land with dredged materials in the eroding cove on the east side of the lake and south of the causeway.

169. Construct a lock at the mouth of the channel to eliminate saltwater intrusion into Sabine Lake.

170. Build placement areas to a reasonable level, then move on to other areas, allowing the old placement areas to vegetate or be used for development (note: not location specific).

171. Use dredged materials to restore the eroding beaches from Texas Point to High Island.

172. Use dredged materials for dune restoration south of Hwy. 87 if it is ever rebuilt.

173. Use dredged materials for marsh restoration in the Bessie Heights Marsh.

174. Use dredged materials for marsh restoration in Keith Lake wherever open-water areas are emerging.

175. Use dredged materials for marsh restoration in the Salt Bayou watershed north and south of the GIWW.

176. Use dredged materials to build up low-lying land suitable for development that is not marsh land (note: not location specific).

177. Because most dredged materials contain pollutants, continue to put them in placement areas rather than using them for ostensibly beneficial purposes (note: not location specific).

178. Any beach-quality sand that is available should be used to restore the eroding beaches from Texas Point to High Island.

179. Use dredged materials to construct a road to the Sabine Lighthouse.

180. Use dredged materials to restore the beaches east of the channel.

181. Construct a lock at the mouth of the channel to eliminate saltwater intrusion into Sabine Lake.

182. Construct a revetment or levee and fill in back with dredged materials to restore the eroding cove at the mouth of Lighthouse Bayou.

183. Remove Point Hunt Island in the channel to allow a straight passage for vessels so that the land to the east is not subjected to collisions.

184. Use dredged materials to fill in the open-water areas in Sabine NWR.

185. Use dredged materials to further build up the potentially developable land on the east side of the channel, and investigate ways to modify present restrictions on development.

186. Constrict the channel at Sabine Pass to reduce saltwater intrusion into Sabine Lake.

187. Construct a weir in the vicinity of the causeway to reduce saltwater intrusion into Sabine Lake.

188. Construct a series of small islands between the north end of Pleasure Island and Sabine Island to reduce saltwater intrusion into Sabine Lake from the channel.

189. Use the higher-quality dredged materials obtained through offshore dredging for marsh and beach restoration.

190. Use dredged materials to restore the shoreline and Hwy. 87 between Texas Point and High Island.

191. Continue to insure freshwater inflow into Sabine Lake from the Neches and Sabine rivers (note: not location specific).

192. Construct a public boat launch on the Louisiana side of the causeway at the site of the present deteriorated boat ramp to provide access to Sabine Lake from Louisiana.

193. Rehabilitate the old boat launch at the burned out bridge on old Hwy. 90.

194. Rebuild the deteriorating islands between the north end of Pleasure Island and Sabine Island to reduce saltwater intrusion into Sabine Lake from the channel.

195. Construct substrates for oysters in Sabine Lake to renew oyster production.

196. Ensure that future restoration and beneficial use projects comply with Louisiana mandates and Louisiana's Coast 2050 plan (note: not location specific).

197. Stabilize the levees of the GIWW throughout its entire extent in the Louisiana portion of the study area.

198. Restore the levees on the Vinton Drainage Canal.

199. Use dredged materials to restore road access to the Sabine Lighthouse.

200. Construct a lock in Sabine Pass to eliminate saltwater intrusion into Sabine Lake.

201. Use dredged materials for erosion control on both sides of the channel from Sabine Pass to the north end of Pleasure Island.

202. Stabilize the shoreline of the entire Neches River channel.

203. Stabilize the lake shoreline and replenish adjacent marshes in the area from Blue Buck Point to Johnsons Bayou, leaving the bayous open.

204. Construct a structure within the causeway to slow tidal flows in and out of the south end of Sabine Lake.

205. Construct a lock at the mouth of the Sabine River to regulate freshwater flows into Sabine Lake from Toledo Bend Reservoir.

206. If the SNWW project is approved, develop a joint Louisiana-Texas plan to deal with any unforeseen problems that might occur (note: not location specific).

207. Use dredged materials for beach restoration from Texas Point to High Island.

208. Construct a fishing pier in connection with the improved boat launch on the Louisiana side of the causeway.

209. Construct a large parking area in connection with the improved boat launch on the Louisiana side of the causeway.

210. Construct a structure at the mouth of Lighthouse Bayou to limit saltwater intrusion.

211. Use dredged materials to restore the beach from Louisiana Point to Constance Beach.

212. Use dredged materials to reinforce the roadbed of Hwy. 82 along the Louisiana coast.

213. Use dredged materials to enhance the beach at Louisiana Point.

214. Use dredged materials to restore Fina Anchorage Island created by the cutoff in the Neches River.

215. Use dredged materials for chenier restoration in Louisiana, including planting of native vegetation to provide habitat for neotropical migratory songbirds.

216. Use dredged materials to restore deteriorating marshes in the chenier plain.

217. Use dredged materials to construct new cheniers in Louisiana.

218. Establish salinity control on the bayous and canals entering Sabine Lake from Louisiana.

219. Use dredged materials to restore cheniers on the Texas side of the channel.

220. Use dredged materials to restore beaches and dunes along the Louisiana coast to provide bird habitat.

221. Move Hwy. 87 one thousand feet inland from the beach from Texas Point to High Island, build a dune structure, and fill in the area with dredged materials to slow erosion.

222. Stockpile dredged materials and mine them for beneficial use when needed (note: not location specific).

223. Use dredged materials (sand and mud) to restore the coastline west of Texas Point.

224. Use dredged materials to restore the marshes north of Keith Lake.

225. Restore the marshes from Bessie Heights Marsh to Rose City Marsh as one marsh system.

226. Fill manmade ditches within the Texas marshes (Sea Rim Pintail Flats Marsh, Lower Neches Marsh, Bessie Heights Marsh, Texas Point Marsh, McFaddin Marsh, Meyers Bayou Marsh, etc.) to restore the historic hydrology and salinity (note: not location specific).

227. Construct a saltwater barrier at Sabine Pass.

228. Construct water control structures at the mouth of every canal and bayou in Texas that connects with the channel (Pilot Station, Texas Bayou, Keith Lake Fish Pass, Bessie Heights, Lower Neches, etc.) to restore the historic hydrology, and use dredged materials to fill the canals after water control is accomplished (note: not location specific).

229. Use dredged materials to raise Hwy. 87 from the GIWW bridge south to Sabine Pass.

230. Reconstruct Hwy. 87 from the GIWW bridge south to Sabine Pass to allow sheetflow under the road.

231. Use dredged materials to build up eroding areas on Pleasure Island while avoiding any damages to the lake.

232. Develop a comprehensive study of the best possible restoration of the marsh system from Bessie Heights Marsh to Rose City Marsh.

233. Transport dredged materials outside of the study area so that they can be more widely used, for example at Rollover Pass (note: not location specific).

234. Use dredged materials to create vegetated dunes and restore the beaches from Texas Point to High Island.

235. Mine existing placement areas for materials to build dunes and restore beaches along the Texas coast (note: not location specific).

236. Use dredged materials to build a barrier island from Texas Point to Rollover Pass.

237. After historic hydrology and salinity have been reestablished (as per 226 and 228) in Texas' degraded marshes (Sea Rim Pintail Flats Marsh, Lower Neches Marsh, Bessie Heights Marsh, Texas Point Marsh, McFadin Marsh, Meyers Bayou Marsh, etc.), build land masses and islands, with coarse dredged sand used to establish bird grit sites (note: not location specific).

238. Use dredged materials to construct a bird island in Sabine Lake.

239. Use the higher-quality materials from offshore dredging for beach restoration.

240. Construct water control structures at the mouth of every canal and bayou in Texas that connects with the channel (Pilot Station, Texas Bayou, Keith Lake Fish Pass, Bessie Heights, Lower Neches, etc.) to restore the historic hydrology, and use dredged materials to fill the canals after water control is accomplished (note: not location specific).

241. Use dredged materials to create vegetated dunes and restore the beaches from Texas Point to High Island.

242. Use dredged materials from the SNWW and from Entergy's canal dredging to restore the declining marshes on Entergy property.

243. Use dredged materials to levee Entergy's outflow canal to keep sediment out of the canal and to keep the flow of water from eroding the marsh.

244. Use dredged materials in any fashion that would keep saltwater from intruding into the marshes on Entergy property.

Date: June 27, 2002

To: Lizette Richardson
Galveston District Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

From: Harold J. Schoeffler
Conservation Chair Delta Chapter, Sierra Club
P.O. Box 2218
Lafayette, LA 70502

Re: Scoping Comments Sabine-Neches Waterway

The following concerns are listed in the hopes that these issues will be thoroughly investigated and addressed in the environmental impact study.

1. Any dredging project threatens aquifers, and a geologic study of the entire site is necessary to make sure that vitally needed groundwater sources are not contaminated.
2. Mitigate the loss of productive water bottoms, wetlands and farmlands related to spoil disposal and channel enlargement.
3. Limit through the building of a lock system the loss of fresh water during flood, salt water intrusion during low water droughts and minimize hurricane storm surges.
4. Maintain the estuarine nature of the Sabine lake and marsh system.
5. Allow for the escapement of species such as eels and channel bass that depend on free movement from fresh water to salt water.
6. Protect entire area from long term loss of wetlands and marshes.
7. Consider as an alternative the piping of products to an offshore terminal such as an offshore super port.
8. Determine impact on neo-tropicals, wading birds, water fowl, terns, skimmers, brown pelicans and sandpipers.
9. Determine the impacts of a worse case collision such as two tankers , and determine the need for a port traffic control system over the entire project area.
10. Determine impacts on water quality during initial and maintenance dredging.
11. Determine shoreline impacts on riparian zones related to vessel wave impacts and initial and maintenance dredging.
12. Determine impacts on 404B1 guideline areas such as wildlife reserves and management areas, rookeries, wetlands, oyster reefs, mud flats, sandbars and beaches.
13. Determine socio-economic impacts on sport commercial fisheries, hunting, crabbing, shrimping, tourism, oystering and other recreational losses associated with the project.
14. Endangered sea turtles are attracted to tidal passes such as the Sabine and could be taken by dredges. Determine the risk and take all precautions to protect endangered sea turtles.

15. Determine the impacts on flora and fauna in the project area. Look at placing top soil, grading, leveling and planting of spoil areas above sea level with a goal of creating wildlife habitat.
16. Make spoil areas subject to the public servitude.
17. Test sediments for toxic materials before dredging over entire length of project.
18. Determine impacts of increased shipping and marine traffic.
19. Determine gulf shoreline impacts due to possible changes in near shore currents and wave patterns.

Sincerely,

Harold J. Schoeffler

Harold J. Schoeffler

Coalition to Restore Coastal Louisiana
746 Main Street, Suite B-101 • Baton Rouge, LA 70802
225-344-6555 • 225-344-0590 fax • 1-888-522-6278 • www.crcl.org

June 28, 2002

Ms. Lizette Richardson
Galveston District
US Army Corps of Engineers
P O Box 1229
Galveston TX 77553-1229

Dear Ms. Richardson:

On behalf of the Coalition to Restore Coastal Louisiana, we would like to express our grave concern about the potential negative impacts on Louisiana's coastal wetlands should the proposed widening and/or deepening of the Sabine-Neches Waterway channel take place.

The proposed changes to the Sabine-Neches Waterway channel will increase shoreline erosion and saltwater intrusion in the Calcasieu-Sabine basin. Saltwater intrusion has contributed greatly to the loss of wetlands in the Calcausieu-Sabine basin over the past 50 years. This project would exacerbate the loss of additional wetlands and vital estuarine habitat.

Due to the potential for increased salinity and shoreline erosion, this proposed project appears to conflict with the restoration strategies outlined in *Coast 2050*. *Coast 2050* is a comprehensive strategic plan for restoring Louisiana's coastal wetlands and stabilizing the coastal zone to prevent further wetland loss. The plan has been approved by all 20 coastal parishes, the state, and federal government agencies, including the US Army Corps of Engineers. This project, as proposed, could potentially thwart the implementation of *Coast 2050* and threaten Louisiana's ability to gain greater national support for coastal restoration.

Also, the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) requires that all US Army Corps of Engineers' navigation and flood control projects be consistent with coastal restoration plans developed under the CWPPRA statute. We have seen no evidence to date that this has been done with respect to this project.

Specific ecological impacts include, but are not limited to increased salt-water intrusion, plant community changes, loss of wetlands as a result of plant community changes due to salt-water intrusion, increased introduction of exotic species due to ballast water discharge, loss of oyster reefs in Sabine Lake due to increased salinity levels, contaminants in dredged sediments entering the food web, increased scour of some channel areas, and potential impacts to sensitive fin fish species such as paddle fish. Overwhelmingly, the increase in salinity levels to the estuary, including surrounding wetlands, will have the broadest and longest lasting effects. Three dimensional models by Dr. Ehab Meselhe of the University of Louisiana-Lafayette indicate that a large volume (wedge) of salt-water can potentially move well into the channel, with its propose dimensions, as well as into Sabine Lake. Experience has taught us that

increasing channel depth and width directly allows more salt laden water to enter the ecosystem. Both the existing Sabine-Neches Water Way (SNWW) and the nearby Calcasieu Ship Channel are examples of these impacts. Wetland deterioration connected with salt-water intrusion is well documented. Marshes near the Calcasieu Ship Channel underwent almost immediate changes after dredging to deepen the channel was conducted in the mid 1950's, resulting in the loss of nearly all fresh and oligohaline marshes within 20 years (USFWS data). Some of these exist as salt marshes today, but thousands of acres of land were converted to open water. Currently, intense efforts funded by CWPPRA and in accordance with *Coast 2050* are being conducted to restore these ecosystems to healthy and productive habitat.

Along the Sabine Lake eastern shoreline, healthy coastal marsh in Sabine National Wildlife Refuge will undoubtedly be impacted. This area is one of the healthiest areas of marsh in southwestern Louisiana. Loss or deterioration of this habitat will allow greater intrusion into the interior of the refuge. To the north of the refuge, Gray Stream Property Management Company owns much of the wetland between the north refuge boundary and the Gulf Intercoastal Water Way (GIWW). These wetlands are already in a state of advanced deterioration. Additional stresses due to increased salt-water effects could potentially result in the loss of these lands.

Potential impacts to fauna in the estuary include detrimental effects upon paddle fish, Kemp's Ridley Sea Turtle and oyster reefs. Within the Sabine River Drainage Basin, the Western Sand Darter and the Western Hill Splitter Mussel reside, both on the endangered species list of the state of Texas, and therefore species of concern in the state of Louisiana (LA DWF). The paddle fish is a long-lived, migratory, and environmentally sensitive species, typically not reaching breeding maturity until after 3 years of age or longer. If environmental conditions are not right, breeding will not occur. Impacts due to salt-water intrusion and due to increased suspended sediments in the water column as a result of dredging could adversely affect reproduction of this species. Populations of paddle fish have decreased steadily over the past few decades, resulting in this species being placed on the protected species list of the state of Louisiana. In addition, larval paddle fish drift to the south end of Sabine Lake which is the nursery area for the species. Most people agree that salt-water concentrations will increase at the south end of the lake, thus further endangering this estuarine species.

Kemp's Ridley Sea Turtle populations occupy nearshore waters near Sabine Pass. Dredging operations could have direct impacts upon the turtles. Oyster reefs are common in the lower half of Sabine Lake. Altering the isohaline will result in the loss of some of these reefs. Payouts by the state of Louisiana to owners of oyster reefs must be considered in cost-benefit ratio analyses. Also, increased sediment loads in the water column will adversely affect these oyster beds, covering them at least in part and lowering productivity or possibly killing them outright.

Little has been said about the beneficial use of dredged materials. These materials should be used to restore and/or enhance degraded marshes. However, since these materials come from a heavily traveled ship channel which is connected to a city with heavy industry, the potential for contaminants in the sediments is large. Virtually no work has been done on the concentrations of contaminants in dredged materials used beneficially for wetland restoration. There is no record as to whether or not contaminants, such as heavy metals, are entering the food web and possibly bioaccumulating as they move up the line. The only research project addressing this question is being conducted at McNeese State University, in Lake Charles Louisiana and no data has been produced yet for public use. In another project, on the Anacostia River, large concentrations of contaminants have been found in sediments which were dredged from the river and then used to restore degraded marsh. Therefore, this issue should be of major concern.

The potential for the introduction of exotic species will increase with increased ship traffic from foreign ports. Since ballast water exchange at sea in not mandated in the United States, organisms from foreign waters will be released when the ballast is dumped from these ships. Either requiring ballast exchange at sea, or requiring the quarantining of ships until port authorities can ascertained that no non-native species exist within the ballast, must be enforced to reduce this threat. Introduced species is already a major problem in US waters.

The question of hurricane and storm surge impacts has arisen. Some feel that these impacts will be minimal since hurricanes are infrequent. This is inadequate reasoning. Given the low elevation of the Louisiana coast, even many miles inland, coastal flooding due to storm surge and other weather related events is a fairly common occurrence. A tropical system, such as a hurricane can be low enough in intensity as to not cause widespread structural damage to buildings but can still produce significant tidal surges. Along the Gulf of Mexico coast in Louisiana, as sustained southern wind can produce tidal surges several feet above normal. Tropical storms and low lever hurricanes can produce surges sufficient enough to flood much of the landscape. These don't even need to directly hit the area of the proposed project to cause flooding. As long as the winds are from the southwest to the southeast, tidal surges of unusual height will occur. Therefore, the premises, as well as the logic used to present the argument that hurricanes will have a negligible effect are flawed. These wetlands are our best defense against tidal surges. To compromise their integrity and structure will certainly lead to increased flooding problems and associated costs.

In general, this project seems to be designed to benefit just a few people, namely those of Beaumont, Texas, while the negative impacts and costs will be the burden of many, mostly the people of Louisiana. Ecological impacts of increased salt concentrations will affect both flora and fauna and result in wetland loss. We have seen this cause-and-effect many times. Therefore, the cost of restoration of Louisiana wetlands must be considered. Also, since this project will most likely have negative impacts on Louisiana wetlands, then it violates the CWPPRA requirement that all US Army Corps of Engineers' navigation and flood control

projects be consistent with coastal restoration plans developed under the CWPPRA statute. Additional costs will be felt in the loss of commercial oyster fishing and potential lawsuits, loss of tourism in declining sport fishing, loss of tourism due to loss of wetlands (unless these are restored), an increase in the decline of protected, threatened and endangered aquatic species, and increased National Security costs as shipping traffic increases to the Port of Beaumont.

Finally, we were dismayed at the effort put forth at the EIS Scoping meeting in Lake Charles on May 28, 2002. In opening remarks, the US Army Corps of Engineers stated it wished to assemble all concerns relative to this project. However, only three minutes per person was allowed which, given the complexity of the issues and the range of concerned parties, was grossly inadequate. This constraint seemed to fulfill the legal obligation of the Corps to solicit comments, but did not provide enough time for the presentation of all issues and concerns of the public in attendance. The purpose of public meetings and public comment is to learn from the public's experience and to better understand the concerns they have. It is not to learn what can be learned in three minutes. The perfunctory nature of this meeting defeated the very purpose of the meeting to a large extent and we would hope that future efforts to build the record as required by the National Environmental Policy Act and common courtesy will be better handled.

In closing, we feel that any proposed project that will contribute to the destruction of wetlands while state and federal government programs spend millions of dollars to restore those same wetlands is inconceivably wasteful and ill-planned.

Sincerely,

Mark S. Davis
Executive Director

Cc: CRCL board
Gov. M.J.Foster
Senator John Breaux
Senator Mary Landrieu
Congressman Chris John
Sec. Jack Caldwell (LDNR)
Sec. Jimmy Jenkins (LDWF)
Sec. J. Dale Givens (LDEQ)
Senator Gerald Theunissen
Senator Willie Mount
Rep. Ronnie Johns
Rep. Don Flavin

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August 13, 2002

Colonel Nicholas J. Buechler
Commander and District Engineer
U.S. Army Corps of Engineers
Galveston District
Post Office Box 1229
Galveston, TX 77553-1229

Dear Colonel Buechler:

I have been contacted by Mr. Norris East of Hackbay, Louisiana, regarding the proposed widening and/or deepening of the Sabine-Neches Waterway channel.

Please give the views and concerns of Mr. East every appropriate consideration within federal guidelines. Also, please investigate the enclosed correspondence sent to me and provide me with any information you might have which responds to the issues raised in his letter. Your reply may be forwarded to the attention of Noelie Zeringue.

Thank you for your attention and assistance.

Sincerely,

John

JOHN BREAUX
United States Senator

JB/nmz
Enclosure

CERN TO YOUR LETTER
4-17-02

DEAR SIRS 02 JUL 25 AM 9:19

I WOULD LIKE TO KNOW WHY YOU HAD TO PUT THE SALT WATER BARRIER AT LAKE CHARLES IF SALT WATER DOES NO DAMAGE TO CALCASIEU RIVER

I WOULD ASSUME THAT YOU HAVE NEVER BEEN THERE I HAVE SEEN LOT OF DAMAGE TO THE TREES GRASS BANK ERISION.

IN YOUR LETTER YOU STATER THAT A GAP AT CAMERON WOULD BE A HAZARD TO SHIPING

WELL WHAT WOULD YOU SAY ABOUT ALL THE LOCKS ON THE INTER COSTAL CANEL I SUPPOSE THAT IS NO HASARD WELL FRIEND I HAPPEN TO BE A TUG BOAT CAPTAIN SO I KNOW FROM FIRST HAND

WE DO NOT HAVE THE POWER OF THE SHIP'S TO CONTROL THE BARGES IF A SHIP CAPTAIN CANNOT PASS THRU A STRAIT CHANNEL HE BETTER GO BACK TO SCHOOL.

YOU STATED THAT WE ASSUMED THAT 400 FT CHANNEL WOULD DO NO DAMAGE

I RECENTLY TOOK A TRIP TO WA-
TON DC. I MET PRES BUSH.
I WILL WRITE HIM ABOUT THIS
SINCE TIME LIMIT WITH HIM COULD
NOT EXPLAIN ALL DETAILS.
WALK I AM ON THE SUBJECT ABOUT
THE CHANNEL I AM OPPOSED TO
PUT SPOIL IN CALCASIEU LAKE
UNTIL YOU FILL UP LAKE CHARLES
- PREIN LAKE - MOSS LAKE THE O
RIVER IN PREIN LAKE WOULD HOLD
A LOT OF SPOIL SENT THE BEST
OUT THE CHANNEL TO GULF LIK
THE WATER GOES TO CONTS HELE
IT DOES NOT FILTER ALONG THE
BEACHES LIKE IT USE TO THE ST
OF LA SPENTS MILLIONS TO KEEP T
BEACHES FROM WASHING AWAY BE-
-CAUSE OF THE SHIP CHANNEL "
YOU SAY AT THE TIME FED. STUDIE
ESTIMATED SHORT TERM SALITINES
WELL CENTS THIS WAS 1968 WE ARE
NOW IN 2002. NEED I SAY MORE.

Norris East

SENDING COPY TO SEN BREAUX

Mr. Norris J. East
328 Channelview Dr.
Hackberry, LA 70645

TO THE ECOLGY WELL GENT'S
YOU HAVE A RUDE AWAKING COMING
TO YOU.
I WOULD LIKE TO KNOW WHY THE
CORP'S. IS DOING A STUDY OF WAAT
A HURRICANE WOULD DO TO NEW ORLEANS
AREA IS LAKE CHARLES NOT AS
IMPORANT.
YOU CAN WORD THIS ANY WAY YOU WAN
TOO BUT YOU STILL HAVE THIS PROBLEM
WHIS IS FAR MORE SERIOUS THAN YOU
THINK
GOD FORBID IF A HURRICANE HITS
DIRECT AT CAMERON LAST YRS SINCE
LAST ONE ONLY YOU WILL HAVE TO
EXPLAIN TO LA. PEOPLE WHY
SO MUCH WATER GOT IN THEIR
HOMES THIS IS REAL SERIOUS
BUT YOU WORRY MORE ABOUT
SHIP'S GOING THRU THAN PEOPLE
IF NO GAP HOW ABOUT A SET OF
LOCK AT CAMERON I AM SURE THAT
THOUSAND'S OF SPORT FISHER MAN
WOULD GO ADONG WITH THIS
IT WOULD MAKE THIS A SPORTMAS PAR.

DEAR SEN BREAUX

A COPY OF COASTAL RESTRATION SHOULD GIVE YOU PLENTY OF AMMO TO ARGUE OUR CAUSE SINCE THIS WOULD BENEFIT A FEW, WE ARE BUY THE THOUSAND'S AGAINST THIS ESPICIALLY SALT WATER.

THANKS

Norris East

Mr. Norris J. East
328 Channelview Dr.
Hackberry, LA 70645

2405 Evergreen Lane
Pineville, LA 71360
August 23, 2003

Ms. Lizette Richardson
Galveston District
U.S. Corps of Engineers
P. O. Box 1229
Galveston, TX 77553-1229

Re: Proposed Enlargement of Sabine-Neches Navigation Channel.

Dear Ms. Richardson:

Please furnish me with documents from the public record for this project:

1. A copy of the sediment analysis

2. A copy of the draft EIS or EA for this project.

Thank you for your cooperation in this matter.

Sincerely,

Richard W. Bryan, Jr.

cc: Honorable Mary Landrieu

2405 Evergreen Lane
Pineville, LA 71360
August 28, 2002

Ms. Lizette Richardson
Galveston District, COE
P.O. Box 1229
Galveston, TX 77553-1229

Re: EA for Proposed Enlargement of Sabine-Neches Navigation Channel.

Dear Ms. Richardson:

Please address my comments in the final EA for the above proposal.

The first consideration must be the safety of the people of Beaumont, Port Arthur, Bridge City and the entire project area. The second must be the protection of the commercial and residential property in these cities and elsewhere in the project area.

We cannot afford a repeat, at public expense, of the Mississippi River Gulf Outlet Canal, which was built by the Corps of Engineers (COE) over the objections of farsighted people, who correctly warned of the eminent possibility of hurricane surge damage. Now COE has realized its mistake and is calling for the canal to be closed.

No benefit/cost ration on this project can be considered complete or legal, unless it takes into consideration the very real possibility of loss of both human life and property from this project.

The Cost of Anticipated Hurricane Damage

Can COE provide assurance no loss of life and property will occur from hurricanes or other storms because of this project?

If not, then the cost of both accident and property insurance must be considered as a project cost.

Also mandatory, is an accurate and realistic appraisal of transportation benefits, not inflated projections, which, for waterways like the Red River, Ouachita-Black and Tennessee-Tombigbee, have never materialized.

At the same time, the proposal demands, under NEPA, the very best possible projection of all potential wildlife losses (dealt with separately later in these comments). Prior to construction of the

Tenn-Tom in northeast Mississippi, the Tombigbee had 52 species of freshwater mussels, the largest and most diverse mussel population in the state, including 16 species found nowhere else in Mississippi.

Today, out of 10 federally listed species in the project area, 5 have been extirpated from the state.

At one time the Neches River was habitat for many of the numerous mussels which can still be found in the Calcasieu River basin in Louisiana. COE has a legal responsibility to the people of this country to make certain what happened on the Tombigbee doesn't occur on the Neches and other American rivers.

Benefits/Costs

To comply with the NEPA requirement to inform the public sufficiently that informed and reasonable choices can be made, the EA must convincingly demonstrate why the economic benefits to a few interests will outweigh the losses to the American public at large, in terms of safety, health, recreational opportunities, and the use and enjoyment of the resources of this area.

Here in Louisiana, we have been the recipients of the Ouachita-Black and Red River Navigation projects and numerous projects in the coastal swamps and marshes and the only tangible benefit I can see is that we are losing 50 square miles annually in one of the most productive marshes anywhere. And right here in my backyard we almost lost one of the 10 most important wetlands in North America, Catahouia Lake, courtesy of COE.

Another area of significence is, how much is enough? I've heard the original channel is 125-ft wide by 10-ft deep and now COE proposes to enlarge it to 400-ft wide by 50-ft deep. How long will it be before new technology in the shipping industry demands an even deeper, wider and more dangerous channel?

When do we reach the point where the benefits of one more deep water port fail to outweigh the benefits from consering our natural resources? And who gets to decide, the people who will foot the bill, or COE, which will benefit the most?

Since this project borders on Louisiana, I believe the Corps has a responsibility to access the cumulative impact of its projects in Louisiana ~~all the way~~ from the Pearl River all the way across the state to the Sabine.

From a legal standpoint, the need to do this is covered by Article 9, Section 1 of the Louisiana Constitution.

The project will almost certainly increase the potential for destructive surges from the Gulf, will require dredging on a regular basis and will will increase the possibility of stiring up toxic materials in Sabine Lake, etc. All of this must be discussed in the EA.

Mercury potential

Before any spoil is dredged, it must be tested for mercury and other contaminants, and plans must be formulated for handling it is a manner that won't pose health risks to humans or wildlife.

Spoil taken from 50-feet deep in the channel may not be suitable for creating wetlands or depositing in wetlands. The ability of this spoil to grow vegetation must be determined first.

A projection is needed on how often the channel will require redredging. In the event the material removed from the channel is contaminated by any of several materials, the periodic redistribution of these materials is a critical factor.

To avoid likely legal challenges, water quality testing for a 401 Water Quality Certification should be done by EPA, not some "captive" state agency.

Here in Louisiana, establishment of TMDLs has been taken out of the hands of LDEQ and this agency has been successfully sued on, what appears to be, a very similiar COE project on Little Lake and the Pearl River.

Wetlands

Any wetlands destroyed or degraded in the Sabine NWR or Texas Point NWR should be replaced adjacent to these refuges and the plans for all wetland mitigation under 404 of the Clean Water Act should be in place before the project is started. Under no circumstances should this mitigation be the pie in the sky by and by we've seen for the Red River Navigation Project, where after 30 years all the mitigation land has not been acquired.

In addition, mitigation must be included for all project induced damages, including, but not confined to:

1. The impact of wave action or salt water intrusion damage to:

   A. The western boundry of the Sabine NWR.

B. The eastern boundry of the Texas Point NWR

C. Privately owned wetlands anywhere on Sabine Lake.

D. The lighthouse(s) or other historic sites at Sabine Pass or elsewhere.

E. Damage to hwys 73, 82 and 87.

F. Sabine Island WMA.

G. Salt water intrusion into the coastal aquifer.

2. Damage to the Gulf ecosystem from dredging a channel 20-miles out from shore.

3. Damage if the channel induces the summer dead water from the Gulf to come inland.

4. Adverse impact on the terrestrial, avian and aquatic wildlife associated with the project area, including Sabine Lake, Sabine Pass, associated marshes and estuaries and the Gulf:

A. Sea turtles, crabs, shrimp, oysters, fish, sharks

B. Waterfowl, sea birds, shorebirds,

C. Neo-tropical migratory birds,

D. Raptors,

E. Whales, manatee, dolphins,

F. Plankton.

All the species in all the above categories must be studied for population numbers, and mitigation measures taken for any projected decline in their numbers as a result of the project.

5. In addition, COE has a legal responsibility under the provisions of the Endangered Species Act to consult with the U.S. Fish & Wildlife Service on the following federally listed species and include any correspondance or Memorandums of Understanding in the EA:

Sea Turtles:

Green, Hawksbill, Kemp's Ridley, Leatherback and Loggerhead.

Sabine-Neches Waterway

Whales:

Blue, Sei, Sperm and Finback.

Manatee:

West Indies Manatee

Water birds:

Brown Pelican

Shore birds:

Piping plover.

Raptors:

Bald esgle, peregrine falcon

In addition to the several federally listed species, numerous other species are listed as endangered by the state of Texas.

While I am not knowledgeable about the laws of Texas, any of species which occur on the Louisiana side of the project are protected under article 9, section one of the Louisiana constitution.

These species listed by Texas include:

Whales:

Gervais beaked, goose beaked, pigmy sperm, dwarf sperm, killer whale or orca, false-killer, short-finned pilot, pigmy killer, and black right.

Dolphin:

Atlantic spotted and rough toothed

Water birds:

Reddish egret, white-faced ibis, wood stork.

Raptors:

Swallow tailed hawk, common black hawk, northern aplomado falcon, gray hawk, zone-tailed hawk

Shorebirds

Sooty tern

Sabine-Neches Waterway

River fish

Paddlefish, shovelnose sturgeon.

Please respond to my comments in the EA and provide me with a copy of this document.

Sincerely,

Richard W. Bryan, Jr.

JOHN BREAUX
LOUISIANA

MAJORITY
CHIEF DEPUTY WHIP

COMMITTEES:

COMMERCE, SCIENCE, AND TRANSPORTATION

FINANCE

RULES AND ADMINISTRATION

SPECIAL COMMITTEE ON AGING
CHAIRMAN

WASHINGTON OFFICE:
(202) 224-4623
TDD (202) 224-1986

senator@breaux.senate.gov
http://www.senate.gov/~breaux

United States Senate

WASHINGTON, DC 20510-1803

STATE OFFICES:

2237 SOUTH ACADIAN THRUWAY, SUITE 802
BATON ROUGE, LA 70808
(225) 248-0104

U.S. FEDERAL COURTHOUSE BUILDING
800 LAFAYETTE STREET, SUITE 1300
LAFAYETTE, LA 70501
(337) 262-6871

1900 NORTH 18TH STREET, SUITE 805
MONROE, LA 71201
(318) 325-3320

HALE BOGGS FEDERAL BUILDING
501 MAGAZINE STREET, SUITE 1005
NEW ORLEANS, LA 70130
(504) 589-2531

CENTRAL LOUISIANA:
(318) 487-8445

December 18, 2002

Colonel Nicholas J. Buechler
Commander and District Engineer
U.S. Army Corps of Engineers
Galveston District
Post Office Box 1229
Galveston, TX 77553-1229

Dear Colonel Buechler:

I have been contacted by Ms. Sherrill J. Sagrera of Abbeville, Louisiana, regarding the Sabine/Neches Channel.

Please give the views and concerns of Ms. Sagrera every appropriate consideration within federal guidelines. Also, please investigate the enclosed correspondence sent to me and provide me with any information you might have which responds to the issues raised in her letter. Your reply may be forwarded to the attention of Noelie Zeringue.

Thank you for your attention and assistance.

Sincerely,

JOHN BREAUX
United States Senator

JB/nmz
Enclosure

November 9, 2002

02 DEC 16 PM 6:37

U. S. Senator John Breaux
705 Jefferson St., Room 103
Lafayette, LA. 70501

Dear Senator Breaux,

The State, Federal and local Governments along with participation of the public has developed a comprehensive restoration plan (Coast 2050). All projects must be consistent with this plan.

The U. S. Army Corp of Engineers' New Orleans district has participated and signed off on the plan. All projects of navigation, shoreline protection, hydrologic restoration, river diversions and the like consider impact to their neighbors. It seems that the Corps is the Corps. Why is the Corps' Galveston district supporting the Sabine/Neches Channel, which is detrimental to the efforts that we, the New Orleans district and Coast 2050, are trying to achieve? Co-ordination between these two districts should be achieved. Some kind of consensus should be reached so we can save the coast/wetlands of Louisiana.

Funding is a critical issue. Funds that benefit one area should not be detrimental to the ongoing efforts of neighboring areas.

I don't want to stand in the way of economic progress. But economic progress should not be at the expense of the wetlands and the environment.

Respectfully,

Sherrill J. Sagrera
12139 W. LA. Hwy. 82
Abbeville, LA. 70510

Stokes, Janelle S SWG

From: Tucker, James [James.Tucker2@twcable.com]
Sent: Wednesday, January 06, 2010 3:43 PM
To: Stokes, Janelle S SWG
Cc: Larive, Adam; Zapata, Juan
Subject: Sabine-Neches Waterway Channel Improvement Project

Attachments: GT PROJECT - SABINE-NECHES WATERWAY CHANNEL INPROVEMENT PROJECT 1999-2003 4319_001.pdf

GT PROJECT -
INE-NECHES W/

Ms. Stokes attached is the approved permit showing where we have a fiber run 1

Under the channel.If any more Information is needed please let me know.

Thank You

JAMES TUCKER

TIME WARNER CABLE

DALLAS DESIGN DEPT.

(214)319-4816

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Mr. James Tucker
Time Warner Cable
Dallas Design Department
P.O. Box 650063
Dallas, TX 75265-0063

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for providing this information.

January 10, 2010

USACE
Corps of Engineers
Galveston District
P O Box 1229
Galveston, TX 77553-1229

RE: Public Comments D.E.I.S.

Dear Ms. Stokes:

I would like to address some of my concerns with the dredge containment compartments used for dredging in the deepening and widening of waterways. My observations over the last 32 years of the containment areas on Pleasure Island have caused me to have concerns regarding the large impact on the marine life in the spoil areas. I have witnessed many fish and shrimp kills over the years and I am concerned that the original design of these compartments is not being adhered to. Below are my concerns.

TPWD Designation – TPWD has classified spoil area #10 & #11 as nursery areas for marine life. If this is indeed a nursery area how can spoil be placed in the compartments and destroy the nursery? 1

Effluent Ditches – The effluent ditches were designed to release the overflow of water from the spoil areas back out to the environment. Marine life travels though these ditches into and out of the spoil areas. The spoil placement in the dredge areas is not being monitored and the ditches are filled up with silt. In the case of spoil area #10 the ditch there is so filled with silt that the water is coming out over the road on the North effluent ditch. This has happened on the last two dredging operations. Apparently the dredging companies are not doing their jobs properly. If compartment #11 is monitored properly for silt placement, the two effluent ditches have the potential to be used for development of a marina and fishing area in the future. 2

Marine Life & Bird Sanctuary – All dredge areas contain marine that life that enter into the spoil areas due to high tides and storms. Then they become trapped and end up dying because of the climate changes. No one has ever spoken up about the impact on the marine life that is lost due to these sites. Bird life is impacted by the completion of these sites as well. Pleasure Island is a bird sanctuary and many avid bird watchers visit the Island every year. 3

Public Notice – After all construction is done and spoil area 10 and 11 is done and before any dredging starts I would ask the Corps of Engineers put into public record that all citizens can use these levee roads for fishing and bird watching. The Corps maintain the grassy areas adjacent to the roads. Over the years no one has wanted responsibility for the grass cutting. Without proper maintenance of the grassy areas access on the levee roads become impaired. 4

From 1977 through 1982 my brother and I had spoil area #11 leased for the research of aquaculture farming. With a grant from Texas A&M and Lamar University, the possibilities were very positive and the sites have great potential for the development of aquaculture. Under controlled conditions the marine life could be raised and returned to the environment. After 32 years observation we have witnessed the overall picture of the use of these dredge sites by the Corps of Engineers.

Respectfully,

Ronald R Moon
707 N 31st St
Nederland, TX 77627
409-721-9492 home
409-963-9872 cell

Mr. Ronald R. Moon
707 N 31st Street
Nederland, TX 77627

RESPONSE TO COMMENTS

Comment No.	Response
1	The primary purpose of the two large placement areas on Pleasure Island (Placement Areas [PA] 8 and 11) is to store dredged material removed from the Sabine-Neches Waterway (SNWW). However, in 1997-1998, changes were made to PA 11 that allows it to serve as a nursery area for marine organisms while the area slowly fills with dredged material. Two drop-outlet structures in PA 11 were relocated to allow decanted water to exit into Sabine Lake during dredged material discharge operations. The relocation allows free tidal exchange and is providing a temporary increase in forage and nursery areas for sport and commercial fishery species. PA 11 will eventually be filled with sediments, slowly decreasing the size of the temporary forage and nursery areas. At that time, future management options, including effluent discharge locations, will be evaluated. No changes were made to outlet structures at PA 8 (referred to as PA 10 in the comment).
2	In the past at PA 8 (referred to as PA 10 in the comment), effluent did cover the road at times during dredging contracts. A construction contract underway at this time will rectify this situation by raising the elevation of the roadway. The roadway around PA 11 does not flood because the drop outlet structures drain the effluent, keeping it from overtopping the road.
3	The drop outlet structures are left open to facilitate marine life access, and therefore provide an escape route after high tides and storms. We must emphasize that the primary purpose of the PAs is the containment of dredged material. Wildlife utilizes the areas between placement episodes.
4	The roads are open to the public the majority of the time. Access is restricted during levee repair or construction contracts because it is not safe for the public to use the roads at those times. The U.S. Army Corps of Engineers (USACE) Port Arthur Area Office does not routinely maintain the grassy areas adjacent to the roads. The levee roads are public roadways in the City of Port Arthur.
5	Thank you for your comments.

Stokes, Janelle S SWG

From: Raymond Johnson [raymondcomm1@hotmail.com]
Sent: Monday, January 25, 2010 1:38 PM
To: Stokes, Janelle S SWG
Cc: Ed Harvey; George E. Johnson Jr.; Joe Hill; montanocb@yahoo.com; S. Charles; Joann Benjamin
Subject: Economic Impact on Coastal Low Income Communities

Ms. Janelle Stokes

This Project will be or has been (per study) funded with Federal Dollars.
There needs to be consider and Added , what will be the Economic Affect on these Coastal Communities which are Black , Hispanic and large levels of unemployment and poverty. 1

I am Elected Official (commissioner) of Port Of Port Arthur , elected in 1987.

Raymond C. Johnson

Hotmail: Powerful Free email with security by Microsoft. Get it now. <http://clk.atdmt.com/GBL/go/196390710/direct/01/>

Mr. Raymond C. Johnson
Port of Port Arthur
P.O. Box 1428
Port Arthur, TX 77641

RESPONSE TO COMMENTS

Comment No.	Response
1	The Final Environmental Impact Statement (FEIS) contains an evaluation of the socioeconomic effects of the proposed project on minority and low-income populations living within the study area (FEIS section 4.15.2.2 (Environmental Justice). No adverse impacts to these communities are anticipated.

US Army Corps of Engineers
Galveston District

COMMENT FORM

Sabine - Neches Waterway Channel Improvement Project
January 26, 2010
USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

__ **I am a Public Official**

Name and Mailing Address (Optional):

Name C. Michael Foster

Address 2210 Eastex Frwy. Beaumont TX 77703

Email Address

Phone (409) 899 8444

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

__ **Residential property owner or renter** __ **Business property owner or lessee**
X **Other (Please explain)** Sabine Lake Foundation

How did you learn about this meeting?

__ Newspaper X Notice in the Mail __ Email

__ Other (Please explain)

COMMENTS: ~~I'm quite certain that this comment is really not going to make any difference~~ but placing maintenance dredge spoil on the "beaches" just on the other side of the jetties in both Texas and Lousisana is simply a matter of convenience. If there is a true concern about the erosion that is taking place, then place something substantial such as Chenier LNG did. All of the shell from their spoil is still in place - even after Ike. Jerry Mambretti, TP&W, Dr. Harrel and Dr. Whittle all agree that placing spoil with only 25% sand (according to you) does more damage than good. 1

It is my recommendation that it would be wiser to place this spoil farther off the beach and put something substantial along the shore. I'm obviously aware of the serious costs associated with all of this - but we learned from the last time this was done that the muck simply carries downshore and ruins SeaRim and McFaddin beaches. 2

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Mr. C. Michael Foster
Sabine Lake Foundation
2210 Eastex Freeway
Beaumont, TX 77703

RESPONSE TO COMMENTS

Comment No.	Response
1	FEIS section 2.5.3.2.2 (Gulf Shore Beneficial Use [BU] Feature) contains an in-depth evaluation of the anticipated effects of regular shoreline nourishment at Texas and Louisiana points using maintenance material from Sabine Pass. The proposed beneficial use was evaluated and approved by the Interagency Coordination Team (ICT). It is acknowledged that most of the material will be composed of fine-grained sediments, and that some of the material will be rapidly lost from the vicinity of the shoreline. The mobile material within the surf zone should generally migrate to the west at both Texas and Louisiana points. There, the additional fine-grained sediments could lower erosion rates through mudflat accretion and wave attenuation.
2	USACE assumes that "something more substantial" refers to dense clays that originate from channel or mooring basin deepening. The use of heavier clays from the deepening of the Sabine Pass Channel was evaluated and determined to be more costly than upland placement (FEIS section 5.4.1.2). A cost-share sponsor would be needed to adopt and implement this as a beneficial use measure, and no non-federal sponsor has been identified at this time. Use of heavier clays from the deepening was also evaluated as a potential mitigation measure (FEIS Section 5.4.2), but was not adopted because of high incremental costs.

US Army Corps of Engineers, Galveston District

COMMENT FORM

Sabine - Neches Waterway Channel Improvement Project
January 26, 2010
USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

__ I am a Public Official

Name and Mailing Address (Optional):

Name Julia Zolandz
Address 1048 Oregon Ave APT Beaumont, TX 77705
Email Address jzolandz@gmail.com
Phone

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

✓ Residential property owner or renter __ Business property owner or lessee
__ Other (Please explain)

How did you learn about this meeting?

__ Newspaper __ Notice in the Mail __ Email
__ Other (Please explain) Professor

COMMENTS: The environmental research on impact of the project was conducted by the U.S. Army Corps of Engineers. This concludes me to believe the research false and biased. A nonaffiliated research team should be implemented. The cost of over 1 billion will be pushed onto the tax-payers while the oil companies will benefit primarily. Overall, I do not believe this project should be implemented due to the biased study on environmental impact. 1 2

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Ms. Julia Zolandz
1048 Oregon Avenue, Apt. D
Beaumont, TX 77705

RESPONSE TO COMMENTS

Comment No.	Response
1	Extensive studies were conducted by USACE in compliance with Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations and in coordination with the ICT. These studies utilized the best available scientific information and reached objective, scientifically-based conclusions. The FEIS was also reviewed by a team of independent external peer reviewers, and revisions to the analyses were made based on their recommendations.
2	Direct and indirect economic benefits of the proposed deepening will accrue to all users of the SNWW, and to the regional and national economy. The economic analysis presented in Feasibility Report (FR) Section V.F establishes that there would be a net economic benefit to the nation from the proposed project.

US Army Corps of Engineers
Galveston District

COMMENT FORM

Sabine - Neches Waterway Channel Improvement Project
January 26, 2010
USACE - Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

__ **I am a Public Official**

Name and Mailing Address (Optional):

Name Hubert Oxford III
Address 480 Calder
Email Address Hubert.oxford@beaumontbroadband.com
Phone 409 833 9882

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

✓ **Residential property owner or renter** ✓ **Business property owner or lessee**
__ **Other (Please explain)**

How did you learn about this meeting?

✓ Newspaper __ Notice in the Mail ✓ Email
__ Other (Please explain) Navigation District Meeting

COMMENTS:
THIS IS A GOOD PROJECT - WE NEED TO HAVE THIS PROJECT -

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE - Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Mr. Herbert Oxford
4810 Calder Avenue
Beaumont, TX 77706

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comment.

CHENIERE

Cheniere Energy, Inc.
700 Milam Street, Suite 800
Houston, Texas 77002
phone: 713.375.5000
fax: 713.375.6000

Cheniere and its Sabine Pass LNG Terminal strongly supports the proposed deepening and widening project of the Sabine-Neches Waterway. We wish to see our waterway remain highly competitive with other ports and waterways by being able to ~~safely~~ accommodate the larger ships that now carry so much of the world's trade. with a higher degree of safety.

Of course, for our part, we are most interested in promoting the capability of the Sabine-Neches waterway to safely handle the world's largest existing LNG carriers. These ships are nearly 1,150 feet in length and 180 feet in breadth. These very large LNG carriers, like other large ships trading to our area, are presently limited to a forty feet fresh water draft when entering the Sabine-Neches. Many such vessels would come in deeper if the Waterway's channels were deeper and wider. 1

Any deepening or widening will make our waterway more competitive for business that uses the larger ships and automatically adds <u>additional safety margins</u> for the existing shipping already present. Cheniere supports this project and the U.S. Army Corps of Engineers and hopes the deepening and widening work will proceed without delay. 2

James E. Kaucher, P.E.
Plant Manager, Sabine Pass LNG Project
Cheniere Energy, Inc.
337-569-7701 (Offc)
281-705-4924 (Cell)
james.kaucher@cheniere.com

Mr. James E. Kaucher, P.E.
Plant Manager, Sabine Pass LNG Project
Cheniere Energy, Inc.
700 Milam Street, Suite 800
Houston, TX 77002

RESPONSE TO COMMENTS

Comment No.	Response
1	Transportation savings benefits of the proposed deepening are presented in FR Table V-52. The economic analysis includes deepening benefits associated with loading the Liquefied Natural Gas (LNG) vessels to 43 feet (ft). Benefits to LNG vessels with design drafts of 45 ft are possible.
2	Thank you for your comment.

TEXAS ENERGY COALITION

6207 Inwood Drive
Houston, TX 77057
713-622-7388 (ph)

Texas Energy Coalition – Comments Regarding
Proposed Sabine Neches Waterway Channel Improvement Project

USACE Public Meeting – January 26 and 27, 2010

Good evening. My name is David Corban. I am a lawyer with Fulbright & Jaworski L.L.P, and I am authorized to make the following comments on behalf of Shell Pipeline, Explorer Pipeline, Enterprise Products, Kinder Morgan, and the other members of the Texas Energy Coalition. The Texas Energy Coalition was founded in 1995, and its membership is made up of pipeline transmission companies that work together on issues of common interest.

Prior to the release of the Sabine Neches Waterway draft feasibility report (DFR) on December 24, 2009, there was no prior communication by the sponsors of the proposed project with the pipeline industry regarding pipeline relocation issues. This was the case despite repeated requests to the Corps of Engineers for information about the proposed project's potential impact on the pipeline industry. 1

The DFR that was made available for the first time in late December describes a large number of pipeline relocations that the project will require. The replacement of pipelines that transport essential commodities such as natural gas is not only costly, it also requires years of advance planning and coordination, and it creates operational and engineering burdens for an industry that has strategic significance for the American economy. Yet the DFR provides little detail about the project's impact on pipeline operations, which pipelines will need to be relocated, where those pipelines are located, or how costs were estimated for pipeline relocations. 2

Given these circumstances, we believe it is unrealistic to expect that our members could provide any meaningful comments on the DFR by February 10, 2010. We believe that a more realistic comment period would allow at least 120 days, and we therefore respectfully request that the comment period be extended to at least April 26, 2010. In making this request, we assume that the Corps will promptly and definitively identify the pipelines that will need to be moved, the owner of each such pipeline, and sufficient information to understand and respond to the Corps' estimate of the costs for moving each such pipeline. 3

Based upon the DFR, we do understand the Corps of Engineers to have acknowledged that this project, as proposed, would be a deep-draft project for cost sharing purposes, and further, as required by the deep-draft cost-sharing provision of the Water Resources and Development Act of 1986, that the Corps will recommend that half of the pipeline relocation costs for this deep-draft project be borne by the pipeline owner and the other half by the local sponsor of the project. 4

Thank you for the opportunity to comment on the proposed project.

Mr. David Corban
Fulbright & Jaworski, LLP-Texas Energy Coalition
6207 Inwood Drive
Houston, TX 77057

RESPONSE TO COMMENTS

Comment No.	Response
1	Owners of pipelines crossing the SNWW were contacted by U.S. Army Corps of Engineers (USACE) in 2002. USACE requested that they provide the most current "as-built" drawings and the location of SNWW crossings to enable our assessment of potential project impacts. The project's non-Federal sponsor has made numerous presentations to industry trade groups and community organizations throughout the study period, providing updates of the study and project descriptions.
2	The DFR provides sufficient information for feasibility-level planning. A list of potentially affected pipelines was provided to pipeline companies during the Draft EIS (DEIS) public comment period. The USACE list of potentially affected pipelines should not be considered definitive. This list will be refined based on information submitted to USACE during the public comment period and subsequent to the USACE/Pipeline Owner information meeting on January 25, 2011. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the preconstruction, engineering, and design (PED) and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. There will be sufficient time for pipeline companies to make necessary preparations after the project is approved.
3	The comment period was extended an additional 30 days to March 12, 2010.
4	Please see Section 2.4.1.12 of this Final EIS for a discussion of the allocation of pipeline relocation costs.

COMMENT FORM

US Army Corps of Engineers, Galveston District

Sabine - Neches Waterway Channel Improvement Project
January 27, 2010
USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

__ I am a Public Official

Name and Mailing Address (Optional):

Name Hudson Orlando
Address 3535 Calder Beaumont
Email Address Hudson.Orlando@Barrowford.com
Phone 409 833 9182

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

__ Residential property owner or renter ✓ Business property owner or lessee
__ Other (Please explain)

How did you learn about this meeting?

__ Newspaper __ Notice in the Mail __ Email
✓ Other (Please explain) Notification Meeting

COMMENTS:

This is a Great Project for Southeast Texas and Southwest Louisiana (General Public)

We Need This Project

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Mr. Hubert Oxford
3535 Calder Avenue
Beaumont, TX 77706

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comments.

CHENIERE

Cheniere and its Sabine Pass LNG Terminal strongly support the proposed deepening and widening project of the Sabine-Neches Waterway. We wish to see our waterway remain highly competitive with other ports and waterways by being able to accommodate the larger ships that now carry so much of the world's trade, with a higher degree of safety.

Of course, for our part, we are most interested in promoting the capability of the Sabine-Neches waterway to safely handle the world's largest existing LNG carriers. These ships are nearly 1,150 feet in length and 180 feet in breadth. These very large LNG carriers, like other large ships trading to our area, are presently limited to a forty foot fresh water draft when entering the Sabine-Neches. Many such vessels would come in deeper if the Waterway's channels were deeper and wider. 1

Any deepening or widening will make our waterway more competitive for business that uses the larger ships and automatically adds additional safety margins for the existing shipping already present. Cheniere supports this project and the U.S. Army Corps of Engineers and hopes the deepening and widening work will proceed without delay. 2

James E. Kaucher, P.E.
Plant Manager, Sabine Pass LNG Terminal
Cheniere Energy, Inc.
337-569-7701 (Office)
281-705-4924 (Cell)

Mr. James E. Kaucher, P.E.
Plant Manager, Sabine Pass LNG Project
Cheniere Energy, Inc.
700 Milam Street, Suite 800
Houston, TX 77002

RESPONSE TO COMMENTS

Comment No.	Response
1	Transportation savings benefits of the proposed deepening are presented in FR Table V-52. The economic analysis includes deepening benefits associated with loading the LNG vessels to 43 ft. Benefits to LNG vessels with design drafts of 45 ft are possible.
2	Thank you for your comment.

Stokes, Janelle S SWG

From: Jerry Norris [sabinecaptain@sabinelakefishing.com]
Sent: Thursday, January 28, 2010 11:47 AM
To: Stokes, Janelle S SWG
Subject: Sabine waterway dredge material placement

Importance: High

Ms. Stokes, I have reviewed the proposed project. I have comments on the placement of spoil near the Sabine Jetties. The rate of land loss on the Texas side of the Jetty along the beach front is documented at a loss that should be addressed with all of the spoil from the project near the beach front on the west side of the jetty. The Louisiana side of the jetty has minimal loss. This should be addressed on not a half and half basis as suggested by the current plan. The Texas side of the jetty is losing 95% more land per year than the Louisiana side. I was a party to the placement of the spoil during the process with Cheniere. 1

As noted in the findings a large majority of the spoil was washed through the cut on the east side of the jetty and lost due to the sediment type and currents. placing spoil on the Louisiana side of the jetty is not sound science and not in the best interest of addressing erosion along the Texas Point. Please reconsider and place all of the spoil on the Texas side each and every time the channel is dredged in that area. I am available for any questions or help that I can give on this matter. 2

Thank you Capt. Jerry Norris

Captain Jerry Norris
Sabine Lake Guide Service
3262 Bell Street
Port Arthur, TX 77640

RESPONSE TO COMMENTS

Comment No.	Response
1	The dredged material that would be used for the Gulf Shore BU Feature originates from the Sabine Pass Channel. The state boundary between Texas and Louisiana follows this channel. Since the material comes from both states, the BU feature is designed to benefit both states and comply with Coastal Zone Management Act regulations promulgated by each state.
2	FEIS section 2.5.3.2.2 (Gulf Shore BU Feature) contains an in-depth evaluation of the anticipated effects of regular shoreline nourishment at Texas and Louisiana points using maintenance material from Sabine Pass. The proposed beneficial use was evaluated and approved by the ICT. All of the material cannot be used in Texas for reasons presented in the USACE response to Comment 1.

Stokes, Janelle S SWG

From: Kim Prchal [nola4ne@hotmail.com]
Sent: Friday, January 29, 2010 11:04 AM
To: Stokes, Janelle S SWG
Subject: Sabine-Neches Waterway Project

Ms. Stokes, I have been reading the available on-line materials related to this project and I was wondering if the COE has a listing or map that identifies the locations and owners of the 42 pipelines that may have to relocated. I saw several references to the relocation issue but no where did I see those pipelines identified. Thank you for your assistance. 1

Kim Prchal

Kim

Hotmail: Trusted email with Microsoft's powerful SPAM protection. Sign up now.
<http://clk.atdmt.com/GBL/go/196390706/direct/01/>

Ms. Kim Prchal
Address unknown

RESPONSE TO COMMENTS

Comment No.	Response
1	A table of potentially affected pipelines which cross the SNWW was provided as requested.

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Telephone (610) 481-4911

Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229
(409) 766-3039

5 February 2010

Attn: Janelle Stokes

Ref.: Sabine-Neches Waterway Channel Improvement Project (SNWW CIP)

Dear Ms. Stokes:

This letter is in response to the invitation for written comments in the U.S. Army Corps of Engineers cover letters of 16 December 2009 and 18 December 2009. The cover letters accompanied a CD which contained several documents relating to the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). Air Products owns and operates and 10 inch diameter hydrogen pipeline that crosses the Neches River Channel (near 292+00). Based on the information contained in the provided documents, Air Products has the following comments:

1) In the Draft Feasibility Report for Sabine-Neches Waterway Channel Improvement Project Southeast Texas and Southwest Louisiana Volume I, Section VI: Description of Tentatively Recommended Plan, Deep-draft Utility Relocations and Removals, it is noted that the proposed channel improvements would require the relocation of 42 deep-draft utilities. **Air Products requests the list of the 42 deep-draft utilities designated for relocation.** 1

2) In the Draft Feasibility Report for Sabine-Neches Waterway Channel Improvement Project Southeast Texas and Southwest Louisiana Volume I, Appendix 1(Engineering Plats), cross sections of the Neches River at several stations are depicted on Drawing No. C-15. **Air Products requests a cross section for the location where the Air Products 10" diameter hydrogen pipeline crosses the Neches River (near 292+00). Additionally, Air Products requests the GPS coordinates of both the existing Neches River centerline and the proposed Neches River centerline at that location (near 292+00).** 2

3) In the Draft Environmental Impact Statement for Sabine-Neches Waterway Channel Improvement Project Southeast Texas and Southwest Louisiana, Volume IV, Appendix E: Clean Water Act section 404(b)(1) Evaluation, Section e: Description of the Proposed Discharge, Item (4): Time and Duration of Discharge, it is noted that contracts 6-12 would be constructed with hydraulic pipeline dredges. **Air Products requests further description of the hydraulic pipeline dredge process.** 3

Your feedback is greatly appreciated. The requested information will allow Air Products to gain a more complete understanding of the proposed Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). If you have any questions regarding these comments, please feel free to contact me via any of the provided means.

Thank you,

Daniel Stahl

Daniel Stahl
Air Products and Chemicals, Inc.
Project Engineering / Pipeline Maintenance
Phone: (610) 481-1707
Fax: (610) 706-6177
Email: stahld@airproducts.com

Mr. Daniel Stahl
Air Products and Chemicals, Inc.
Project Engineering / Pipeline Maintenance
Allentown, PA 18195-1501

RESPONSE TO COMMENTS

Comment No.	Response
1	A list of potentially affected pipelines was provided to the Texas Energy Coalition and individual pipeline companies during the DEIS public comment period.
2	FR, Appendix I (Drawing # C-15) shows cross sections on the Neches River Channel in the vicinity of the Air Products pipeline. More detailed information on channel design will be developed and provided to all pipeline and utility companies during the PED phase.
3	USACE met with pipeline owners at an information meeting on January 25, 2011. More information on the hydraulic pipeline dredging process was provided at that time, and additional information will be provided during the PED phase. This is the same process that is used currently to maintain the existing SNWW channels.

TARGA

Targa Midstream Services Limited Partnership
1000 Louisiana, Suite 4300
Houston, Texas 77002
713.584.1000

February 5, 2010

Ms. Janelle Stokes
Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77563-1229
e-mail: janelle.s.stokes@usace.army.mil

Re: Sabine-Neches Waterway Project and Study

Dear Ms. Stokes:

On behalf of Targa Midstream Services Limited Partnership ("Targa"), formerly known as Dynegy Midstream Services Limited Partnership, I respectfully request an extension of the comment period currently to end on February 10, 2010, as set forth in the draft Feasibility Report (DFR) and the draft Environmental Impact Statement (DEIS) for the Sabine-Neches Waterway Improvement Project ("Project") that was received by Targa at the end of last year. Targa is requesting a minimum of sixty (60) days from that date to no earlier than April 10, 2010, to respond with our comments. 1

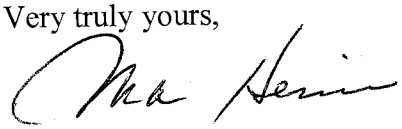
Prior to the release of the DFR, Targa was not provided any communication by the sponsor of the proposed Project regarding potential pipeline relocation issues. The DFR that was made available in December describes a large number of pipelines whose relocation or abandonment will be mandated by the Project. At least two of those pipelines are now owned by Targa. The limited time available since the release of the DFR has not provided Targa a sufficient opportunity for a complete analysis of the impact this significant undertaking will have on Targa. 2

It can certainly be said that the relocation of pipelines that transport essential energy commodities through Texas and Louisiana will not only be prohibitively expensive, it will also require years of advanced planning and coordination. Clearly, the relocation of pipelines creates operational and engineering burdens for an industry that is facing greater regulation and competition. The DFR and DEIS provide little discussion of the actual costs to a pipeline owner such as Targa, the impact of pipeline relocation will have on other pipelines that interconnect with Targa, the number of producers whose wells will be affected should a shut-in occur, the impact on the nation as a whole as a result of the disruption to the natural gas and petrochemical industry, or the potential unintended environmental consequences this Project could have on the coastal wetlands. 3

Therefore, Targa is respectfully requesting the comment period due date be no earlier than April 10, 2010.

We appreciate your consideration of this request.

Very truly yours,



Michael A. Heim
Executive Vice President and
Chief Operating Officer

Mr. Michael A. Heim
Executive Vice President and Chief Operating Officer
Targa Midstream Services Limited Partnership
1000 Louisiana, Suite 4300
Houston, TX 77002

RESPONSE TO COMMENTS

Comment No.	Response
1	The public comment period was extended an additional 30 days to March 12, 2010.
2	Owners of pipelines crossing the SNWW were contacted by USACE in 2002. USACE requested that they provide the most current "as-built" drawings and the location of SNWW crossings to enable an assessment of potential project impacts. The project's non-Federal sponsor has made numerous presentations to industry trade groups and community organizations throughout the study period, providing updates of the study and project descriptions. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. There will be sufficient time for pipeline companies to make necessary preparations after the project is approved.
3	FEIS Section 1.4.3 presents industry concerns about the costs of moving pipelines to accommodate a deeper channel. FEIS Section 2.4.1.12 presents a discussion of the allocation of pipeline relocation costs. Potential environmental impacts of pipeline relocation are assumed to be minimal. However, each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. However, relocations to place a pipeline deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the Department of Army permit.

RONALD L. WALKER
County Judge

Jefferson County Courthouse
P.O. Box 4025
Beaumont, TX 77704

Beaumont (409) 835-8466
Pt. Arthur (409) 727-2191 Ext. 8466
Facsimile (409) 839-2311

February 8, 2020

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, TX 77553-1229

In Re: Sabine – Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Please find our attached Comment Form relating to the Sabine – Neches Waterway Channel Improvement Project and a copy of the Resolution passed by the Jefferson County Commissioners' Court supporting same.

I would ask that you also extend our thanks and appreciation to Col. Weston and all of your staff for your efforts in formulating the project plans and then presenting same. I cannot overstate the importance of this proposed improvement project and our desire to see it proceed at the earliest date. With kindest regards, I remain,

Sincerely yours,

Ronald L. Walker, County Judge

Mr. Ronald L. Walker
County Judge
Jefferson County Courthouse
P.O. Box 4025
Beaumont, TX 77704

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comment.

US Army Corps of Engineers
Galveston District

COMMENT FORM

Sabine - Neches Waterway Channel Improvement Project
January 26, 2010
USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

✓ **I am a Public Official**

Name and Mailing Address (Optional):

Name FRED JACKSON
Address 1149 PEARL, 4TH FLOOR, BEAUMONT, TX 77701
Email Address fjackson@co.jefferson.tx.us
Phone (409) 835-8507

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

__ **Residential property owner or renter** __ **Business property owner or lessee**
__ **Other (Please explain)**
How did you learn about this meeting?
__ Newspaper ✓ Notice in the Mail ✓ Email
__ Other (Please explain)

COMMENTS: ENCLOSED PLEASE FIND ATTACHED RESOLUTION OF THE JEFFERSON COUNTY COMMISSIONERS' COURT AND COVER LETTER OF JUDGE RONALD L. WALKER SUPPORTING THIS PROJECT

1

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Resolution

STATE OF TEXAS	§	COMMISSIONERS' COURT
	§	
COUNTY OF JEFFERSON	§	OF JEFFERSON COUNTY, TEXAS

BE IT REMEMBERED at a meeting of Commissioners' Court of Jefferson County, Texas, held on the 8th day of February, 2010, on motion made by Everette D. Alfred, Commissioner of Precinct No. 4, and seconded by Mark L. Domingue, Commissioner of Precinct No. 2, the following Resolution was adopted:

Resolution Concerning the Sabine-Neches Waterway Channel Project

WHEREAS, the U.S. Army Corps of Engineers (USACE), in concert with Sabine-Neches Navigation District has proposed a project to widen and deepen the Sabine-Neches Waterway; and

WHEREAS, the USACE has prepared a study analyzing the feasibility and environmental impacts of proposed modifications to the portions of the Sabine-Neches Waterway that serves the ports of Beaumont and Port Arthur, Texas; and

WHEREAS, the USACE study clearly demonstrates the necessity for these improvements to provide a safe waterway that will accommodate the current needs of our ports and industry; and

WHEREAS, the proposed improvements reasonably accommodate environmental concerns; and

WHEREAS, the proposed improvements are clearly cost effective and will provide a positive economic benefit and enable our ports to facilitate the handling of vital military cargo; and

NOW THEREFORE, be it resolved that the Commissioners' Court of Jefferson County, Texas Urges all elected officials and citizens to support this project and the adoption of the plan for these improvements as proposed.

SIGNED this 8th day of February, 2010.

JUDGE RONALD WALKER
County Judge

COMMISSIONER EDDIE ARNOLD
Precinct No. 1

COMMISSIONER MICHAEL S. SINEGAL
Precinct No. 3

COMMISSIONER MARK L. DOMINGUE
Precinct No. 2

COMMISSIONER EVERETTE D. ALFRED
Precinct No. 4

Mr. Fred Jackson
Jefferson County Courthouse
1149 Pearl Street, 4th Floor
Beaumont, TX 77701

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comment.

Doré energy
CORPORATION
4823 Ihles Road • Lake Charles, LA. 70605

February 8, 2010

USACE – Galveston District
ATTN: Ms. Janelle Stokes
P. O. Box 1229
Galveston, TX 77553

Janelle.S.Stokes@usace.army.mil

RE: Draft Environmental Impact Statement for Sabine-Neches Waterway (SNWW) Channel Improvement Project Southeast Texas and Southwest Louisiana

Dear Ms. Stokes:

Doré Energy Corporation (DEC) strongly objects to the proposed improvements associated with the SNWW. DEC owns a large wetland tract in Cameron Parish, Louisiana, known locally as Cameron Meadows. The 18,611-acre tract is located north of Johnson's Bayou, south of, and adjacent to, the Sabine National Wildlife Refuge, and is within the SNWW Project and Study Area (study area). As a stakeholder, we respectfully submit the following comments and questions regarding the DEIS: 1

The project is economically driven by, and for, the State of Texas. It is understandable that Texas is willing to accept the projected detrimental environmental impacts as a tradeoff for the socioeconomic benefits that the improved ship channel is supposed to provide. Does the same hold true for the State of Louisiana? Would the DEIS authors identify, describe, and project all of the economic benefits, in terms of dollars, that the project would provide for Louisiana? 2

The DEIS states that the larger channel would cause greater tidal circulation and exchange, a minimal increase of water surface elevation, and marginally less fresh water retention. Increases in the tidal regime would have a very negative impact on the Cameron Meadows tract. The DEIS reports that 182,000 acres of intertidal marsh within the Louisiana portion of the study area would be indirectly, but adversely affected by "small increases in salinity levels". Projected impacts in Louisiana include a net loss of 1,499 Average Annual Habitat Units. Herein lies a major concern, these projections are based on salinity levels that are derived from modeling results, deemed likely by the DEIS preparers, and do not 3 4

represent high-end values. What if the modeling effort is too low in its estimates of increases in salinity levels resulting from the SNWW channel improvements? What would the losses to intertidal marsh in Louisiana, including losses on the Cameron Meadows tract, be as the result of the modeling values exceeding those projected in the DEIS?

Specifically, the DEIS acknowledges that the amount of upstream salinity transport may at times be underestimated by modeling results. The DEIS also acknowledges two uncertainties of salinity variations with ecological Wetland Value Assessment modeling: (1) model quality and (2) performance and model predictions. With this understanding and apparent acceptance of the possible factor of error, the DEIS suggests that the net change in salinity in Louisiana in the future with the project to be within the range of a low of 0.0 to a high of 1.8 parts per thousand (ppt). The Gammill et al. report, entitled *Hydrologic Investigation of the Louisiana Chenier Plain* (2002), cites modeling, identified channel improvement to 50-ft, would result in a 2 to 3 ppt increase in salinities in the Calcasieu-Sabine Basin. This difference in modeling results may seem small to the casual observer, but it is rather significant. While *Hydrologic Investigation of the Louisiana Chenier Plain* is cited elsewhere, this conflicting salinity data is conspicuously absent in the DEIS. Do the DEIS authors believe there is something wrong with this data? Why was it left out of the DEIS? Does not the combination of acknowledged modeling error and conflicting salinity modeling results indicate adverse indirect impacts, resulting from increased salinity levels, could/would affect more than the stated 182,000 acres of intertidal marsh identified in Louisiana's portion of the project area? Moreover, as marsh is lost, it is replaced with more tidal water which continues to exacerbate the conversion of marsh to water. Did the DEIS authors identify and evaluate this process and consider the likelihood that it would occur as the result of the SNWW improvements? 5

The best buy mitigation alternative is troublesome. A number of structures were identified in the DEIS, some of which would help protect Cameron Meadows from high saline waters, but were summarily dismissed as not being cost effective when compared to the need to provide marine organism access. Should not the long-term preservation of existing emergent marsh be more important than creating conditions (e.g., increasing cross-section of SNWW) that will increase the frequency, duration, and adverse effects of spikes of high saline water in sensitive wetland areas for the sake of maintaining study area marine organism access? 6

Louisianans have long recognized the importance of the state's coastal wetlands and have long supported the state's coastal restoration efforts. The State of Louisiana and United States of America have spent hundreds of millions of dollars on coastal restoration in the

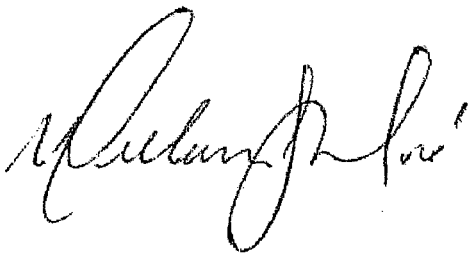
past quarter of a century from funding through Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) and other programs. In fact, a CWPPRA project, located on the Cameron Meadows tract, was nominated last month for 2011 CWPPRA funding. Is not the proposed SNWW project in direct conflict with federal and state restoration efforts in Louisiana? How can the SNWW be justified with its significant and bantered projection of unmitigated marsh impacts? 7

In summary, the DEIS fails to provide: (1) the project's economic value to the State of Louisiana; (2) resolution to conflicting modeling results and how much marsh could/would be lost or adversely affected by the project due to higher salinity levels than projected; (3) full mitigation plan or compensation for projected losses of intertidal marsh in most of the Louisiana portion of the study area including Cameron Meadows; and (4) resolution to the conflict between navigation needs in Texas, the project's acknowledged detrimental impacts to Louisiana marshes, and ongoing publicly supported and funded coastal restoration efforts in Louisiana. 8 9

DEC is not against economic prosperity in and for the State of Texas. We just do not want to lose our land in the process.

Thank you for the opportunity to make these comments.

Sincerely yours,



William Doré
President

cc: Council on Environmental Quality
Louisiana Governor Bobby Jindal
U. S. Senator Mary Landrieu
U. S. Senator David Vitter
U. S. Congressman Charles Boustany
Cameron Parish Police Jury

Mr. William Doré
President
Doré Energy Corp.
4823 Ihles Road
Lake Charles, LA 70605

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for your comment.
2	The proposed SNWW CIP is a Federal Civil Works project, and as such, it would provide benefits to the Nation, not just one state. The economic analysis presented in FR section V.F establishes that there would be a net economic benefit to the United States from the proposed project. Direct and indirect economic benefits of the proposed deepening will accrue to all users of the SNWW, including the energy industries, and to the regional economy.
3	It appears that Cameron Meadows is located within LA-9, the East Johnsons Bayou hydro-unit. FEIS Chapter 4 fully evaluates potential impacts from the SNWW CIP to this unit. As noted in FEIS Section 4.6.2, the proposed project would result in a minimal increase in water surface elevation (averaging less than an inch), a slight increase the amount of tidal exchange, and a slight increase in the conveyance of inflows to the Gulf. All of these effects are minimal.
4	FEIS, Appendix C, Section 9.4 presents a sensitivity analysis of potential salinity impacts at the 95 percent confidence limit. Without the project, the hydrodynamic salinity (HS) and Wetland Value Assessment (WVA) models estimate that 4.0 percent of the marsh in the East Johnsons hydro-unit will be lost over 50 years. Potential land loss impacts from the proposed SNWW CIP range from 0 to 0.4 percent more than without the project. Proposed mitigation replaces estimated land loss with more than four times the amount of marsh projected to be lost, providing more than adequate mitigation for the full range of possible impacts.
5	USACE evaluated the modeling reported by Gammil et al. (2002) and decided not to use this model because of specific technical issues and non-coverage of the Texas portion of the study area. Hydrodynamic-salinity effects of channel deepening were modeled using the TABS-MDS code of ERDC-WES to compute hydrodynamics and salinity transport. This model has been used extensively over the last two decades in a variety of field investigations with excellent results. It has also has been certified for use by the USACE model certification program. The technical adequacy of the application of this model to the proposed project has been sustained by Agency Technical Review (ATR) and Independent External Peer Review (IEPR). The potential effect of higher salinity on land loss was evaluated by using the HS and WVA ecological model to estimate land loss due to the project.
6	USACE and the ICT made extensive efforts to identify effective mitigation measures that could minimize or eliminate the projected increase in salinity. The results of this effort are presented in FEIS Section 5.4.1.1. HS modeling and the WVA model were utilized to evaluate the effectiveness of salinity control structures. As described in FEIS Section 3.1.3, the WVA model was developed by a working group of state and federal agencies in Louisiana, and it is used extensively in Louisiana to prioritize Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). A projects for authorization. The value of marsh and open water habitats are both considered in this community model.
7	The relationship of the proposed SNWW CIP project to Louisiana coastal restoration and protection programs are described in FEIS Sections 7.26 through 7.30. The proposed project does not conflict with any of these plans. Impacts of the proposed project would be fully compensated by the Louisiana marsh mitigation measures.
8	Please refer to responses 1-7 above.
9	Thank you for your comment.

Stokes, Janelle S SWG

From: LEAten@aol.com
Sent: Tuesday, February 09, 2010 10:43 AM
To: Stokes, Janelle S SWG
Subject: Note to Jan Stokes regarding the draft Sabine-Neches Waterway EIS:

Jan:

While many parts of my 1983 book (Indians of the Upper Texas Coast) are still relevant, the section on the Sabine Lake Area used in the draft EIS is quite out of date. And while the 2002 Aten and Bollich study (Late Holocene archeology of the Taylor Bayou Drainage Basin) is mentioned, none of its conclusions and recommendations have found their way into the summary of existing knowledge or the formulation of problems for a mitigation program in the draft EIS summary in Vol. II. Also, there is a new Aten and Bollich monograph now in press for publication in 2010 by TARL (this was mentioned in the December 2009 Friends of TARL Newsletter (pg. 14) on the subject of early ceramic sites in the Sabine Lake area. You may recall I sent an earlier version of this to you in 2007. 1

In addition to the sources (mostly surveys) mentioned in the draft EIS volume II section 3.13.1.1, I would recommend the following be reviewed and included:

Campbell, T. N., 1947, The Archaeology of the Texas Coast and its Relation to that of Mexico and the Lower Mississippi Valley. Unpublished Ph. D. dissertation, Harvard University. An early overall assessment that is still valuable in defining issues.

Stright, Melanie J., Eileen M. Lear, and James F. Bennett, 1999, Spatial Data Analysis of Artifacts Redeposited by Coastl Erosion: A Case Study of McFaddin Beach, Texas. Minerals Management Service, OCS Study MMS 99-0068, 2 volumes. A detailed study of mostly Paleo-Indian, Early and Middle Archaic lithic technology based, as you know, on the large collection from McFaddin Beach in the Sabine Area.

Aten and Bollich, 2002, Late Holocene Settlement in the Taylor Bayou Drainage Basin: Test Excavations at the Gaulding Site (41JF27), Jefferson County, Texas. Texas Archeological Society Special Publication No. 4, and Texas Archaeological Research Laboratory Studies in Archeology 40. Although this study is mentioned in the draft EIS, its importance in defining research issues in the region doesn't seem to be appreciated. This monograph lays out the need for and approach to geoarcheology and culture history mainly for the Late Archaic in the project area.

Aten and Bollich, 2010, "Early Ceramic Sites of the Sabine Lake Area, Coastal Texas and Louisiana." This monograph is finished and is being published by Texas Archeological Research Lab (UT-Austin) this year. It begins more or less where the 2002 Taylor Bayou study ends; it continues identifying Sabine Area study needs from the Late Archaic into ceramics using cultures. If a copy is needed sooner than sometime this year I'm sure you could get a photocopy from Dr. Creel at TARL.

Aten, 2004, Archeological Reconnaissance at Black Hill Mound (41JF24), Jefferson County, Texas. Research in fulfillment of Texas Antiquities Committee Archeology Permit No. 2902. This report is being incorporated in the Aten and Bollich 2010 now in press. But if you need something sooner you should be able to get a copy of this report from the Texas Historical Commission. The Black Hill site appears to include a little Middle Archaic and a lot of Early Ceramic. It also deals with other geoarcheology issues not included in the 2002 Taylor Bayou monograph.

Data on the Late Ceramic and Historic periods still are very scarce and new studies "from scratch" are needed for them. 2

Taken together these studies lay a wider basis for formulating new research for Paleo-Indian through Early Ceramic in the Sabine than is indicated in the draft EIS. Although data and concepts for the Late Ceramic through Historic periods are still weak, the basic formulations for the earlier periods are now coming into focus. Thirty years ago I could say there was little known of Sabine prehistory. But not now. Thanks for giving me the opportunity to comment.

Jan, please call on me, and I am sure Charlie Bollich also, if we can be of further assistance on the SNWW project.

Best regarads,

Larry

Lawrence E. Aten

2845 Arizona Terrace NW
Washington, DC 20016
(202) 363-4491
leaten@aol.com

Mr. Lawrence E. Aten
2845 Arizona Terrace NW
Washington, DC 20016

RESPONSE TO COMMENTS

Comment No.	Response
1	USACE appreciates the information and references provided, and will utilize them in the analysis of data from terrestrial archeological studies and the formulation of a mitigation program, if necessary, that will be conducted during PED pursuant to the Historic Properties Programmatic Agreement (FEIS Appendix H).
2	This information will be used in determining the significance of potential site impacts.

TEXAS ENERGY COALITION

6207 Inwood Drive
Houston, TX 77057
713-622-7388 (ph)

Written Comments by Texas Energy Coalition Regarding
Proposed Sabine Neches Waterway Channel Improvement Project DFR

February 9, 2010

U. S. Army Corps of Engineers
Galveston District
Attn: Ms. Janelle Stokes [janelle.s.stokes@usace.army.mil]
P. O. Box 1229
Galveston, Texas 77553-1229

Re: Request for extension of time to comment and interim comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

We write on behalf of the Texas Energy Coalition, a group of pipeline transmission companies that collaborate on issues of common interest. By this letter, the Coalition (1) requests an enlargement of time in which to comment upon the DEIS and DFR and (2) offers certain interim comments regarding the DEIS and DFR.

In late December 2009, we received your correspondence inviting comments on the "Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation" (referenced herein collectively as "DEIS"). We understand that as of yesterday, the deadline for comments on the DEIS has been extended from February 10, 2010, to March 12, 2010. Although your original letter and announcement were silent as to whether comments also were invited on the Draft Feasibility Report for the proposed Sabine Neches Waterway Channel Improvement Project (referenced herein as "DFR"), representatives of the Corps of Engineers subsequently advised that comments also were being accepted on the DFR and that the deadline for comments on the DFR was the same as for comments on the DEIS. We assume this deadline also will be extended to March 12, 2010, but would appreciate written confirmation of that decision. 1

The DFR and DEIS were made available to the public for the first time over the December holidays, at a time when many of our members' employees were on vacation. The practical and easily foreseeable effect of this timing, of course, was to delay the commencement of the review of the five volumes that comprise the DFR and DEIS. Furthermore, although the DFR and DEIS indicate that the proposed project will require a large number of pipeline relocations, there does not appear to have been any prior effort to coordinate the project's planning with pipeline owners and operators. This is the case even though it is common knowledge that pipelines lace the area impacted by the proposed project – a fact that is reflected in the DFR and DEIS as well (*see, e.g.,* DFR at pp. II-3, II-10, V-4-5, V-77, and VI-28). 2 3

The replacement of pipelines that transport essential commodities such as natural gas, natural gas liquids, crude petroleum and refined petroleum products is not only costly, it also requires years of advance planning and coordination, and it creates significant operational and engineering burdens for an industry that has strategic significance for the American economy. Particularly in congested areas such as the Sabine Neches Waterway, where there are multiple pipelines owned by multiple companies, the relocation of a significant number of pipelines must be preceded by a comprehensive and coordinated planning process regarding the relocation. Yet the DFR and DEIS provide little detail about the proposed project's impact on pipeline operations, which pipelines will need to be relocated, where those pipelines are located (other than the most general of descriptions), or how costs were estimated or projected for pipeline relocations. For example, the engineering narrative (located in chapter 13 of the DFR Appendix) indicates that "relocated lines were assumed to be directionally drilled, and bundled when possible," yet no detail is provided that would inform a reader which pipelines were assumed to be bundled, nor were other details provided that would permit our members to understand the logic – let alone the accuracy – of the Corps' feasibility and cost assumptions. There also appears to have been no consideration of the lead time requirements and additional expense that will be required for planning and coordination in the instance of multiple simultaneous pipeline relocations. 4

Besides relocations of existing pipelines, it also appears that the project may impact pipeline operations in other ways. Based upon one of the few references to particular pipelines in the entire DFR and DEIS (*see* Figure VII-3 of DFR), it appears that Placement Areas (both on-shore and off-shore) for the proposed project may impact a number of existing pipelines, appurtenances and their operations, yet there is no indication of whether those pipelines would be relocated or whether it is simply assumed that there would be no problems if additional overburden were to be added over those existing pipelines. For similar reasons, we need a better understanding of Beneficial Use Features. In other instances, it is unclear whether pipelines that operate near the Sabine Neches Waterway will be impacted by the project or whether the proposed project will require their relocation for other reasons. 5 6

On multiple occasions prior to the release of the DFR and DEIS, we have requested information from the Corps of Engineers (including through a series of requests under the Freedom of Information Act (FOIA) dating back to 2007) regarding the potential impact on pipeline operations of any project to deepen or widen the Sabine Neches Waterway. The Corps responded to each request by refusing to provide a single responsive document – that is, not until its production of a hard copy of the DFR and DEIS on December 24, 2009, in response to the Coalition's most recent FOIA request. Since then, the only document that the Corps has made available is a single spreadsheet with what appears to be a working list of pipelines that may be impacted by the project. This spreadsheet, which was not made available to the Coalition until January 12, 2010, has never previously been produced, even though it is dated September 30, 2005, and is clearly responsive to the Coalition's multiple FOIA requests to the Corps going back to 2007. 7

Under the circumstances, it is unrealistic to expect that the pipeline companies could provide any meaningful comments on the multi-volume DFR or DEIS by the original deadline of February 10, 2010, or even by the extended deadline of March 12, 2010. A more realistic comment period would allow at least 120 days from the date of issue (December 24, 2009), and we therefore respectfully request that the comment period be extended to at least April 26, 2010. 8

In making this request, we assume that the Corps will promptly and definitively identify the pipelines that will be impacted by the project, the owner of each such pipeline, and sufficient information to understand and respond to the Corps' estimate of the costs for removing or relocating each such pipeline. We also assume the Corps will promptly provide us with whatever additional documents are needed to understand the proposed project's impact on pipeline operations, including a projected timeline for when the relocations may actually be needed. Our members also believe that it is important for the Corps to meet with the Coalition and pipeline company representatives as soon as possible, in order to facilitate the information exchange. 9

Based upon the DFR, this project, as proposed, would be a deep-draft harbor project for cost sharing purposes under the Water Resources and Development Act of 1986. Under this law, half of the pipeline relocation costs for a deep-draft harbor project must be borne by the pipeline owner and the other half by the local sponsor of the project. Please confirm that this cost-sharing requirement will be part of any Chief's Report or other report or recommendation the Corps may make regarding the project. 10

Please advise the undersigned as soon as possible whether the comment period for the DFR and the DEIS will be extended, as requested above. We also ask that you contact Denis Calabrese (713-622-7388) or David Corban (713-651-5251) to coordinate the meeting requested above.

Very truly yours,

Denis Calabrese
Spokesperson

Mr. Denis Calabrese
Texas Energy Coalition
6207 Inwood Drive
Houston, TX 77057

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period has been extended an additional 30 days to March 12, 2010. This information was placed on the USACE website at http://www.swg.usace.army.mil/pao/Docs/ExtensionofPublicCommentPeriodtoMarch12.pdf on February 8, 2010.
2	The release of the Draft FR and DEIS was established based on the schedule requirements needed to complete a Chief of Engineers report in Fiscal Year 2010.
3	Owners of pipelines crossing the SNWW were contacted by USACE in 2002. USACE requested that they provide the most current "as-built" drawings and the location of SNWW crossings to enable our assessment of potential project impacts. The project's non-Federal sponsor has made numerous presentations to industry trade groups and community organizations throughout the study period, providing updates of the study and project descriptions.
4	A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines was developed for the purpose of feasibility level planning, and should not be considered definitive. This list will be refined based on information submitted to USACE during the public comment period and subsequent to the USACE/Pipeline Owner information meeting on January 25, 2011. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time.
5	As noted, pipelines cross beneath existing PAs that are proposed for use with the SNWW CIP. USACE will coordinate with pipeline owners during PED and Construction phases to avoid impacts to these pipelines.
6	FEIS Section 2.4.1.12 discusses the potential for pipelines to be affected by BU and marsh mitigation areas. It is recognized that additional pipeline searches and coordination with pipeline owners will be required prior to construction. USACE will coordinate with pipeline owners during PED and Construction phases to avoid impacts to these pipelines.
7	As noted, a list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period.
8	The comment period was extended an additional 30 days to March 12, 2010.
9	The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor. A preliminary construction schedule has been developed (Engineering Appendix Addendum 2009, chapter 14.0 Revised Schedules for Design and Construction) and is available upon request. However, the actual time table for project construction is uncertain at this time because it is dependent upon ASA and OMB approval of the Chief's Report, Congressional authorization and Congressional appropriation of funds. There will be sufficient time for pipeline companies to make necessary preparations after the project is approved. As requested, USACE met with pipeline owners at an information meeting on January 25, 2011.
10	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.

Stokes, Janelle S SWG

From: Texas Pipeline Association [texaspipelineassociation@yahoo.com]
Sent: Wednesday, February 10, 2010 2:34 PM
To: Stokes, Janelle S SWG
Subject: RE: Sabine-Neches Waterway Channel Improvement Project comments

Ms. Stokes:

We hope that our comments will be considered in their entirety and that it is noted we are requesting the comment period be extended 60 days, not 30 days, past the original February 10, 2010 date for reasons stated in the comments. 1

Thank you.

Angie Adams
Assistant to the Executive Director
Texas Pipeline Association
512/478-2871

--- On Wed, 2/10/10, Stokes, Janelle S SWG <janelle.s.stokes@usace.army.mil> wrote:

From: Stokes, Janelle S SWG <janelle.s.stokes@usace.army.mil>
Subject: RE: Sabine-Neches Waterway Channel Improvement Project comments
To: "Texas Pipeline Association" <texaspipelineassociation@yahoo.com>
Date: Wednesday, February 10, 2010, 1:09 PM

Ms. Adams,

The Galveston District, Corps of Engineers, is extending the CEQ public comment period for the Sabine-Neches Waterway Channel Improvement Project, and Proposed Ocean Dredged Material Disposal Site Designation, Southeast Texas and Southwest Louisiana. The comment period was originally set to end on 2/10/2010, but it has been extended 30 days to 3/12/2010.

Janelle Stokes
Regional Environmental Specialist
U.S. Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77573
409.766.3039
janelle.s.stokes@usace.army.mil <http://us.mc503.mail.yahoo.com/mc/compose?to=janelle.s.stokes@usace.army.mil>

-----Original Message-----
From: Texas Pipeline Association [mailto:texaspipelineassociation@yahoo.com <http://us.mc503.mail.yahoo.com/mc/compose?to=texaspipelineassociation@yahoo.com>]
Sent: Wednesday, February 10, 2010 9:41 AM
To: Stokes, Janelle S SWG
Subject: Sabine-Neches Waterway Channel Improvement Project comments

Dear Ms. Stokes:

Attached are the comments of the Texas Pipeline Association regarding the Sabine-Neches Waterway Channel Improvement Project. We appreciate the

opportunity to submit comments.

Please contact us if you have any questions or need further information.

Thank you.

Angie Adams
Assistant to the Executive Director
Texas Pipeline Association
512/478-2871

Ms. Angie Adams
Texas Pipeline Association
604 West 14th Street
Austin, TX 78701

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period was extended an additional 30 days to March 12, 2010.

Texas Pipeline Association

Patrick J. Nugent
Executive Director

February 10, 2010

Ms. Janell Stokes
Department of the Army
Galveston District
Corps of Engineers
P.O. Box 1229
Galveston, Texas 77563-1229
e-mail: janelle.s.stokes@usace.army.mil

Re: Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

The Texas Pipeline Association (TPA) is an organization of thirty-four member companies which gather, process, treat, transport, deliver and store natural gas and natural gas products to marketers, commercial and industrial end users and residential consumers in Texas and the United States.

The U.S. Corps of Engineers (Corps) has released the Draft Feasibility Report (DFR) and the Draft Environmental Impact Statement (DEIS) for the above referenced project and announced that it will accept written comments postmarked by February 10, 2010. The Texas Pipeline Association requests that the comment period be extended for an additional 60 days for the following reasons: 1

1. The material which must be reviewed is voluminous. The DEIS is over 1500 pages and the DFR is over 700 pages. 2

2. There are a number of issues which the TPA believes will require additional data to determine the magnitude of the impact of the project. It appears that there are approximately 50 pipelines which must be relocated or removed to accommodate the project. The process of relocating or removing pipelines is both expensive and complicated. The TPA believes the actual costs of the relocation and removal of numerous pipelines will turn out to be substantially higher than currently anticipated. 3

3. It is clear that much of the pipeline capacity that delivers oil, gas and products between the Gulf Coast of Texas and the Gulf Coast of Louisiana will be out of service for a 4

604 West 14th Street, Austin, Texas 78701
phone: (512) 478-2871 fax: (512) 473-8476 Email: texaspipelineassociation@yahoo.com

period of time to accommodate the project. It has not yet been determined how much of that capacity will not be put back into service due to the cost of relocation or removal. Moreover, there are safety and environmental risks of such operations which must be taken into consideration.

4. Neither the Corps nor the energy industry yet knows how much oil and gas production will have to be shut in or the period of time we can expect production to be interrupted by the relocation and removal projects. 5

5. Neither the Corps nor the public yet knows how much of the Gulf Coast's gasoline and diesel fuel supplies will be interrupted or for what time period that disruption will last. It also appears that delivery of products such as ethylene, butadiene, oxygen and ammonia will be interrupted to those industries which are major employers on the Gulf Coast. 6

6. We would note that the State of Louisiana, through its Department of Natural Resources, Office of Coastal Management (DNR) has stated its concerns about whether the deepening will increase damage done by storm surges as well as its concerns about many of the same issues raised by the TPA. The DNR has asked for an additional 90 days to evaluate the impact of the project. 7

Given the extensive nature of the project, the amount of existing data to be reviewed in the DFR and the DREIS, and especially the amount of data which needs to be collected regarding the impact on both the energy industry and its customers, the TPA asks that the comment period be extended at least 60 days so that a useful analysis of the project's impact can be done.

If you have any questions, please do not hesitate to contact me at texaspipelineassociation@yahoo.com or 512/478-2871 or 604 West 14 Street, Austin, Texas 78701.

Sincerely,

Patrick J. Nugent

Patrick J. Nugent
Executive Director

Mr. Patrick J. Nugent
Executive Director
Texas Pipeline Association
604 West 14th Street
Austin, TX 78701

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period was extended an additional 30 days to March 12, 2010.
2	The length of these documents is commensurate with the size and complexity of the proposed project.
3	The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor. A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines should not be considered definitive. This list will be refined based on information submitted to USACE during the public comment period and subsequent to the USACE/Pipeline Owner information meeting on January 25, 2011. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time.
4	Channel deepening will be accomplished with numerous dredging contracts over many years, and associated pipeline relocations will similarly occur in increments, so no large disruptions in pipeline service are anticipated. USACE will ensure that channel construction contractors work with pipeline companies as needed to accommodate all parties for a safe and effective working plan.
5	See USACE response to Comment 4.
6	See USACE response to Comment 4.
7	A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010). The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5. The comment period was extended an additional 30 days to March 12, 2010.

Stokes, Janelle S SWG

From: Fontenot, Chuck [Fontenot@pbworld.com]
Sent: Thursday, March 11, 2010 12:49 PM
To: Stokes, Janelle S SWG
Cc: Praesel, Jr, Arthur Gus; Mayorga, Masao; Hall, John; Reichwein, Tim
Subject: Draft Environmental Impact for Sabine Neches Waterway

Attachments: PBESS Neches Pipeline Overlay.pdf; 1127 Sasol 6 inch Neches-1 Model (1).pdf; 1146 Entergy 24 inch Neches-1 Model (1).pdf; PBESS Neches Crossings.pdf; TECHNICAL CONSIDERATIONS FOR CROSSINGS RIVER.pdf

PBESS Neches Pipeline Overlay.... | 1127 Sasol 6 inch Neches-1 Mod... | 1146 Entergy 24 inch Neches-1 ... | PBESS Neches Crossings.pdf | TECHNICAL ISIDERATIONS FOR

Ms. Stokes,

I am with PB Energy Storage Services. I spoke with you recently on the phone in relation to the Draft Environmental Impact Study on the Sabine Neches Waterway. I am submitting a short technical evaluation on the impact of the project to PBESS's Pipeline Operation. We have looked at the deepening and widening of the channel as well as the location of the spoil areas in relation to our pipelines. Depending on where the centerline of the channel will be we do not see a big impact on our systems. We would like to point out that the spoil areas are directly over portions of both pipelines. As we do not know the finished depth of the spoil in these areas we are somewhat concerned. 1
I have attached a letter as well as drawing that show the location of the pipelines, most recent profiles as well as Google Photos with GPS Coordinates. I also super imposed the drawing from your impact study with our pipelines.

Please feel free to contact me if you require more information or if we can help in any way.

Thanks

Chuck Fontenot

Operations Manager

PB Energy Storage Services, Inc.

A Parsons Brinckerhoff Company

16285 Park Ten Place, Suite 400, Houston, TX 77084 (New)

6950 Sulphur Drive, Beaumont, TX 77705

(409) 839-4602 (Beaumont Office)

(281) 589-5845 (Houston Office)

(281) 923-0317 Mobile

(409) 839-0510 Fax

E-mail Address: fontenot@pbworld.com <blocked::mailto:fontenot@pbworld.com>

PBESS Website : http://www.pbenergy.com <http://www.pbenergy.com/>

Mr. Chuck Fontenot
Operations Manager
PB Energy Storage Services, Inc.
16285 Park Ten Place, Suite 400
Houston, TX 77084

RESPONSE TO COMMENTS

Comment No.	Response
1	The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and your concerns will be addressed at that time.

PB Energy Storage Services, Inc
ENGINEERING – CONSTRUCTION – OPERATIONS – MAINTENANCE

16285 Park Ten Place, 4th Floor
Houston, Texas 77084

Telephone (281) 496-5590
Fax (281) 589-5865

Department of the ARMY
Galveston District, Corps of Engineers
P.O. BOX 1229
Galveston, TX 77553
Subject: PB ESS Technical Requirements for our Pipelines due to Sabine Neches, Waterway Channel Improvement Project
Date: February 2nd, 2010

To: Ms Janelle Stokes

PB Energy Storage Services is responsible for the operation of two pipelines crossing under the natural bottom of the Neches River as per attached drawings and pictures. One pipeline is 24" OD natural gas pipeline and the other is 6.625" OD ethane pipeline. The 24" OD Pipeline is required for the Gas Supply to Entergy's Bridge City Power Plant. 1
The 6.625" OD pipeline is the ethane feedstock pipeline to Sasol NA's Westlake Power Plant. While we realize that this release is related to environmental impact particularly on the spoil areas, we wanted to make sure that the location of our pipelines related to both the spoil areas and river excavation were considered as soon as possible.

PB has reviewed the documents from Department of the ARMY, and applied standards and applicable specifications including DOT 195, DOT 192, ASME B31.4 (Liquids) and 2
ASME B31.8 (Gas), to determinate the minimum necessary requirements for the proposed project.

The primary guidelines for this project to be considered are: 3

- All buried pipelines for river and stream crossings shall be installed below the normal level of bottom of river with a minimum cover not less than 48 inches, PBESS considers this to be adequate under the most perfect conditions of water movement, this depth should be increased as per calculations based on real conditions.

- Crossings of rivers, streams, lakes, and inland bodies of water are individual problems, and the designer shall investigate composition of bottom, variation in banks, velocity of water, scouring, and special seasonal problems. Where required,

detailed plans and specifications shall be prepared taking into account these and any special considerations or limitations imposed by the regulatory body involved.

- Underwater crossings modifications as this case, plans and specifications shall describe the position of the line, showing relationship of the pipeline to the natural bottom and the depth below mean low water level when applicable. To meet the conditions set out here, heavier wall thickness could be necessary. Approach and position of the line in the banks is important, as is the position of the line across the bottom. Special consideration shall be given to depth of cover and other means of protecting the pipeline in the surf zone. Special consideration shall be given to protective coating and the use of concrete jacketing or the application of river weights.

- Complete inspection shall be provided and all precautions shall be taken during construction to limit stress below the level that would produce buckling or collapse due to out-of-roundness of the complete pipeline.

- Plans and specifications shall describe alignment of the pipeline, depth below mean water level, and depth below bottom if ditched. Special considerations shall be given to use of weight coating(s), anchors, or other means of maintaining position of the pipeline under anticipated conditions of buoyancy and water motion. Complete constructions inspection and monitoring shall be provided. Precautions shall be taken during construction to limit stress below the level that would produce buckling or collapse due to out-of-roundness of the pipeline.

- Where pipelines and mains cross areas that are normally under water or subject to flooding (i.e., lakes, bays, or swamps), sufficient weight or anchorage shall be applied to the line to prevent flotation.

- Because submarine crossings may be subject to washouts due to the natural hazards of changes in the waterway bed, water velocities, deepening of the channel, or changing of the channel location in the waterway, design considerations shall be given to protecting the pipeline or main at such crossings. The depth of the line, location of the bends installed in the banks, wall thickness of the pipe, and the weighting of the line shall be selected on the characteristics of the waterway.

After analysis, PB ESS requirements:

- PB ESS has not in this case studied the soil conditions and water velocity for these crossings, due to the unpredictable conditions for this river, we want to keep the minimum depth as per drawings, which is 14.5’ at TOP for both pipelines, unless than proper studies show than a shallower depth would not be a risk.

- If it becomes necessary that a minimum depth would be less than 14.5’ and in the case that the pipeline could have the possibility of future exposure, the guidelines suggested above shall be considered and approved by PB ESS.

- If the width or depth of the river excavation makes the replacement of the pipeline necessary, then a new section of pipeline would be necessary and mainline block valves should be installed on the upstream side of major river crossings. Either a block or check valve shall be installed on the downstream side of major river crossing.

- PB ESS will require that a representative of our company be on-site at all times, during all excavation activities in the vicinity of these pipelines.

- Another issue that we have is regarding to the "Dredged Material Placement Areas", because these are exactly above both pipelines. PB ESS will need maintenance access to the pipelines. If the depth of these spoil areas is significant then we may have issues with spoil placement. Attached to this document are pictures showing the approximate location of the pipelines. We are supplying the GPS coordinates in the Vicinity of the river. If possible we would like to avoid these areas above the pipelines. 5

PB ESS is would be happy to review all information related to these pipelines with your engineers. We look forward to working with the Corp of Engineers in order to support this operation, with as little impact as possible to existing structures. 6

All technical questions should be directed to Mr. Masao Mayorga (mayorgam@pbworld.com) or Mr. Chuck Fontenot (fontenot@pbworld.com)

Sincerely,

Masao Mayorga
Principal Pipeline Engineer
PB Energy Storage Services, Inc.
A Parsons Brinckerhoff Company
16285 Park Ten Place Floor 4th, Houston, TX 77084
(281) 589-5983 (Houston Office)
(713) 817-3045 Mobile
(281) 589-5865 Fax
E-mail Address: mayorgam@pbworld.com
PBES Website : http://www.pbenergy.com
PB Website : http://www.pbworld.com

Mr. Masao Mayorga
Principal Pipeline Engineer
PB Energy Storage Services, Inc.
16285 Park Ten Place Floor 4th
Houston, TX 77084

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for providing this information.
2	Comment noted.
3	The USACE Galveston District guidance for DEEP DRAFT CHANNELS DISTRICT POLICIES AND PRACTICES can be found at http://www.swg.usace.army.mil/items/hgnc/#MEMO. The "primary guidelines" refer to the "normal level of bottom of river", "natural bottom" and this is not equivalent to the authorized depth of the federal channel.
4	Please refer to USACE response to Comment 3.
5	Maintenance access will be provided upon request. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and your concerns will be addressed at that time.
6	USACE met with pipeline owners at an information meeting on January 25, 2011. More information on project features that could affect pipelines will be provided as detailed plans are developed during PED and Construction phases.

Coastal Environments , Incorporated

Services:

Applied Science & Planning

Environmental Restoration & Monitoring

Cultural Resources Management

Geographic Information Systems

Litigation Support

Website:

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302 Saint John Street
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mgagliano@coastalenv.com

February 22, 2010

USACE – Galveston District
ATTN: Ms. Janelle Stokes
P. O. Box 1229
Galveston, TX 77553

RE: Draft Environmental Impact Statement (DEIS) for Sabine-Neches Waterway Channel Improvement Project Southeast Texas and Southwest Louisiana (SNWW)

Dear Ms. Stokes:

This letter of objection is written on behalf of Doré Energy Corporation (DEC), a landowner in Cameron Parish, LA. DEC owns an 18,611-ac tract, known as Cameron Meadows, which is comprised of coastal marsh that abuts the south side of the Sabine National Wildlife Refuge.

As we understand, the existing channel SNWW is currently 40-ft deep and the project calls for it to be extended into the gulf, widened, and deepened to 48 ft. A projected 98 M cu yds of material would be dredged during project construction with a maintenance requirement of 650 M cu yds that would be dredged over the following 50 years. The cited need for the project is attributed to current SNWW depth/channel configurations and ship congestion that impede shipments of crude oil in larger ships to existing oil refineries and petrochemical related facilities.

We believe that the SNWW is very comparable to the Mississippi River Gulf Outlet (MRGO), located in St. Bernard Parish, Louisiana. The MRGO has now been de-authorized by the U. S. Congress and a rock dam placed across the channel near its seaward end and a surge structure across its upper end at a cost in excess of one billion dollars. A Congressional authorized study is currently underway by the USACE, New Orleans District, to develop a plan for mitigation of environmental damages resulting from the MRGO. Estimates for implementing the environmental plan are between 1.5 and 2B dollars. Have similar costs been factored into the SNWW? 1

A report, prepared by the USACE, New Orleans District, entitled *Habitat Impacts of the Construction of the MRGO* (December, 1999), states that the 76-mile, waterway was dredged to its authorized 500-ft width and 35-ft depth by 1965. The USACE, New Orleans District, state on pg 1 of the report that "(c)onstruction of the MRGO and subsequent erosion has caused extensive loss of land in St. Bernard Parish". Authors of the report calculated that thousands of wetland acres were lost as the result of the MRGO not only in St. Bernard Parish, but in *all* of the parishes that surround Lake Pontchartrain. Did the USACE, Galveston District, review and evaluate *Habitat Impacts of the Construction of the MRGO*? Does the USACE, Galveston District, know that navigation channels are a primary cause for coastal wetland loss and degradation in Louisiana? If so, why was a discussion on same not included in the DEIS? 2

The numbers of movements of ships in the DEIS are only provided by the SNWW percentage of nationwide totals. What is the numerical summary of the number of existing and projected shipments with and without the project? What is the numerical breakdown on types of vessels (including lengths, widths, drafts) documented as historically using the SNWW historically as well as the present time? What is the current frequency of marine movements by type of vessel? Where is the data that documents delays, accidents, near-misses, etc.? Where is data that identifies and documents specific areas of congestion along the SNWW that could be possibly "fixed' as a reasonable partial alternative to the preferred action? The need to bring crude oil shipments to refineries with 45-ft draft, vessels should be justified by a realistic and defendable projection of movements. 3

Several alternatives included the use of, or similarities to, the Louisiana Offshore Oil Port. the DEIS concludes that local interests along the existing SNWW do not want to invest their own resources into a solution that would not adversely affect Louisiana's wetland resources. Business interests would rather have the channel improved at the public and Louisiana's expense. Why would the USACE, Galveston District, not take a more in-depth look at the alternatives reviewed in the DEIS and attempt to identify new alternatives that would not adversely affect Louisiana? For instance, an authority or consortium of users could be formed that could investigate the feasibility of developing a partnered public and private funded offshore oil port or lightering system for large tankers. 4

The State of Texas would obviously benefit from the SNWW project; but how would the State of Louisiana benefit? 5

The DEIS states that the deepening and widening of the SNWW channel will increase the amplitude and salinities of incoming tides, shorten durations of freshwater retention, and increase overall water levels in the DEIS study area. These changes in environmental conditions will significantly affect wetlands and wetland productivity on the Cameron Meadows tract. The DEIS includes some breadcrumb mitigation offerings in Louisiana in the form of several relatively small wetland restoration projects at the Sabine National Wildlife Refuge and private lands, located north of the refuge. Why has no mitigation been proposed at Cameron Meadows? How does the USACE, Galveston District, plan to mitigate or compensate for the project's adverse, long-term cumulative impacts at Cameron Meadows and other wetland areas in Cameron Parish? 6 7 8

Thank you for the opportunity to make these comments.

Sincerely yours,

Sherwood M. Gagliano, Ph.D.
Chief Executive Officer

xc: Louisiana Governor Bobby Jindal
U. S. Senator Mary Landrieu
U. S. Senator David Vitter
U. S. Representative Charles Boustany
Cameron Parish Police Jury

Mr. Sherwood M. Gagliano, Ph.D.
Chief Executive Officer
Coastal Environments, Inc.
1260 Main Street
Baton Rouge, LA 70802

RESPONSE TO COMMENTS

Comment No.	Response
1	Costs cited in the comment are specific to the Mississippi River-Gulf Outlet (MRGO) project and cannot be extrapolated directly to the proposed SNWW CIP. The cost to mitigate unavoidable environmental impacts have been included in the project cost estimate.
2	Galveston District is aware of the referenced document. The fact that navigation channels are one of the causes of coastal wetland loss in Louisiana is acknowledged in the FEIS (see Sections 1.4.2, 3.5, 3.9.4, 4.6 and 4.10) and this is reflected by the proposed mitigation plan for the project.
3	Requested information is presented in FR Chapter 5, and DFR Appendix 2. The DFR and DEIS are designed to complement one another, and both were provided for public review. The economic analysis presented in FR section V.F establishes that there would be a net economic benefit to the United States from the proposed project.
4	Non-structural alternatives, including new offshore ports like Louisiana Offshore Oil Port (LOOP) are thoroughly analyzed and presented in FR Chapter IV.D.
5	The proposed SNWW CIP is a Federal Civil Works project, and as such, it would provide benefits to the Nation, not just one state. The economic analysis presented in FR section V.F establishes that there would be a net economic benefit to the United States from the proposed project. Direct and indirect economic benefits of the proposed deepening will accrue to all users of the SNWW, including the energy industries, and to the regional economy.
6	It appears that Cameron Meadows is located within LA-9, the East Johnsons Bayou hydro-unit. FEIS Chapter 4 fully evaluates potential impacts from the SNWW CIP to this unit. As noted in FEIS Section 4.6.2, the proposed project would result in a minimal increase in water surface elevation (averaging less than an inch), a slight increase the amount of tidal exchange, and a slight increase in the conveyance of inflows to the Gulf. All of these effects are minimal.
7	The proposed mitigation replaces estimated land loss with more than four times the amount of marsh projected to be lost, providing more than adequate mitigation for the full range of possible impacts. The ICT, which includes several Louisiana resource agencies, selected all of the mitigation areas included in the mitigation screening. This screening process and the incremental cost analysis are described in FEIS Section 5.4. The proposed mitigation measures are located in the hydro-units with the highest predicted impacts.
8	As demonstrated in FEIS Section 4.16, the proposed SNWW CIP would not contribute to cumulative impacts in the study area because all impacts of the proposed SNWW CIP would be fully offset by compensatory mitigation measures, and the proposed project would have net beneficial effects on wetlands, water quality and SAV due to the extensive BU feature on the Neches River and the Gulf Shore BU feature.

Stokes, Janelle S SWG

From: CUPERO, KELLY M [KCUPERO@entergy.com]
Sent: Thursday, February 18, 2010 8:39 AM
To: Stokes, Janelle S SWG
Subject: Sabine-Neches Waterway DEIS

Janelle:

It was a pleasure visiting with you the other day. On behalf of Entergy Texas, Inc., I appreciate your efforts to address all parties' concerns, particularly those of ETI, with respect to this project.

As mentioned, Entergy Texas, Inc. would like to be included in all mailings/publications/announcements/etc. regarding the project. Please include the following individuals on your notification list: 1

Kelly M. Cupero, Senior Counsel

Entergy Services, Inc.

P.O. Box 2951

Beaumont, Texas 77706

Telephone: (409) 981-2790

Facsimile: (409) 981-3016

kcupero@entergy.com

Anne Demuth

Entergy Texas, Inc.

Environmental Services

P.O. Box 888

Bridge City, Texas 77611

Telephone: (409) 734-3350

Facsimile: (409) 734-3347

ademuth@entergy.com

Fred Manhart

Entergy Services, Inc.

Environmental Services

10055 Grogans Mill Road

Parkwood II Building, Suite 500

The Woodlands, Texas 77380

Telephone: (281) 297-3304

Facsimile: (281) 297-3004

fmanhar@entergy.com

Hunt Sproull

Corporate Real Estate

Entergy Services, Inc.

639 Loyola Avenue

L-ENT-3L

New Orleans, Louisiana 70113

Telephone: (504) 576-4136

Facsimile: (504)-4001

hsproul@entergy.com

Thank you for your attention to this matter. Please feel free to contact me if you have any questions.

Kelly Cupero

Senior Counsel

Entergy Services, Inc.

(409) 981-2790

Ms. Kelly Cupero
Entergy Services, Inc.
P.O. Box 2951
Beaumont, TX 77706

RESPONSE TO COMMENTS

Comment No.	Response
1	Entergy representatives have been added to the SNWW CIP mailing list as requested.

Entergy

Entergy Texas
P.O. Box 2951
Beaumont, TX 77704
Tel 409 981 2135
Fax 409 981 2075

Vernon Pierce
Director of Customer Service

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 3, 2010

Ms. Janelle Stokes
Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, TX 77553-1229

RE: Comments to the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

On behalf of Entergy Texas, Inc. ("ETI"), an investor-owned electric utility operating in Southeast Texas, I appreciate the opportunity to submit comments to the U.S. Army Corps of Engineers' Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project ("Project").

After reviewing the information provided by the U.S. Army Corps of Engineers in its December 18, 2009 mailing, ETI became concerned that property owned by ETI had been identified as a "beneficial use" area and that dredge spoils could be deposited on this ETI-owned property. The property at issue is identified by the Corps as the Old River Cove area in the Corps' Figure VI-7, also noted as TX6-1a on Drawing No. C-25. Upon further review, ETI determined that most, if not all, of the Old River Cove area is owned by ETI and is subject to a public hunting license agreement between ETI (through its predecessor, Gulf States Utilities Company) and Texas Parks and Wildlife Department. 1

ETI has not yet fully investigated the potential impact that the placement of dredge spoils on this property may pose to ETI or the Texas Parks and Wildlife Department. However, with the close proximity of the Old River Cove area to ETI's Sabine Generating Plant (which lies immediately north of the Old River Cove area) and its associated intake and outfall canals, additional review and investigation as to the potential impact to the plant's operations must be evaluated. Due to the critical nature of Sabine Generating Plant's electric generation operations to the ETI system, any potential impact on the plant's operations must be reviewed and considered very carefully. ETI's concern exists irrespective of whether dredge spoils are placed on the ETI-owned property or placed on property not owned by ETI but within the vicinity of the ETI intake and outfall canals. Additionally, while not impacted by the proposed beneficial use of the Old River Cove area, ETI transmission facilities and gas pipeline facilities also may be impacted by the Project. 2 3

ETI appreciates being invited to participate in the comment process, and we look forward gathering more information as this Project progresses. If you have any questions or would like to discuss this matter further, please feel free to contact Kelly Cupero at (409) 981-2790 or Fred Manhart at (281) 297-3304.

Sincerely,

Vern Pierce

VP/th

Mr. Vernon Pierce
Director of Customer Service
Entergy Texas
P.O. Box 2951
Beaumont, TX 77704

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for this information. Maps in the FR and FEIS will be revised to accurately reflect ownership of this tract. The tract in question is the location of a proposed BU feature (Old River Cove, TX 6-1).
2	USACE would work with Entergy during the PED and/or Construction phase to develop a detailed design plan that does not impact Entergy's intake and outfall canals, or impact plant operations during construction.
3	USACE would work with Entergy during the PED and/or Construction phase to develop a detailed design plan that does not impact Entergy's transmission facilities and gas pipelines.

Golden Triangle Audubon Society

The National Audubon Society Chapter in Southeast Texas
Post Office Box 1292, Nederland, Texas 77627-1292

March 9, 2010

United States Army Corps of Engineers
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553

Re: Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Please find enclosed Golden Triangle Audubon Society's comments on the draft Environmental Impact Statement.

Yours sincerely.

John A. Whittle
Secretary

Comments on the Draft EIS for the
Sabine Neches Waterway Channel Improvement

March 9, 2010

These comments are submitted on behalf of Golden Triangle Audubon Society. Our territory covers Jefferson, Orange and Hardin counties in Texas and a few close-by communities.

Our major concern is that the coastal marshes and wetlands, Sabine Lake, and the wildlife that uses them be protected from the adverse effects of increased salinities and unnatural increased water flows from the Gulf under all conditions both normal and abnormal such as during major hurricanes. We fully understand the beneficial function of coastal marshes in attenuating the inflow of water from tropical storms and hurricanes, but equally understand that they will not do this if they are already degraded at the time of the event. This requires that salinity levels not be allowed to increase and existing channels not be exposed to increased exchange with Gulf salt water. 1

The first issue that we would raise is one of alternatives. The only alternatives to "No action" that are comprehensively addressed are those in which the only difference is in the depth to which it is proposed to dredge the channel. These are, in the larger picture, only relatively small changes in one major alternative. We believe that NEPA and common sense require a broader approach to the issues, so that an outcome that solves the problem and that is the best possible from an environmental perspective can be selected. 2

The first obvious alternative, briefly discussed in the draft document, involves an offshore oil terminal after the manner of the Louisiana Offshore Oil Port or LOOP. This has been successful, has involved only vanishingly small environmental impacts during construction and operation, and has survived two or three major hurricanes without environmental damage, being restored to full commercial operation in remarkably short times after such events. Such a port could be located so as to be capable of accommodating the Very Large Crude Carriers of today – LOOP is reported to be the only port in the nation so capable at present – while the proposed increase in the depth of the channels in the Sabine Neches Waterway System will only have a comparatively small effect on the capacity of tankers that can be accommodated. This alternative is dismissed in the draft document with minimal discussion, apparently in part because the proponents of such a port have not yet coalesced into a partnership with the resources and desire to pursue it in the immediate future in a Sabine-Neches related location. However, we do not believe this should prevent it from being a preferred alternative in a NEPA EIS. It is also indicated that such a port would not address the prime objective of increasing the "efficiency" the waterway system, because it would serve only one commodity, namely oil. Yet it is clear that the root cause of any current inefficiency is the number of oil tankers using the waterway system, and that there is no record of significant demonstrated need to use larger draft ships by other users of the waterway. If much of the tanker traffic is removed from the waterway system, the vessel traffic will be cut to a fraction of its current volume, and the "lack of efficiency" will be no more. The oil pipeline industry's environmental safety record is excellent, and we suggest is much better than the oil tanker industry record. Any spills that occur from pipelines are typically localized and do not affect large areas or numbers of people. This would make the "No action" alternative the logical preferred alternative from an environmental perspective in as far as the narrower scope of the current proposal is concerned, because such an oil port would not significantly impact the environment or add any additional risk to the coastal wetlands and communities except to the extent that pipeline construction does, and that would be a project under the jurisdiction of other agencies. An offshore oil port could provide more additional capacity than channel deepening, and would not leave an ongoing environmental impact when, at some time in the next generation, the world reduces its reliance on oil in favor of "renewable" energy sources. 3 4

One could also envisage other alternatives that would deepen the channel only as far north as Sabine Pass where tankers could be offloaded into a pipeline system for onward transportation and an alternative that would deepen the Channel only as far north as Port Arthur. Each of these would almost certainly involve more environmental impact, but the overall environmental impact versus benefits to the local communities and the nation ought to be examined, although it seems unlikely they would be more beneficial overall than an offshore port. 5

We are concerned about what appears to us to be a lack of detailed consideration of the effects on wildlife. There are brief and rather vague descriptions of the birds in the areas to be impacted, taken it seems from broad-brush state and region-wide distribution data, albeit reliable in what it attempts to do. More site specific Christmas Bird Count data, which is available for the area of the proposed Gulf Shore Beneficial Use area, does not seem to have been used, nor is there any detailed discussion of the impacts in the short or long term or of cumulative impacts over time. We would note that, as yet, there is minimal documented input from the biological scientific staff of agencies with lands in the areas of potential impact. LDWF appears, even aside from its parochial concerns, not to be in support of the changes or the proposed mitigation, while US Fish and Wildlife Service appears yet to be heard from officially. We believe the professional opinions of the biologists in these agencies on likely effects on the marshes on either side of the channel near the coast should be solicited and fully considered. 6 7 8

We are concerned about the manner or placement of beneficial use dredge material along the Texas and Louisiana Coasts either side of the Channel from Texas Point westwards and Louisiana Point eastwards. If we understand correctly that the proposal is to deposit dredge material on shore along the current beaches at six year intervals, we believe the effect on wildlife could be very serious. The immediate beach area that is used by a number of wintering shorebird species including Piping Plovers, Whimbrel, Dunlins, and Black-bellied Plovers would be disrupted by the deposits, and would likely have just recovered fully when the next deposit was scheduled. The dredge material cannot be expected to immediately have the crustacean and invertebrate communities needed to provide shorebird food. On the Texas side, schemes that place the material near the jetty so that it is carried by the prevailing westerly currents along the shore in a more natural fashion over time should be planned. Alternatively, the material should be deposited a short distance offshore to be carried gradually on shore. There is also a need to monitor the dredge material to ensure that it does not contain any heavy metals or other contaminants. 9 10 11

There is an apparent absence of adequate consideration of potential storm and hurricane effects if the preferred alternative is implemented. This area remembers all too well the effects of recent hurricanes, Hurricane Ike in particular, and there is much evidence from the New Orleans area of the adverse consequences of the Mississippi River Gulf Outlet (MRGO) during Hurricane Katrina. It is worth comparing the MRGO with the current and proposed Sabine-Neches Waterway (SNWW) channels. The MRGO was 76 miles long (somewhat longer than the SNWW), only 36 feet deep (less than the current SNWW channels) and 500 feet wide (very roughly the same as the current average SNWW width). In response to local pressure and increasing evidence that the MRGO significantly contributed to the disaster in New Orleans during Hurricane Katrina, the MRGO was closed in July 2009. On November 18, 2009, the US District Court for the Eastern District of Louisiana found that the Corps was responsible for damages to many plaintiffs because, among other things, the original EIS was arbitrary and capricious, and because the Corps failed to protect the environment (mostly marsh) surrounding the MRGO. The most scientifically valid modeling suggests that the existence of the MRGO intensified the storm surge in Katrina by 20 percent, raised the wall of water 3 feet and increased the velocity of the surge from 3 ft/sec to 8 ft/sec. While that 12

modeling compared the existing MRGO versus no MRGO, and there are existing channels in the Sabine Neches system, there is no reason not to believe that increasing the depth of the channels would allow more wind driven storm surge into Sabine Lake and Bridge City and the Sabine River into Orange, and increased and possibly significant storm surge up the Neches through Port Neches to Beaumont and the salt water barrier, and up all the various bayous such as Taylor Bayou and Hillebrandt Bayou. The magnitude of such an increase will be difficult to predict accurately, but the effect will be there, and any increase in storm surge carries with it the inevitability of greater areas and areas further from the lakes, channels, rivers and bayous being impacted by waters driven by the storm surge. In a storm of the magnitude of Hurricane Ike, it is inevitable that near the coast, the storm surge will cover all the land. However, deeper channels reaching inland will be capable of carrying larger volumes of water for longer periods even before the storm surge has covered any land, and consequently, more water will be driven by the winds up these channels by the south winds on the east sides of storms. To conclude that such effects will be minimal is wishful thinking in the light of the MRGO experience in Katrina. In such a storm or hurricane event, some of the marshes adjacent to the Channel would receive a greater surge, would be able to absorb a lower fraction of the storm surge, would be damaged by salt water to a greater extent, and would therefore take much longer to recover. The cumulative effects of additional salt water exchanges would likely degrade more marsh, much as has happened south of New Orleans and all along the Louisiana coast. In short, the proposed increase in the channel depth will significantly increase the impact on the environment and the damage to communities in any future hurricane storm surge.

John A Whittle

John A. Whittle, Secretary
Golden Triangle Audubon Society
P.O. Box 1292
Nederland, Texas 77627-1292

Mr. John Whittle
Golden Triangle Audubon Society
P.O. Box 1292
Nederland, TX 77627-1292

RESPONSE TO COMMENTS

Comment No.	Response
1	The FEIS thoroughly presents potential impacts associated with channel deepening (see particularly FEIS Sections 1.4.2, 3.5, 3.9.4, 4.6 and 4.10). A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010). The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5. All impacts of the proposed SNWW CIP would be fully offset by compensatory mitigation measures, and the proposed project would have net beneficial effects on wetlands, water quality and SAV due to the extensive BU feature on the Neches River and the Gulf Shore BU feature.
2	The No Action and 3 Non-Structural alternatives are thoroughly analyzed and presented in FEIS Section 2.2 and FR Chapter IV.D.
3	USACE disagrees with the assertion that and offshore oil port is dismissed with minimal discussion. FEIS Section 2.2.2.3 presents the results of an in-depth economic analysis in an extensive discussion of this alternative.
4	The DFR and DEIS are designed to complement one another, and both were provided for public review. The economic analysis presented in FR Chapter 5, and FR Appendix 2, describes significant benefits from the proposed channel deepening for refined petrochemical products, LNG, and dry bulk products, in addition to crude oil. The analysis acknowledges that an expansion of LOOP or construction of a similar facility in Texas would reduce the vessel traffic on the Neches River, and this would reduce (but not eliminate) the economic viability of the proposed SNWW CIP.
5	Past and present trends in infrastructure and fleet investments indicate that industry intends to continue using the Neches River Channel. An increase in the number of specially designed SNWW vessels was recently completed by one company, and another has invested in Neches River dock modifications for larger vessels. Significant facilities located on the Neches River Channel continue to be a focus of industry investment. Alternatives such as an unloading terminal along the Sabine Pass or Port Arthur Canal are discussed in FR Chapter IV (Non-Structural Alternatives-Alternative Mode of Commodity Transport) but would not address the needs of these users.
6	FEIS Sections 3.1.3 and 4.1.4 described the WVA community model, an ecological model that was used to assess and quantify impacts to fish and wildlife and their habitats. FEIS Appendix C, Section 2.6, describes all of the fish and wildlife species that were considered in developing the WVA model. Use of this model ensured appropriate consideration of the proposed project's effects on wildlife.
7	As demonstrated in FEIS Section 4.16 (Cumulative Impacts), the proposed SNWW CIP would not contribute to cumulative impacts in the study area because all impacts of the proposed SNWW CIP would be fully offset by compensatory mitigation, and the proposed project would have net beneficial effects on wetlands, water quality and SAV due to the extensive BU feature on the Neches River and the Gulf Shore BU feature.
8	FEIS Section 1.6 describes the ICT which is comprised of thirteen resource agencies from Texas, Louisiana and the Federal government. All of these agencies were involved throughout the study in determining what environmental studies needed to be done,

	reviewing study results, and screening and approving BU features and mitigation measures. The FEIS is explicit about the extensive involvement of all of these agencies in plan development. The resource agencies prepared their formal comments during the public comment period, and they are included in the FEIS, Appendix A. U.S. Fish and Wildlife Service (USFWS), which submitted its comments in the Coordination Act Report, agrees with the predicted project impacts, and proposed BU features and mitigation measures. U.S. Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and the Texas Parks and Wildlife Department (TPWD) have also expressed approval of impact assessments, and BU and mitigation measures.
9	Potential impacts to shorebirds and the wintering Piping plover are presented in FEIS Section 4.12.2, 4.13.2, 7.6, and Appendix G. The USFWS has concurred that the Gulf Shore BU feature is not likely to adversely affect the Piping plover or its critical habitat. Effects on other wading shorebirds are expected to be similar.
10	FEIS section 2.5.3.2.2 (Gulf Shore BU Feature) contains an in-depth evaluation of the anticipated effects of regular shoreline nourishment at Texas and Louisiana points using maintenance material from Sabine Pass. The mobile material within the surf zone should generally migrate to the west at both Texas and Louisiana points. The additional fine-grained sediments could lower erosion rates in Texas through mudflat accretion and wave attenuation. If material was placed closer to the west jetty, it would likely migrate to the east, contributing to the Sabine fillet, rather than being carried further westward.
11	FEIS Sections 3.3, 3.4, 4.4 and 4.5 summarize water and sediment quality in the study area. Sampling will be performed by USACE as part of its maintenance dredging program.
12	Information presented relative to the MRGO project cannot be extrapolated directly to the proposed SNWW CIP. USACE has performed a suite of studies and modeling specifically for this project area, the results of which support the environmental impacts and proposed mitigation presented in the FEIS. A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010). The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5. All impacts of the proposed SNWW CIP would be fully offset by compensatory mitigation measures, and the proposed project would have net beneficial effects on wetlands, water quality and SAV due to the extensive BU feature on the Neches River and the Gulf Shore BU feature.

COMMENTS ON THE DRAFT EIS FOR THE
SABINE NECHES WATERWAY IMPROVEMENT PROJECT

These comments are submitted on behalf of the Golden Triangle chapter of the Sierra Club. Our chapter includes members from Jefferson, Hardin, Orange and Chambers Counties.

We have four issues to raise with respect to the draft EIS for the Sabine-Neches Waterway channel Improvement project. These are:

(1) Inadequate assessment of the potential for continued degradation of critical marshland in the vicinity of a further channelized Sabine Neches waterway. The subsequent impact on residential communities and industry from potential further loss of these wetlands is not fully addressed in the EIS. 1
(2) Failure to consider the impact of dredge material disposal on wildlife and appropriateness of this material for beach replenishment to enhance desirability of local beaches for human use. 2
(3) No assessment of alternative concepts to satisfy the needs of the current waterway users with respect to offloading oil, which appears to be the primary driver for a deeper channel. 3
(4) Lack of documented input from USFWS and TPWD on impact of additional channelization on adjacent marshes, fishery nursery areas, and on wildlife in the several WMAs and NWRs located adjacent to the waterway and encompassed by the proposed project. 4

These issues are elaborated further in the following remarks.

(1) Deepening the channel may well add significantly to the total volume of constricted water susceptible to being wind driven in a storm surge. It is now well understood what happens to a constricted waterway when a hurricane moves up a channel as was the case during Katrina in New Orleans. The Mississippi River Gulf Outlet, somewhat similar to the Sabine waterway, and built by the Corps, was found to contribute significantly to the New Orleans disaster. Indeed, the U.S. District Court for the Eastern District of Louisiana found that the Corps was responsible for much damage to plantiffs because, in part, of an arbitrary and capricious EIS and a failure on the part of the Corps to protect the marshes in the vicinity of the river outlet.

The initial Sabine Waterway construction has contributed significantly to marsh degradation over most of the 20th century but in recent years through massive and costly efforts by state and local officials, stabilization of marshlands in the vicinity of the waterway has been somewhat achieved. Hurricane Ike demonstrated the need for adequate marsh lands to absorb storm surge.
In light of these recent disasters, the finding by the US. District court and coupled with knowledge of the impact of the Sabine waterway, as it currently

exists, on surrounding marshland leads us to conclude that a risk-benefits analysis of further channelization should be undertaken. Input from hurricane and disaster specialists, biologists, ecologists and community leaders are required before such a project is undertaken. We believe that such a study may well show that the risks to the larger community of proceeding with this project may far outweigh the perceived financial benefit to one small segment of the population.

(2) Every dredging project requires spoils disposal and this project will generate significant spoils for disposal. The upper Texas coast has much experience with dredging for beach replenishment from dredging Rollover Bay for Bolivar beaches to offshore Galveston area dredging to replenish beaches to support a dynamic tourist trade on Galveston Island. Geologists and ecologists have learned that only certain types of dredge material will suffice for beach replenishment. There is no evidence whatsoever from the EIS that the dredge material from Sabine Neches is suitable for beach replenishment to sustain beach wildlife or to create an aesthetically pleasing environment for human use. In fact, the proposal to dump some of the spoils along the Texas and Louisiana beaches seems more along the lines of the mindset of the 19th century when the beach was the dumping ground for all manner of waste. We believe a careful scientific assessment of the material from such a dredge project should be undertaken with a view that all possibilities need be considered with respect to what to do with the dredge material. This might consist of construction of birding islands in Sabine Lake, such as those built in Galveston Bay following dredging of the Houston ship channel or other such uses as might be deemed appropriate. The arbitrary decision to dump spoils at Texas Point may well have disastrous impact of shore bird populations and the viability of the Texas Point National Wildlife Refuge.

(3) The project goal is to increase the efficiency of the waterway yet alternatives to the proposed project have been only cursorily considered. For example, construction of an offshore oil port would remove most of the tanker traffic from the Sabine waterway and significantly improve its efficiency. This is a viable and proven alternative as has been demonstrated with the Louisiana Offshore Oil facility. It benefits from minimal environmental impact, is easy to expand as tankers increase in size and is done without cost to the taxpayer. Oil transport from the port via pipeline is safe and much more environmentally friendly than moving large tankers through narrow constricted waterways. The recent oil spill due to collision in the narrow Sabine waterway attests to this fact as a near environmental disaster akin to the Exxon –Valdez spill was only narrowly averted by the heroic actions of Coast Guard, state and local officials.

(4) The upper Texas coast and the La coastal areas are among the richest fishing grounds in the world and supply nearly half of the seafood across the U.S. These fisheries are dependent on a healthy marsh system as nursery grounds. Increasing salinities endanger these fishing grounds and hence endanger a significant food supply across the U.S. We believe it is imperative that input from USFWS and TPWD be aggressively sought and considered before a project that could

substantially impact Texas and La commercial and recreational fishery is undertaken. Further, three federal NWR and three state WMA are encompassed by this project. These refuges were acquired at great public expense to protect and nurture wildlife. We find little or no comment in the EIS on the impact this project will have on these sensitive set-aside areas. Finally, we noted that the National Marine Fishery Agency has expressed grave concerns about the potential for damage to marsh, Sabine lake fishery nursery areas and indeed damage to the entire lower Sabine-Neches watershed . (page 698 of EIS draft under Public comments). We find their assessment most alarming.

Lastly, we have reviewed the many public comments appended to the EIS and find recommendations cited in three of these documents as particularly compelling for follow through. We believe each of the 244 recommendations proposed by the Stream Properties Management Group, Inc. (Lake Charles, La) in the public comments (pages 739-754) should be carefully evaluated and discussed individually in the EIS; we recommend the technical analysis proposed by TPWD (page 709) be implemented; and we concur with the recommendations proposed by the Louisiana Sierra Club (page 786).

We also request you elaborate further on the adverse environmental impact and unavoidable consequences of the dredge disposal plan documented by your consulting group on page 870 of the draft EIS.

John Wesley Paul, Ph.D
Conservation Chair
Golden Triangle Sierra Club
13005 Beaverbrook St.
Lumberton, Texas 77657

Mr. John Wesley Paul, Ph.D.
Conservation Chair
Golden Triangle Sierra Club
13005 Beaverbrook Street
Lumberton, TX 77657

RESPONSE TO COMMENTS

Comment No.	Response
1	Potential impacts of the proposed SNWW CIP to marsh in the study are thoroughly analyzed in the FEIS (see Sections 1.4.2, 3.5, 3.9.4, 4.6 and 4.10). All impacts of the proposed SNWW CIP would be fully offset by compensatory mitigation measures, and the proposed project would have net beneficial effects on wetlands, water quality and SAV due to the extensive BU feature on the Neches River and the Gulf Shore BU feature. USACE has performed a suite of studies and modeling specifically for this project area, the results of which support the environmental impacts and proposed mitigation presented in the FEIS. A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010). The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5.
2	FEIS section 2.5.3.2.2 (Gulf Shore BU Feature) contains an in-depth evaluation of the anticipated effects of regular shoreline nourishment at Texas and Louisiana points using maintenance material from Sabine Pass. Potential impacts to shorebirds and the wintering Piping plover are presented in FEIS Section 4.12.2, 4.13.2, 7.6, and Appendix G. The USFWS has concurred that the Gulf Shore BU feature is not likely to adversely affect the Piping plover or its critical habitat. The proposed Gulf Shore BU feature is supported by USFWS, NMFS, TPWD and the Texas Point National Wildlife Refuge.
3	The DFR and DEIS are designed to complement one another, and both were provided for public review. The economic analysis presented in FR Chapter 5, and FR Appendix 2, describes significant benefits from channel deepening for refined petrochemical products, LNG, and dry bulk products, in addition to crude oil. The analysis acknowledges that an expansion of LOOP or construction of a similar facility in Texas would reduce the vessel traffic on the Neches River, and this would reduce (but not eliminate) the economic viability of the proposed SNWW CIP.
4	FEIS Section 1.6 describes the ICT which is comprised of thirteen resource agencies from Texas, Louisiana and the Federal government and includes representatives from NWRs and WMAs in the study area. All of these agencies were involved throughout the study in determining what studies needed to be done, reviewing study results, and screening and approving BU features and mitigation measures. The FEIS is explicit about the extensive involvement of all of these agencies in plan development. The resource agencies prepared their formal comments during the public comment period, and they are included in the FEIS, Appendix A. USFWS, which submitted its comments in the Coordination Act Report, agrees with the predicted project impacts, and proposed BU features and mitigation measures. EPA, NMFS, and TPWD have also expressed approval of impact assessments, and BU and mitigation measures.

TARGA

Targa Midstream Services Limited Partnership
1000 Louisiana, Suite 4300
Houston, Texas 77002

March 10, 2010

VIA E-MAIL AND REGULAR MAIL

Ms. Janelle Stokes
Department of the Army
Galveston District, Corps of Engineers
P.O. Box 1229
Galveston, Texas 77563-1229
E-Mail: janelle.s.stokes@usace.army.mil

Re: Targa Resources, Inc.
Sabine-Neches Waterway Project and Study

Dear Ms. Stokes:

On behalf of Targa Midstream Services Limited Partnership, we are submitting comments concerning the Draft Feasibility Report (DFR) and the Draft Environmental Impact Statement (DEIS) concerning the above referenced project. Prior to the release of the DFR on December 24, 2009, there was no prior communication by the sponsor of the proposed project with Targa regarding potential pipeline relocation issues or the project in general. The DFR that was made available in December describes a large number of pipelines which carry a variety of products whose relocations will be required by the project. At least two of those pipelines identified in the project are owned by Targa Midstream Services Limited Partnership (successor to Dynegy Midstream Services Limited Partnership). Our review of the DFR and DEIS prompts Targa to submit the following comments for your consideration:

1. **There appears to be inadequate evaluation of the costs associated with relocation of the pipelines at issue.** 1

The DFR and DEIS indicate that 42 pipelines will require relocation and 6 abandoned pipelines will require removal. (Review of documents provided by the Corps suggests that number may be as high as 50 pipelines.) While there is a recognition in the DFR and DEIS that 50% of the costs would be borne by the non-federal sponsor, it is also suggested that the remaining 50% would be borne by pipeline owners. The DFR does not provide any confirmation by the sponsoring entity (Sabine Neches Navigation District) that it has the financial wherewithal to be responsible for the 50% stated by the Corps. More importantly, there is no detailed discussion within the DFR or DEIS which indicates the true anticipated costs of these proposed relocations. Targa's pipelines are in open water and many different considerations must be taken into account than for lines that are onshore. Not only is timing an important consideration as to when an offshore pipeline can be relocated or abandoned, plans to decommission and relocate/abandon a pipeline must also have other federal agency approval. As the Corps is aware, the Department of Interior – Mineral Management Services ("MMS") determines how pipelines in the Gulf are to be relocated or abandoned. Performing a relocation or removal of a

pipeline would require at the very least: retention of barge(s) to provide divers to survey the area and confirm the location and depth of Targa's line(s) in the Outer Continental Shelf; provision of protocols that ensure all applicable environmental standards and requirements are incorporated into the relocation/abandonment; shut in of gas from the producers on the pipeline; flushing and pigging the pipeline; exposing the line; 'jetting' the line to lower it; cutting and capping in order to remove a portion of the line for the required depth; installation of the required length of pipe once the fairway has been jetted to the required depth; covering of the line; hydrotesting and pigging the line for water removal; and purging and filling the line with gas prior to operation. It has been the experience of Targa that even simply capping and abandoning a pipeline can cost multiple millions of dollars. The above costs for such a forty year old line could range from $5 to $10 million or more.

Likewise, there is no discussion in the DFR or DEIS as to the mechanism by which the pipeline owners will be compelled to pay 50% of the costs. What is the Corps timetable for its recommendation of funding of the project by the Sabine Neches Navigation District (the "District")? It should be noted that a number of the pipelines were placed pursuant to permits which may not have included such requirements. Thus, the ultimate cost of relocation of those pipelines may be the subject of expropriation litigation; and there is no discussion if the DFR or the DEIS about the costs associated with that type of litigation and/or the results of same. Further, there is no discussion as to whether these potential costs would be included in the 50% reimbursable costs by the District.

2. **There is no discussion in the DFR or DEIS concerning scheduling of the proposed relocations.** 2

As noted by one previous commentator, the relocation of pipelines requires years of advance planning and coordination and generates significant operational and engineering burdens on the pipeline owners industry in general. Likewise, there are a limited number of pipeline construction companies with limited assets; and there is no discussion in the DFR or DEIS about the availability of equipment and engineering expertise to plan and coordinate the pipeline relocations and no discussion on the impact on the Nation as a whole of this massive disruption of current pipeline capacity.

3. **There is no discussion in the DFR or DEIS regarding the impact on wells serviced by the pipelines or customers served by the pipelines.** 3

There is no doubt that, when a pipeline is to be relocated, the wells serviced by that pipeline must be shut in and the lines purged. In such an instance, a number of those wells will not return to production; and there is no discussion in the DFR or DEIS regarding the number of such wells and the impact (both with regard to well owners and the American economy in general) resulting therefrom. In addition, there is no discussion as to the potential expropriation and/or damage litigation which may result from the loss of such wells. Further, as the Corps is aware, all production leases currently in the outer continental shelf are leased from the Mineral Management Services. There is no discussion as to how the interruption in production will impact on these individual producers and/or the MMS (for the benefit of the public) who has royalty interest in these wells. More importantly, there is no discussion as to the impact non-production of the wells will have on any termination provisions in these MMS leases.

In addition, the impacted pipelines provide a substantial portion of the energy supplies to both residential customers and industrial/power plant customers. The timing of the relocations and the coordination of such efforts is needed to reduce the impact on those customers of suddenly losing their supplies when the pipelines are taken out of service so that they can be relocated. Targa believes this issue has not been adequately addressed nor does there seem to be a plan in place to mitigate the harm

to customers, whether those are customers who depend on natural gas for household use or depend on the feedstock and fuel to keep industrial facilities and electric generation plants running.

4. **There is no discussion in the DFR or DEIS regarding the potential environmental impacts associated with relocating 42 pipelines** 4

As noted above, the relocation of a pipeline will require significant planning and creates an environmental risk of releases during relocation activities. The documents provided by the USACE indicate that the pipelines carry a variety of products including natural gas, ethylene, oxygen, nitrogen, butadiene, hydrogen, ethanes, and refined products; and there is no discussion in the DFR or DEIS regarding the potential environmental impacts associated with a release of such products during relocation activities. As to relocation of pipelines in the Outer Continental Shelf, there are regulations relating to searching for any possible obstructions, historic relics, environmental contaminants, etc., and there is no discussion regarding the magnitude of such potential hazards or the costs of avoiding same. In addition, the physical act of relocating pipelines causes disruptions to the seabed; and there is no discussion in the DFR or DEIS regarding potential environmental impacts associated with this significant amount of offshore construction.

5. **There is no discussion in the DFR or DEIS regarding potential alternative channel extensions.** 5

Neither the DRF or DEIS discusses alternative channel extension locations and there is no discussion whether any such alternatives would reduce the negative impacts discussed above. There does not appear to have been any analysis done as to alternative locations for the placement of spoil or different angles of approach for the channel extension. It would appear that changes in the angle and location of the spoil would eliminate the impact on at least some of the pipelines at issue.

6. **There has been inadequate discussion of alternative methods to achieve economic growth in the area in question.** 6

Several participants at various public meetings expressed serious concern about the environmental impacts associated with deepening the existing channel and creating a channel extension as discussed in the DFR and DEIS with particular concern to damage to Louisiana's wetlands estuaries and wildlife. Those commentators inquired as to whether comparable economic benefit could be obtained by the construction of an offshore port with a pipeline into the port at issue. Neither the DFR nor the DEIS discuss these comments or appear to consider this alternative.

7. **There is no discussion in the DFR or DEIS regarding the potential environmental impacts associated with storm surges resulting from the deepening the channel in relationship to on-shore facilities.** 7

While there has been some discussion (minimal at best) in the DFR and/or DEIS about the environmental impact of relocating or abandoning of lines, there is no discussion as to the impact on on-shore facilities from possible storm surges that could result from the deepening of the Sabine Pass, the Sabine Pass Jetty Channel, Sabine Pass Outer Bar Channel and the widening, deepening and extending of the Sabine Bank Channel. The Corps itself acknowledges that the only connection with the Gulf of Mexico is a long narrow pass called the Sabine Pass Benters from deep water in the Gulf through the Entrance Channel, which is divided into the Sabine Bank Channel and the Sabine Pass Outer Bar Channel. Targa has plants no more than twenty five miles from the mouth of the Sabine Pass. As the Corps is acutely aware, the deepening of the waterways in St. Bernard Parish was a cause

of most of the flooding that occurred in New Orleans during Hurricane Katrina in 2005. Indeed, a lawsuit against the Corps after Hurricane Katrina argued that the deepening of the St. Bernard waterway resulted in providing no protection to those persons and property on shore. The DFR and DEIS fail to address any flood protection system for those oil and gas facilities on shore should another Category 3 or greater hurricane come on shore at or near that part of Louisiana and Texas.

Targa believes that the real impact – and the real cost – of the project cannot be estimated with any accuracy until the issues identified have been addressed. Targa would, therefore, request that the Corps not recommend proceeding with requiring the relocation or abandonment of the affected pipelines until the impact, the cost and the reimbursement of costs have been fully addressed and costs obtained with reasonable certainty. 8

Targa appreciates being given the opportunity to provide these comments and stand ready to provide the Corps with any additional information it may request.

Respectfully submitted,

TARGA MIDSTREAM SERVICES
LIMITED PARTNERSHIP

By: _____
Roy E. Johnson
Executive Vice President

Mr. Roy Johnson
Executive Vice President
Targa Midstream Services Limited Partnership
1000 Louisiana, Suite 4300
Houston, TX 77002

RESPONSE TO COMMENTS

Comment No.	Response
1	The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. FEIS Section 2.4.1.12 presents a discussion of the allocation of pipeline relocation costs between the non-Federal sponsor and pipeline owners.
2	A preliminary construction schedule has been developed (Engineering Appendix Addendum 2009, chapter 14.0 REVISED SCHEDULES FOR DESIGN AND CONSTRUCTION) and is available upon request. However, the actual time table for project construction is uncertain at this time because it is dependent upon ASA and OMB approval of the Chief's Report, Congressional authorization and Congressional appropriation of funds.
3	USACE will provide estimated construction contract start and end dates as soon as they are available, so that owners can schedule their relocations as they see fit, ensuring completion of the relocation prior to the award of the contract for that portion of the channel. USACE will ensure that channel construction contractors work with pipeline companies as needed to accommodate all parties for a safe and effective working plan.
4	Potential environmental impacts of relocating pipelines to a deeper depth are assumed to be minimal. However, each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. Relocating a pipeline and placing it deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the DOA permit.
5	Alternatives to the proposed channel extension are limited due to the bearing of the existing Sabine Bank Channel. Alternatives for offshore placement areas are thoroughly discussed in FEIS, Appendix B.
6	Non-structural alternatives, including new offshore ports like LOOP are thoroughly analyzed and presented in FR Chapter IV.D and FEIS Section 2.2.2.
7	A sensitivity analysis using the ADCIRC model was performed to determine what effect the proposed SNWW CIP might have on surge levels in the study area (Wamsley et al., 2010). The results of this analysis are presented in FR Chapter VIII, FEIS Section 4.1.5.
8	See USACE response to Comment 1. In addition, USACE recognizes that project costs may change as definitive plans for relocations (including utility relocations) are developed. FR Section XIII.D makes provisions for updating the economic evaluation to reflect additional associated costs identified during preparation of contract plans, and for notifying the affected pipeline owners.

COMMENT FORM

US Army Corps of Engineers
Galveston District

Sabine - Neches Waterway Channel Improvement Project
January 27, 2010
USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229

__ I am a Public Official

Name and Mailing Address (Optional):

Name David Richard
Address P.O. Box 40, Lake Charles, LA 70602
Email Address drichard@streamcompany.com
Phone 337-433-1055 ext. 119

PLEASE CHECK THE APPROPRIATE ITEMS BELOW:
I am primarily interested in the project from the standpoint of a:

__ Residential property owner or renter __ Business property owner or lessee
__ Other (Please explain) Large Private Wetland Owner adjacent to Sabine Lake & GIWW

How did you learn about this meeting?

__ Newspaper __ Notice in the Mail ✓ Email

__ Other (Please explain) _____

COMMENTS: I do not feel the mitigation requirements meet the changes in hydrology caused by the channel improvements. No plans have been submitted to combat increases in tidal amplitude and salinity in Sabine Lake and the vast marshes that are influenced by these detrimental factors to mitigate the effects. The dredging of the GIWW is not acceptable as a source of dredged material for beneficial use applications as proposed. Erosion on the GIWW currently is not addressed & the deepening of the GIWW will cause more land loss and endanger a large pipeline corridor on the South Embankment. The Sabine River will need these beneficial use areas in the future so this option with no land rights is unacceptable. 1 2

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed or emailed to the addressee below postmarked by February 10, 2010 to:

USACE – Galveston District
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553-1229
Janelle.S.Stokes@usace.army.mil

Mr. David Richard
P.O. Box 40
Lake Charles, LA 70602

RESPONSE TO COMMENTS

Comment No.	Response
1	Given the fact that impacts of the proposed SNWW CIP are related primarily to salinity intrusion, extensive efforts have been made to identify effective mitigation measures that could minimize or eliminate the projected increase in salinity and tidal amplitude. The results of this effort are presented in FEIS Section 5.4.1.1. None of the salinity control structures were selected because the net effect of the structures was determined to be negative. Beneficial salinity effects were modest and could not overcome the adverse effects of restrictions to marine organism access.
2	Engineering design would minimize impacts to the Gulf Intracoastal Waterway (GIWW) shoreline to the greatest extent possible; instability of emergent shorelines is not anticipated because dredging would remove accumulated maintenance material only, as described in FEIS Section 5.5.2. In situ sediments beside and below the existing GIWW channel would not be disturbed. However, should analyses determine that stabilization of small areas is needed, USACE would propose stabilization plans at that time.

Stokes, Janelle S SWG

From: Winn, Melinda [Melinda_Winn@kindermorgan.com]
Sent: Friday, March 12, 2010 12:52 PM
To: Stokes, Janelle S SWG
Subject: Kinder Morgan Comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Attachments: Janelle_Stokes_US_Army_Corps_03122010.pdf

Janelle_Stokes_US_Army_Corps_0...

Ms. Stokes,

Please find attached here Kinder Morgan's comments to the (1) Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation and (2) the Draft Feasibility Report for the proposed Sabine Neches Waterway Channel Improvement Project. Please include them in the administrative record.

Thank you,

Melinda K. Winn
Assistant General Counsel

Kinder Morgan Energy Partners, L.P.
One Allen Center
500 Dallas St., Ste 1000
Houston, TX 77002

Phone 713.369.8780
Fax 303.984.3737

KINDER MORGAN

March 12, 2010

VIA EMAIL TO Janelle.s.stokes@usace.army.mil
And First Class U.S. Mail
U. S. Army Corps of Engineers
Galveston District
P. O. Box 1229
Galveston, Texas 77553-1229

Attn: Ms. Janelle Stokes

Re: Comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Kinder Morgan affiliates include pipeline companies that have facilities located within the project area of the proposed Sabine Neches Waterway ("SNWW") Channel Improvement Project. Kinder Morgan is diligently performing a review of the proposed project. We have assembled a team comprised of land, legal, environmental, engineering, and operations representatives that is reviewing and analyzing the preliminary project plans and the limited information regarding existing pipeline river crossings in the DFR and DEIS.

By this letter, Kinder Morgan offers its comments on (1) the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation (collectively, the "DEIS") and (2) the Draft Feasibility Report for the proposed Sabine Neches Waterway Channel Improvement Project (the "DFR"). Your original letter and announcement were silent as to whether comments also were invited on the DFR, but representatives of the Corps of Engineers (the "Corps") subsequently advised that comments also were being accepted on the DFR.

The DFR and DEIS indicate that the proposed project will require a large number of pipeline relocations and removals, including at least six owned by Kinder Morgan affiliates, but Kinder Morgan is unaware of any prior effort to coordinate the project's planning with pipeline owners and operators, even though it is common knowledge that pipelines lace the area impacted by the proposed project. In fact, Kinder Morgan understands that the Corps declined to meet with representatives of the pipeline industry. Kinder Morgan's comments in this letter are intended to be as complete as possible given the lack of important details in the multi-volume DFR or DEIS and the Corps's refusal of the pipeline industry's request for additional

1

information and a more realistic comment period (120 days from the date of issue on December 24, 2009). Kinder Morgan reserves its rights to comment further upon receipt of additional information about the project.

The replacement of pipelines like Kinder Morgan's, that transport essential commodities such as natural gas and natural gas liquids, is not only costly, it also requires years of advance planning and coordination, and creates significant operational, engineering and environmental permitting burdens. Particularly in congested areas such as the Sabine Neches Waterway, where there are multiple pipelines owned by multiple companies, the relocation of a significant number of pipelines requires a comprehensive and coordinated planning process. Yet the DFR and DEIS provide little detail about the proposed project's impact on pipeline operations, which pipelines will need to be relocated, the depths and locations to which those pipelines will be relocated, how Corps permits for these pipeline relocations would be addressed, or how costs were estimated or projected for pipeline relocations. In fact, the DFR and DEIS appear to be based on a single spreadsheet, *dated September 30, 2005*, with what appears to be the Corps's working list of pipelines that may be impacted by the project. The engineering narrative (chapter 13 of the DFR Appendix) indicates that "relocated lines were assumed to be directionally drilled, and bundled when possible," but no detail is provided that would identify which pipelines were assumed to be bundled, or permit a reader to understand the logic – let alone the accuracy – of the Corps' feasibility and cost assumptions. Nor do the DFR and DEIS reflect any consideration of the lead time and expense required to obtain the permits required for the pipeline relocations, *e.g.*, environmental studies, environmental surveys, agency reviews and evaluations. 2

Finally, Kinder Morgan asks that the Corps reject the ongoing behind-the-scenes effort to circumvent the long-established federal law for 50/50 cost-sharing on pipeline relocations in deep-draft projects and declare its opposition to any change in the cost-sharing allocation. The SNWW project proposed by the Corps and the local sponsor has an authorized depth of 48 feet and so clearly constitutes a deep-draft project. Federal law (the Water Resources and Development Act of 1986, known as "WRDA 86") mandates that in all deep-draft projects, the costs of utility (pipelines) relocations must be DIVIDED EQUALLY between the pipeline owner and the local sponsor of the project. The Corps acknowledges this federal legal requirement in the "Cost Sharing" section of the DFR: "In accordance with Section 101(a)(4) of WRDA 86, 50 percent of deep-draft utility (pipeline) relocations would be borne by the utility owner and 50 percent would be borne by the non-Federal sponsor," *i.e.*, the Sabine Neches Navigation District (page XI-5). The campaign to sidestep WRDA 86 and shift costs to private industry ignores the fact that pipeline operations will not benefit from the project and will be forced, even under the 50/50 formula, to incur substantial out-of-pocket costs and relocation-related service interruptions. 3

Kinder Morgan respectfully requests that the Corps promptly: 4

1. definitively identify the Kinder Morgan pipelines that will be impacted by the project;
2. provide Kinder Morgan sufficient information to understand the Corps' estimate of the costs for removing or relocating each such pipeline;

3. provide Kinder Morgan with whatever additional documents or information are needed to understand the proposed project's impact on Kinder Morgan pipeline operations, including a projected timeline for when the relocations may actually be needed and how Corps permits would be addressed;
4. establish a working group or other appropriate method to bring the Corps and pipeline company representatives together to facilitate an information exchange; and
5. confirm that the cost-sharing requirement specified by WRDA 86 will be part of any Chief's Report or other report or recommendation the Corps makes regarding the project.

At your convenience, please contact me at the below telephone number.

Sincerely,

Dwayne Burton
Kinder Morgan Energy Partners, LP
Vice President, Operations and Engineering

713-369-9356 - office

Mr. Dwayne Burton
Vice President, Operations and Engineering
Kinder Morgan Energy Partners, LP
500 Dallas, Suite 1000
Houston, TX 77002

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period on the DFR and DEIS was extended an additional 30 days to March 12, 2010. USACE met with pipeline owners at an information meeting on January 25, 2011. More information on project features that could affect pipelines will be provided as detailed plans are developed during PED and Construction phases.
2	The FR provides sufficient information for feasibility-level planning. A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines should not be considered definitive. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. There will be sufficient time for pipeline companies to make necessary preparations after the project is approved. Each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. Relocating a pipeline and placing it deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the DOA permit.
3	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.
4	Please refer to USACE responses 1-3 above.

Stokes, Janelle S SWG

From: Keeter, Lori [LKeeter@eprod.com]
Sent: Friday, March 12, 2010 9:53 AM
To: Stokes, Janelle S SWG
Subject: Comments regarding DFR/DEIS for Proposed Sabine Neches Water Channel Improvement Project

Attachments: SNWW Project - Enterprise Comment Ltr 3-12-10.pdf; image001.jpg

SNWW Project - Enterprise Comm… image001.jpg

Ms. Stokes – Attached please find a letter from Enterprise Products Company (EPC) providing comments to the DFR and DEIS for the proposed Sabine Neches Waterway Channel Improvement Project. A hard copy of this letter is being sent to your attention via First-Class U.S. Mail.

Please contact me if you have any questions. Regards, Lori Keeter

Gloria L. (Lori) Keeter / Senior Manager / Land Department

PO Box 4324, Houston, TX 77210-4324

2727 North Loop West, Houston, TX 77008-1044

713.803.2555 office / 713.301.0665 cell / 713.803.2627 fax

PLEASE NOTE THAT MY EMAIL ADDRESS HAS CHANGED TO: glkeeter@eprod.com <mailto:glkeeter@epco.com>

EnterpriseProductsLogo.bmp

This message (including any attachments) is confidential and intended for a specific individual and purpose. If you are not the intended recipient, please notify the sender immediately and delete this message.

Enterprise Products

SENT VIA EMAIL TO Janelle.s.stokes@usace.army.mil AND FIRST-CLASS U.S. MAIL

March 12, 2010

U. S. Army Corps of Engineers
Galveston District
Attn: Ms. Janelle Stokes
P. O. Box 1229
Galveston, Texas 77553-1229

Re: Comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Enterprise Products Company ("EPC") is a pipeline company with facilities located within the project area of the proposed Sabine Neches Waterway ("SNWW") Channel Improvement Project (referenced herein as "SNWW Project").

The Enterprise family of companies is one of North America's largest midstream energy networks, providing services to producers and consumers of natural gas, natural gas liquids (NGLs), crude oil, refined products, liquefied petroleum gases (LPGs) and petrochemicals. The assets of the combined entities include more than 48,000 miles of onshore and offshore pipelines that gather and transport natural gas, NGLs, crude oil, petrochemicals, LPGs and refined products such as gasoline, diesel and jet fuel.

In late December 2009, EPC received correspondence inviting comments on the "Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation" (referenced herein collectively as "DEIS") and the Draft Feasibility Report (referenced herein as "DFR"). The deadline for comments on these reports is Friday, March 12, 2010.

EPC is diligently performing a review of the SNWW Project, and the following summarizes the ongoing activities. We have assembled a SNWW Project team comprised of corporate management, land, legal, regulatory, engineering, and operations department representatives. The EPC team is reviewing and analyzing the preliminary project plans and the limited information regarding existing pipeline river crossings in the DFR and DEIS.

The EPC team is also reviewing EPC pipeline asset records, and has identified pipeline facilities located in the SNWW Project area that may be effected by the proposed project. Approximately fifteen (15) EPC pipeline crossings ranging in size from 8-inch to 30-inch diameter have been identified as being located in the SNWW Project area. The Pipeline and Utility Table prepared by the U.S. Army Corps of Engineers ("COE") has tentatively identified six (6) EPC pipeline river crossings that may have to be relocated to accommodate the Project. Neches River pipeline crossing site visits and preliminary field survey reconnaissance operations have been conducted by EPC engineering and operations team representatives. Pipeline river crossing field survey and mapping operation plans are under development. A preliminary project composite base mapping system has been developed that is being utilized to composite and analyze EPC pipeline river crossing and SNWW Project information.

The purpose of this letter is to offer certain questions and comments regarding the DEIS and DFR.

1. Has a preliminary COE project schedule and project execution plan been developed? 1
2. Has a COE existing pipeline river crossing disposition evaluation plan and evaluation schedule been developed? 2
3. Has a COE existing pipeline river crossing relocation design and construction plan review and approval process been developed? 3
4. Since the project is designated in the DFR as a deep-draft harbor project, EPC requests a copy of the cost sharing and/or cost reimbursement plan that has been developed by the COE for pipeline relocation activities. Why hasn't the plan been made public as required by WRDA-86? 4
5. Has a pipeline relocation construction schedule and execution plan been developed? 5
6. Has COE developed any preliminary pipeline crossing relocation cost estimate information? 6
7. Have COE and other regulatory agency pipeline waterway crossing relocation permit requirements been determined and has the permit acquisition related time line been incorporated into the overall SNWW Project schedule? 7
8. Given the complexity of the relocations, has the COE factored into the time schedule the required logistics to coordinate multiple pipeline relocation construction operations between pipeline owners and operators? 8
9. Has the COE defined the location of all of the dredge disposal sites? The information provided for review is inadequate, and EPC requests more detailed information to determine effect on existing facilities. 9

Based upon the DFR, this project, as proposed, would be a deep-draft harbor project for cost sharing purposes under the Water Resources and Development Act of 1986. Under this law, half of the pipeline relocation costs for a deep-draft harbor project must be borne by the pipeline owner and the other half by the local sponsor of the project. Please confirm that this cost-sharing requirement will be part of any Chief's Report or other report or recommendation the Corps may make regarding the project. 10

The replacement of pipelines that transport essential commodities that EPC handles is costly and requires years of advance planning and coordination. A project such as this creates substantial operational and engineering burdens for an industry that has strategic significance for the American economy. In congested areas such as the Sabine Neches Waterway, the relocation of a significant number of pipelines must be preceded by a comprehensive and coordinated planning process. The DFR and DEIS provide little detail about the proposed project's impact on pipeline operations, which pipelines will need to be relocated, where those pipelines are located, or how costs were estimated for pipeline relocations. There also appears to have been no consideration of the lead time requirements and additional expense that will be required for planning and coordination in the instance of multiple simultaneous pipeline relocations.

EPC believes that it is important for the COE to meet with EPC representatives and other pipeline company representatives in order to address the numerous questions detailed herein and facilitate an exchange of information. However, EPC understands that the COE is refusing such a meeting. We do not understand how a lack of communication helps anyone in dealing with issues as complicated as pipeline relocations in an area as congested with pipeline operations as the Sabine Neches Waterway, and we respectfully request that the COE reconsider its position and allow an adequate opportunity for dialogue and for meaningful comment.

At your convenience, please contact Lori Keeter, Senior Land Manager, at 713-803-2555.

Very truly yours,

Delbert W. Fore

Delbert W. Fore
Vice President, Governmental Affairs

Mr. Delbert W. Fore
Vice President, Governmental Affairs
Enterprise Products
2727 North Loop West
Houston, TX 77008

RESPONSE TO COMMENTS

Comment No.	Response
1	A preliminary construction schedule has been developed (Engineering Appendix Addendum 2009, chapter 14.0 REVISED SCHEDULES FOR DESIGN AND CONSTRUCTION) and is available upon request. However, the actual time table for project construction is uncertain at this time because it is dependent upon ASA and OMB approval of the Chief's Report, Congressional authorization and Congressional appropriation of funds.
2	USACE has developed a preliminary pipeline river crossing evaluation plan. More information on project features that could affect pipelines will be provided as detailed plans are developed during the PED and Construction phases.
3	The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED or Construction phase, and decisions regarding relocations will be made individually for each pipeline at that time. For the feasibility study, it was assumed that existing pipelines would require, as a minimum, 5 feet of cover if the pipeline has been installed by directional drilling; or 8 feet of cover if it had been ditched/trenched and backfilled.
4	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.
5	During the PED and Construction phases, USACE will provide estimated construction contract start and end dates to pipeline owners as soon as they are available, so that owners can schedule their relocations as they see fit, ensuring completion of the relocation prior to the award of the contract for that portion of the channel.
6	The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor.
7	Potential environmental impacts of relocating the pipelines and replacing them at a deeper depth are assumed to be minimal. However, each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. Relocating a pipeline and placing it deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the DOA permit.
8	USACE will ensure that channel construction contractors work with pipeline companies as needed to accommodate all parties for a safe and effective working plan.
9	Yes, all locations of the dredge material placement areas have been defined and described in the FR/FEIS (FR Chapter VI; FEIS Section 2.4).
10	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.

Chevron

Global Gas

Dolores Barnhill
Senior VP, Asset Management

Chevron Pipe Line Company
4800 Fournace Place
Bellaire, TX 77401

March 12, 2010

U. S. Army Corps of Engineers
Galveston District
Attn: Ms. Janelle Stokes
P. O. Box 1229
Galveston, Texas 77553-1229

Re: Comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Chevron Pipe Line Company on its own behalf and on behalf of certain affiliated companies ("Chevron") operates pipeline assets that transport crude oil, petroleum products, liquefied petroleum gas, natural gas and chemicals within the United States and its territorial waters. Chevron has facilities located within the proposed Sabine Neches Waterway ("SNWW") Channel Improvement Project area, and to the extent possible has been diligently performing a review of the proposed project. We have assembled a team comprised of land, legal, environmental, engineering, and operations representatives that is reviewing the preliminary project plans and the limited information provided regarding impacts on existing pipeline river crossings.

With the time provided and limited pipeline specific data, Chevron is struggling to provide any meaningful comments by the specified deadline of March 12, 2010. A more realistic comment period would allow at least 120 days from the date of issue (December 24, 2009), and we therefore respectfully request that the comment period be extended to at least April 26, 2010. However, by receipt of this letter, Chevron offers initial comments on (1) the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation (collectively, the "DEIS") and (2) the Draft Feasibility Report for the proposed Sabine Neches Waterway Channel Improvement Project (the "DFR"). 1

The DFR and DEIS indicate that the proposed project may require a large number of pipeline relocations and removals, possibly at least four operated by Chevron, but we are

unaware of any ongoing efforts by any governmental agencies to coordinate the project's planning with pipeline owners and operators, even though it is common knowledge that pipelines significantly impact the proposed project area. The replacement of pipelines that transport essential commodities such as natural gas, natural gas liquids and chemicals is not only costly, it also requires years of advance planning and coordination, and creates significant operational, engineering and environmental permitting burdens. In congested areas such as the Sabine Neches Waterway, where there are multiple pipelines owned by multiple companies, the relocation of a significant number of pipelines requires a comprehensive and coordinated planning process.

The DFR and DEIS, however, provide little detail about the proposed project's impact on (1) pipeline operations, (2) horizontal and vertical pipeline relocations, or (4) methodology for relocation cost estimates. In fact, the DFR and DEIS appear to be based on a single spreadsheet, *dated September 30, 2005*, with what appears to be the Corps's working list of pipelines that may be impacted by the project. The engineering narrative (chapter 13 of the DFR Appendix) indicates that "relocated lines were assumed to be directionally drilled, and bundled when possible," but no detail is provided that would identify which pipelines were assumed to be bundled, or permit a reader to understand the accuracy of the Corps' feasibility and cost assumptions. The DFR and DEIS do not reflect any consideration for the lead time and expense required obtain the permits required for the pipeline relocations, *e.g.*, environmental studies, environmental surveys, agency reviews and evaluations.

Chevron respectfully requests that the Corps promptly:

1. definitively identify the Chevron pipelines that will be impacted by the project; 2
2. provide Chevron sufficient information to understand the Corps' estimate of the costs for removing or relocating each such pipeline; 3
3. provide Chevron with whatever additional documents or information are needed to understand the proposed project's impact on Chevron's pipeline operations, including a projected timeline for when the relocations may actually be needed and how Corps permits would be addressed; 4
4. establish a working group or other appropriate method to bring the Corps and pipeline company representatives together to facilitate an information exchange; and 5
5. confirm that the cost-sharing requirement specified by WRDA 86 will be part of any Chief's Report or other report or recommendation the Corps makes regarding the project. 6

At your convenience, please contact Rania Yacoub, at 713-432-3557.

Respectfully,

Dolores Barnhill

Ms. Delores Barnhill
Senior VP, Asset Management
Chevron Pipe Line Company
4800 Fournace Place
Bellaire, TX 77401

RESPONSE TO COMMENTS

Comment No.	Response
1	The comment period was extended an additional 30 days to March 12, 2010.
2	A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines should not be considered definitive. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time.
3	The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor.
4	A preliminary construction schedule has been developed (Engineering Appendix Addendum 2009, chapter 14.0 REVISED SCHEDULES FOR DESIGN AND CONSTRUCTION) and is available upon request. However, the actual time table for project construction is uncertain at this time because it is dependent upon ASA and OMB approval of the Chief's Report, Congressional authorization and Congressional appropriation of funds. Potential environmental impacts of relocating the pipelines and placing them at a deeper depth are assumed to be minimal. However, each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. Relocating a pipeline and placing it deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the DOA permit.
5	USACE met with pipeline owners at an information meeting on January 25, 2011. More information on project features that could affect pipelines will be provided as detailed plans are developed during PED and Construction phases.
6	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.

6207 Inwood Drive
Houston, TX 77057
713-622-7388 (ph)

Supplemental Written Comments by Texas Energy Coalition Regarding
Proposed Sabine-Neches Waterway Channel Improvement Project DFR

March 12, 2010

U. S. Army Corps of Engineers
Galveston District
Attn: Ms. Janelle Stokes [janelle.s.stokes@usace.army.mil]
P. O. Box 1229
Galveston, Texas 77553-1229

Re: Supplemental comments regarding DFR/DEIS for proposed Sabine-Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

I am writing once again on behalf of the Texas Energy Coalition, a group of pipeline transmission companies that collaborate on issues of common interest. In my letter of February 9, 2010, the Coalition offered certain preliminary comments regarding the DEIS and DFR for the proposed Sabine-Neches Waterway Channel Improvement Project. The Coalition also posed a number of requests, which I will restate in summary fashion.

First, the Coalition requested an extension of time up to and through April 26, 2010, in which to make comments. 1

We have not received any response to that request.

Second, the Coalition requested that the Corps identify all pipelines that will be impacted by the project, provide sufficient information to understand and respond to the Corps' estimate of the costs for removing or relocating each such pipeline, and provide whatever additional documents are needed to understand the proposed project's impact on pipeline operations, including a projected timeline for when the relocations may actually be needed.

Again, the Corps has made no response to these requests. 2

Third, the Coalition also requested that the Corps meet with the Coalition and pipeline company representatives as soon as possible to facilitate the exchange of information and to confirm that the cost-sharing requirements for deep-draft relocations set forth in WRDA-86 will be part of any Chief's Report or other report or recommendation the Corps may make regarding the project.

Yet again, the Corps has made no response to these requests. 3

The Corps' refusal to provide sufficient information to make a reasoned response to the DFR and DEIS on a project estimated to cost more than $1 billion is troubling. The Corps' persistent refusal to produce documents related to pipeline relocations on this project – coupled with its refusal even to meet with representatives of the pipeline industry regarding a project that is located in one of the nation's most concentrated areas of pipeline development – is even more troubling. 4

The Coalition sees no rational basis for the manner in which the DFR and DEIS for this project have been presented and objects to the lack of transparency in the process of seeking public input on the project.

The Coalition reserves the right to make additional comments if and when the Corps reconsiders its position on these issues. If you wish to discuss them, please contact Denis Calabrese (713-622-7388) or David Corban (713-651-5251).

Very truly yours,

Denis Calabrese
Spokesperson

Mr. Denis Calabrese
Texas Energy Coalition
6207 Inwood Drive
Houston, TX 77057

RESPONSE TO COMMENTS

Comment No.	Response
1	USACE posted notice that the comment period was extended an additional 30 days to 3-12-2010 on the USACE website at http://www.swg.usace.army.mil/pao/Docs/ExtensionofPublicCommentPeriodtoMarch12.pdf on February 8, 2010.
2	A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines should not be considered definitive. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. There will be sufficient time for pipeline companies to make all of the necessary preparations after the project is approved. The USACE feasibility study estimate of pipeline relocation costs was developed by USACE to estimate the fully funded cost allocation between USACE and the non-Federal sponsor.
3	USACE met with pipeline owners at an information meeting on January 25, 2011. Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.
4	See USACE responses to Comments 2 and 3 above.

Colonial Pipeline Company

Sam Whitehead
Government Affairs Manager

Phone: 678/762-2333
Fax: 678/762-2465
swhitehe@colpipe.com

SENT VIA EMAIL TO Janelle.s.stokes@usace.army.mil

March 12, 2010

U. S. Army Corps of Engineers
Galveston District
Attn: Ms. Janelle Stokes
P. O. Box 1229
Galveston, Texas 77553-1229

Re: Comments regarding DFR/DEIS for proposed Sabine Neches Waterway Channel Improvement Project

Dear Ms. Stokes:

Colonial Pipeline Company has two pipelines within the project area of the proposed Sabine Neches Waterway ("SNWW") Channel Improvement Project. Each day, these two pipelines transport an average of 100 million gallons of gasoline, diesel fuels and national defense fuels to shipper terminals in 12 states and the District of Columbia.

I write today to comment on the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana and the Draft Environmental Impact Statement Sabine-Neches Waterway Channel Improvement Project, Texas Ocean Dredged Material Disposal Sites Designation (collectively, the "DEIS") and the Draft Feasibility Report for the proposed Sabine Neches Waterway Channel Improvement Project (the "DFR").

The DFR and DEIS indicate that the proposed project will require a large number of pipeline relocations and removals, possibly including the two owned by Colonial Pipeline Company. However, the documents outlined above offer very little information as to the impact to our pipelines, in terms of both operations and financial costs. As you are aware, the replacement of pipelines that transport essential commodities, such as refined petroleum products in Colonial's case, requires significant planning and coordination, and creates operational, engineering and environmental permitting burdens. In addition, the DFR nor DEIS reflect any consideration of the lead time and expense required to obtain the permits for the pipeline relocations.

At this time, it is difficult for Colonial to comment on the impact of the project. The DEIS and DFR are almost silent in respect to the impact of the project on energy infrastructure and

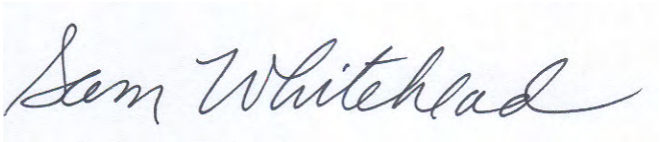
production facilities. This is despite more than 50 pipelines potentially being impacted. While we understand the basic project scope is to deepen and widen the Sabine Neches Waterway in order to accommodate larger ships, we do not have a clear understanding of the project scope and the impact of those plans on pipeline infrastructure because of the lack of detail in the Corps' documents. 1

We would hope the Corps would be willing to meet with representatives of Colonial, and the pipeline industry, to discuss important issues related to the project. This will help us determine the potential impact to our facilities and what steps need to be taken in order to plan and implement any facility relocations or removal of those facilities. 2

Further, we feel it is important to comment on the federal law that calls for the equal sharing of costs during projects of this nature. The Corps has also acknowledged this federal legal requirement in the "Cost Sharing" section of the DFR: "In accordance with Section 101(a)(4) of the Water Resources and Development Act of 1986, known as "WRDA 86", 50 percent of deep-draft utility (pipeline) relocations would be borne by the utility owner and 50 percent would be borne by the non-Federal sponsor," *i.e.,* the Sabine Neches Navigation District (page XI-5). It is our understanding that there has been some effort to circumvent this long-established federal law. We would formally request that the Corps declare its opposition to any change in the cost-sharing allocation. 3

Colonial Pipeline Company asks that you establish a working group or other appropriate method to bring the Corps and pipeline company representatives together to facilitate an information exchange; and confirm that the cost-sharing requirement specified by WRDA 86 will be part of any Chief's Report or other report or recommendation the Corps makes regarding the project.

Sincerely,



Sam Whitehead

Mr. Sam Whitehead
Government Affairs Manager
Colonial Pipeline Company
1185 Sanctuary Parkway, Suite 100
Alpharetta, GA 30009-4765

RESPONSE TO COMMENTS

Comment No.	Response
1	The FR provides sufficient information for feasibility-level planning. A list of potentially affected pipelines was provided to pipeline companies during the DEIS public comment period. The USACE list of potentially affected pipelines should not be considered definitive. The individual circumstances of each pipeline will be evaluated by USACE in consultation with the non-Federal sponsor and the pipeline owner during the PED and Construction phases, and decisions regarding necessary actions will be made individually for each pipeline at that time. There will be sufficient time for pipeline companies to make necessary preparations after the project is approved. Each pipeline relocation is case specific, and coordination with USACE-Galveston Regulatory Branch would be required in each case. Relocating a pipeline and placing it deeper would not necessarily require a new permit. If a pipeline is being moved to a new location, then the impacts would be evaluated by the environmental assessment performed in conjunction with the DOA permit.
2	USACE met with pipeline owners at an information meeting on January 25, 2011. More information on project features that could affect pipelines will be provided as detailed plans are developed during PED and Construction phases.
3	Please see Section 2.4.1.12 of this FEIS for a discussion of the allocation of pipeline relocation costs.

Appendix A6

Tribal Coordination

April 7, 2003

Environmental Section

Mr. Earl Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe
P.O. Box 331
Marksville, Louisiana 71351

Dear Mr. Barbry:

The Corps of Engineers, Galveston District, in cooperation with the Jefferson County Waterway and Navigation District, is planning on making improvements to the Sabine/Neches Waterway in Jefferson and Orange Counties, Texas and Cameron Parish, Louisiana. These plans consist in widening and deepening the channel from the city of Beaumont to the end of the waterway in the Gulf of Mexico as shown on the attached map. All construction will be confined to the existing channel. Dredge material placement will occur, either in existing placement areas along the channel, the Gulf of Mexico or in Sabine Lake. As you will notice the study area marked on the enclosed map extends well outside the area of construction. This larger area marks places where the project team considered secondary effects such as saltwater intrusion into the coastal marshes.

As required under Section 106 of the National Historic Preservation Act 36CFR Part 800.3(f)(2) we are contacting you to determine if your tribe can assist us in identifying any historic properties or areas of religious and cultural interest in the project area. Your help in identifying such properties will be greatly appreciated.

Thank you for your cooperation in this matter. If you have any questions regarding this project, please contact Ms. Janelle Stokes, Galveston District Tribal Coordinator, at (409)766-3039.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosure

IDENTICAL LETTER SENT TO ADDRESSEES ON ATTACHED LIST

RGM
for MURPHY
PE-PR

IDENTICAL LETTER SENT TO:

Mr. Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

RET TO
PE-PR

Ms. LaRue Parker, Chairman
Caddo Indian Tribe of Oklahoma
P.O. Box 487
Binger, OK

MAIL

Mr. Tarpie Yargee, Chief
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, Oklahoma 74883

Leland Thompson
Cultural Resource Coordinator
Coushatta Indian Tribe
P.O. Box 967
Elton, LA 70532

Mr. Earl Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe
P.O. Box 331
Marksville, LA 71351

CF w/o Encl:
PE-PR, Ms. Stokes

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
FEBRUARY 7, 2007

Environmental Section

Mr. Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe
P.O. Box 331
Marksville, LA 71351

Dear Mr. Barbry:

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan. A full description and maps of the proposed channel improvements can be found in the enclosed Background Report (Enclosure 1).

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6(c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure 1). The four parties include the USACE, the Jefferson County Waterways and Navigation District (JCWND) and the Texas and Louisiana State Historic Preservation Officers (SHPOs) The draft PA will also be coordinated with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Attached, as Enclosure 2, is a draft PA prepared by the USACE that has been informally coordinated with the JCWND. The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging and placement activities related to the SNWW CIP.

As required under Section 106 of the National Historic Preservation Act 36 CFR Part 800.3(f)(2) we are contacting you to determine if your tribe can assist us in identifying any historic properties or areas of religious and cultural interest in the project area. Your help in identifying such properties will be greatly appreciated.

Thank you for your cooperation in this matter. If you have any questions regarding this project, please contact Ms. Nicole Cooper Minnichbach, Galveston District Archeologist, at (409)766-3878.

Sincerely,

for Carolyn Murphy
Chief, Environmental Section

Enclosures
1 Background Report
2 Draft Programmatic Agreement

IDENTICAL LETTER SENT TO ADDRESSEES ON ATTACHED LIST

IDENTICAL LETTERS SENT TO:

Mr. Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

Ms. LaRue Martin Parker, Chairperson
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Mr. Tarpie Yargee, Chief
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

Mr. Leland Thompson
Cultural Resource Coordinator
Coushatta Indian Tribe
P.O. Box 967
Elton, LA 70532

Mr. Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe
P.O. Box 331
Marksville, LA 71351

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229
MARCH 7, 2007

Environmental Section

Ms. Beryl Battise
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, TX 77351

Dear Ms. Battise:

The US Army Corps of Engineers, Galveston District (USACE), proposes to initiate a Programmatic Agreement (PA) to avoid and mitigate, if necessary, impacts to historic properties that may occur during construction and operation of the Sabine-Neches Waterway Channel Improvement Project (SNWW CIP). The SNWW CIP includes improvements to the existing navigation channel, a Dredged Material Management Plan (DMMP) and an ecological impacts mitigation plan. A full description and maps of the proposed channel improvements can be found in the enclosed Background Report (Enclosure 1).

The USACE proposes negotiation of a four-party PA which outlines procedures to be followed for Section 106 compliance as per 36 CFR 800.6(c) to address potential impacts to historic properties identified in the Background Report for the SNWW CIP project area (Enclosure 1). The four parties include the USACE, the Jefferson County Waterways and Navigation District (JCWND) and the Texas and Louisiana State Historic Preservation Officers (SHPOs) The draft PA will also be coordinated with interested Native American Indian tribes in accordance with 36 CFR 800.3 (f)(2). Attached, as Enclosure 2, is a draft PA prepared by the USACE that has been informally coordinated with the JCWND. The intent of the PA is to avoid or mitigate impacts to historic properties in areas directly affected by new dredging and channel construction, construction staging and access areas, extensions of existing placement areas, ecological mitigation features, areas affected by the beneficial uses of dredged material, and ongoing maintenance dredging and placement activities related to the SNWW CIP.

As required under Section 106 of the National Historic Preservation Act 36 CFR Part 800.3(f)(2) we are contacting you to determine if your tribe can assist us in identifying any historic properties or areas of religious and cultural interest in the project area. Your help in identifying such properties will be greatly appreciated.

Thank you for your cooperation in this matter. If you have any questions regarding this project, please contact Ms. Nicole Cooper Minnichbach, Galveston District Archeologist, at (409)766-3878.

Sincerely,

Carolyn Murphy
Chief, Environmental Section

Enclosures
1 Background Report
2 Draft Programmatic Agreement

Ms. Janelle Stokes
CESWG-PE-PR

Ms. Nikki Minnichbach
CESWG-PE-PR

IDENTICAL LETTER SENT TO ADDRESSEES ON ATTACHED LIST

IDENTICAL LETTERS SENT TO:

Mr. Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

Ms. LaRue Martin Parker, Chairperson
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Mr. Tarpie Yargee, Chief
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

Mr. Leland Thompson
Cultural Resource Coordinator
Coushatta Indian Tribe
P.O. Box 967
Elton, LA 70532

Mr. Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe
P.O. Box 331
Marksville, LA 71351

Stokes, Janelle S SWG

From: Bryant J. Celestine [celestine.bryant@actribe.org]
Sent: Friday, February 26, 2010 11:32 AM
To: Stokes, Janelle S SWG
Subject: Sabine-Neches Waterway DEIS

Dear Ms. Stokes:

On behalf of Mikko Oscola Clayton Sylestine and the Alabama-Coushatta Tribe, our appreciation is expressed on your efforts to consult us regarding the Draft Environmental Impact Statement for the Sabine-Neches Waterway Channel Improvement Project.

Our Tribe maintains ancestral associations throughout the state of Texas and Louisiana despite the absence of written documentation to completely identify Tribal activities, villages, trails, or religious sites. However, it is our objective to ensure significances of Native American ancestry, especially of the Alabama-Coushatta Tribe, are administered with the utmost considerations.

Upon review of the December 18, 2009 materials, no impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas should occur in conjunction with this proposal. However, in the event of inadvertent discovery of human remains and/or archaeological resources, activity in proximity to the location must cease and appropriate authorities, including this office, notified without delay. 1

Should you require further assistance, please do not hesitate to contact us.

Sincerely,

Bryant J. Celestine
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, Texas 77351
936 - 563 - 1181
celestine.bryant@actribe.org

Mr. Bryant J. Celestine
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, TX 77351

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank you for reviewing the proposed Sabine-Neches Waterway Channel Improvement Project for potential impacts to tribal resources. The Alabama-Coushatta Tribe of Texas will be contacted in the event of an inadvertent discovery of human remains or archeological resources as required by Stipulations II and IV of the Historic Properties Programmatic Agreement (Final Environmental Impact Statement Appendix H).

Appendix B

Ocean Dredged Material Disposal Sites
Final Environmental Impact Statement

Document No. 050232
PBS&J Job No. 100007609

ENVIRONMENTAL IMPACT STATEMENT
SABINE-NECHES WATERWAY
CHANNEL IMPROVEMENT PROJECT, TEXAS
OCEAN DREDGED MATERIAL DISPOSAL SITE DESIGNATION

Prepared for:

U.S. Army Corps of Engineers
Galveston District
2000 Fort Point Road
Galveston, Texas 77550

Prepared by:

PBS&J
6504 Bridge Point Parkway
Suite 200
Austin, Texas 78730

June 2010

Printed on recycled paper

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Acronyms and Abbreviations

°F	degrees Fahrenheit
BEG	Bureau of Economic Geology
BU	beneficial use
BV&A	Barry A. Vittor & Associates
CFR	Code of Federal Regulations
CIP	Channel Improvement Project
cm/sec	centimeters per second
cy	cubic yards
CZM	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
DMF	Dredged Material Fate
DMMP	Dredged Material Management Plan
DO	dissolved oxygen
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERL	Effects Range Low
FDA	U.S. Food and Drug Administration
FEIS	Final Environmental Impact Statement
FR	Federal Register
FWPCA	Federal Water Pollution Control Act
g/m^2	gram/square meter
GIWW	Gulf Intracoastal Waterway
mcy	million cubic yards
mg/L	milligrams per liter
MLLW	mean lower low water
MMS	Minerals Management Service
mph	miles per hour
MPRSA	Marine Protection, Research and Sanctuaries Act of 1972
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWR	National Wildlife Refuge
ODMDS	Ocean Dredged Material Disposal Site
PA	placement area
RSM	Regional Sediment Management
SAI	Science Applications, Inc.
SH	State Highway
SHPO	State Historic Preservation Officer

SNWW	Sabine-Neches Waterway
SP	solid phase
SPP	suspended particulate phase
TOC	total organic carbon
TPNWR	Texas Point National Wildlife Refuge
TPWD	Texas Parks and Wildlife Department
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WQC	Water Quality Criteria
ZSF	Zone of Siting Feasibility

1.0 PURPOSE AND NEED FOR THE ACTION

1.1 INTRODUCTION

The existing Federal project deep-draft channel (Figure 1-1), with a total length of roughly 65 miles, was first authorized to a depth of 25 feet in 1912 (Rivers and Harbor Act of July 25, 1912). It was deepened to 30 feet in 1922, 34 feet in 1935, 36 feet in 1946, and authorized to the present 40 feet in 1962 (Rivers and Harbor Act of October 23, 1962), although construction ran from 1965 to 1972. It extends from about a mile upstream of the Beaumont Turning Basin to the 42-foot contour in the Gulf of Mexico (Gulf). Bottom widths are 800 feet in the Entrance Channel, narrowing to 500 feet at the inland portion of the Jetty Channel, the Sabine Pass Channel, the Port Arthur Canal, the Sabine-Neches Canal, and 400 feet to the Beaumont Turning Basin.

As part of the National Environmental Policy Act (NEPA) process for the Sabine-Neches Waterway (SNWW) Channel Improvement Project (CIP), the U.S. Environmental Protection Agency (EPA), as a cooperating agency, is proposing to designate one or more Ocean Dredged Material Disposal Sites (ODMDSs) for placement of the construction and maintenance dredged material from an extension of the SNWW, roughly 13.2 miles farther into the Gulf. As part of the process, the existing ODMDSs will be examined for capacity and compatibility with the construction material and the greater quantity of maintenance material associated with the larger and deeper existing offshore channel. This ODMDS Designation Final Environmental Impact Statement (FEIS) was circulated for review with, and as part of, the FEIS for the SNWW CIP. Table 1-1 presents the quantities of dredged maintenance material from the existing and proposed channels and the construction (new work) material anticipated from the proposed SNWW CIP.

EPA's action for which this document was prepared is the designation of a site or sites for the ocean placement of new work (construction) material to be dredged from the SNWW Entrance Channel and Extension, and future maintenance material from the 13.2-mile SNWW Entrance Channel Extension. An FEIS for the maintenance dredging of the SNWW Entrance Channel (for the authorized 40-Foot Project [42 feet in the Entrance Channel]), was prepared by the U.S. Army Corps of Engineers (USACE, 1975). Four offshore sites are currently in use for the existing channel. These sites were designated by EPA for the continued placement of dredged material removed from the SNWW Entrance Channel (Federal Register [FR] Vol. 52, No. 175, September 10, 1987, page 34218; FEIS, 1983 [EPA, 1983a]). This Environmental Impact Statement (EIS) for the proposed new ODMDSs is included as an appendix to the Integrated Feasibility Report/EIS for the SNWW CIP. The purpose of EPA's action is to designate, based on 40 Code of Federal Regulations (CFR) 228, ocean disposal sites that would provide environmentally acceptable and economically and physically feasible areas for the placement of the construction material from the SNWW Entrance Channel and future maintenance material from the Entrance Channel Extension for the SNWW CIP.

Table 1-1

Existing and Proposed Entrance Channel Ocean Dredged Material Disposal Site Quantities

New Work Material

PA	Contributing Channel Channel Station		Existing Project	Proposed Project Quantity[1] (cy)	
4	-214+88	0+00	Not Applicable	2,978,000	
3	0+000	18+000	Not Applicable	5,923,000	
2	18+000	53+000	Not Applicable	7,051,000	
1	53+000	95+734	Not Applicable	8,307,000	
				24,259,000	Total
A	95+734	114+000	Not Applicable	4,592,000	
B	114+000	132+000	Not Applicable	5,296,000	
C	132+000	150+500	Not Applicable	4,648,000	
D	150+500	165+443	Not Applicable	4,201,000	
				18,737,000	Total

Maintenance Material

PA	Contributing Channel Channel Station		Frequency (years)	Existing Project Quantity per year[2] (cy)	Existing Project Quantity per cycle (cy)	Proposed Project Quantity per year (cy)	Proposed Project Quantity per cycle[1] (cy)	
4	0+00	-214+88	5	227,700	1,138,500	270,540	1,352,700	
3	0+00	18+000	1	1,993,700	1,993,700	4,473,000	4,473,000	
2	18+000	53+000	4	430,600	1,722,400	1,565,500	3,131,000	
1	53+000	95+734	4	628,200	2,512,800	377,000	1,508,000	
				3,280,200	7,367,400	6,686,040	10,464,700	Totals
					164,010,000		334,302,000	Total per 50 years[3]
A	95+734	114+000	4		Not Applicable	197,750	791,000	
B	114+000	132+000	4		Not Applicable	194,750	779,000	
C	132+000	150+500	4		Not Applicable	200,250	801,000	
D	150+500	165+443	4		Not Applicable	161,750	647,000	
						754,500	3,018,000	Totals
							37,725,000	Total per 50 years[3]

[1] From USACE SNWW CIP Engineering Appendix

[2] Based on historic data for maintenance material going into PA 1, the farthest offshore of the existing ODMDSs.

[3] These numbers are slightly larger than the 50-year Dredged Material Management Plan summary table because they include two additional years of material for reaches with 4-year cycles.

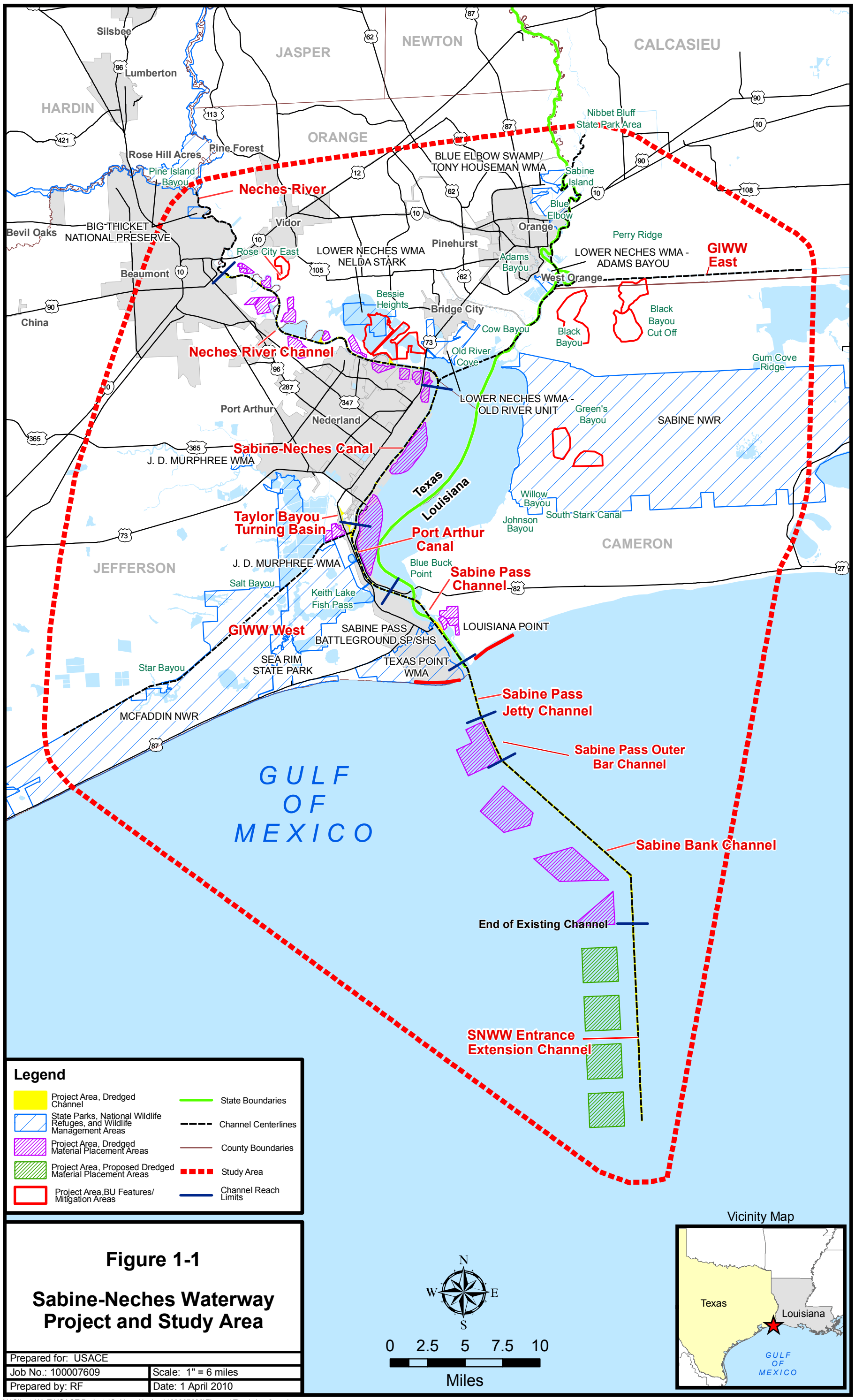

Figure 1-1

Sabine-Neches Waterway Project and Study Area

Prepared for: USACE	
Job No.: 100007609	Scale: 1" = 6 miles
Prepared by: RF	Date: 1 April 2010

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1.2 LEGISLATIVE BACKGROUND AND PROPOSED ACTION

Ocean disposal of dredged material was not specifically regulated in the United States until passage of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA). Limited regulation was provided by the Supervisors' Act of 1888 and the Refuse Act of 1899. Under these acts, transportation and navigation factors, rather than environmental considerations, guided selection of placement locations by the USACE and the issuance of permits for ocean disposal.

Although the Fish and Wildlife Coordination Act of 1958 initially referred to inland tidal waters, it included consideration of the effects of dredged material on commercially important marine species. This act, together with subsequent judicial decisions, empowered the USACE to refuse permits if the dredging or filling of a bay or estuary would result in significant, unavoidable damage to the marine ecosystem.

MPRSA and the Federal Water Pollution Control Act (FWPCA), later amended by the Clean Water Act of 1977, both passed in 1972 and specifically addressed waste disposal in the aquatic and the marine environment. The FWPCA and the Water Quality Improvement Act of 1970 set up specific water quality criteria to be used as guidelines in controlling discharges into marine and aquatic environments. These water quality criteria applied to placement of dredged material only in cases where fixed pipelines were used to transport and discharge dredged material into the environment at discrete points. MPRSA, however, specifically regulates the transport and ultimate disposal of waste materials in the ocean. Under Title I of MPRSA, the primary regulatory vehicle of the act, a permit program for the disposal of dredged and nondredged materials was established that mandates determination of impacts and provides for enforcement of permit conditions.

The August 1975 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (Convention) is the principal international agreement governing ocean dumping. The Convention specifies that contracting nations will regulate disposal in the marine environment within their jurisdiction, disallowing all disposal without permits. The nature and quantities of all waste material and the circumstances of disposal must be periodically reported to the International Maritime Organization (formerly the Inter-Governmental Maritime Consultative Organization), which administers the Convention.

In October 1973, the EPA issued the final Ocean Dumping Regulations and Criteria (the Regulations, or Ocean Dumping Regulations), revised in January 1977 (40 CFR Parts 220 to 229). These regulations established procedures and criteria for review of ocean disposal permit applications (Part 227), assessment of impacts of ocean disposal and alternative disposal methods, enforcement of permits, and designation and management of ocean disposal sites (Part 228). They also established procedures by which the EPA is authorized to designate ODMDSs and times for ocean disposal of acceptable materials under Section 102(c) of the MPRSA and the criteria for site designation, including general and specific criteria for site selection.

1.3 U.S. ARMY CORPS OF ENGINEERS

The USACE is mandated by the U.S. Congress to maintain (i.e., remove accumulated sediment) authorized navigation channels in the navigable waters of the United States on an ongoing basis. The material thus removed (maintenance material) must subsequently be discharged. The USACE was authorized by the U.S. Senate in 2000 to begin investigating the feasibility of modifying the SNWW in the interests of commercial navigation. The FEIS for the SNWW CIP, to which this ODMDS Designation FEIS is attached, is the culmination of that authorization. To continue to maintain the Nation's waterways and to construct projects authorized by Congress, the USACE considers it essential that environmentally acceptable ocean disposal sites be identified, evaluated, and designated for continued or one-time use pursuant to Section 102(c) of MPRSA. Section 103 of MPRSA requires the USACE to consider the effects of ocean disposal of dredged material on human health, welfare, amenities, the marine environment, ecological systems, and economic potentialities in its evaluation of Federal projects and Section 103 permit applications.

The existing SNWW project provides deep-draft access from the Gulf to the cities of Beaumont, Port Arthur, and Orange. Entrance from the Gulf is provided by a jettied channel at Sabine Pass. The Entrance Channel, comprising the Sabine Bank Channel and the Outer Bar Channel, provides for a project depth of 42 feet over a channel bottom width of 800 feet and extends roughly 18.1 miles into the Gulf (see Figure 1-1). The proposed Entrance Channel Extension for the SNWW proposed 48-foot CIP has a depth of 50 feet and would extend approximately 13.2 miles farther into the Gulf than the present channel. The channel reach immediately outside of the jetties at the Sabine Pass Outer Bar Channel is proposed to be 800 feet wide; the remainder of the Entrance Channel through its terminus in the Gulf is proposed to be 700 feet wide.

1.4 U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA is mandated with the authority to regulate ocean dumping and with the responsibility for site designation, monitoring, and management by Congress as stated specifically in 40 CFR 228.4(e)(1). The EPA has been requested by the USACE to designate an ocean disposal site(s) for the placement of construction and maintenance material from the SNWW CIP. While EPA is a member of the Interagency Coordination Team and is reviewing and commenting on the navigation project, EPA is not advocating expansion of the waterway. EPA is a cooperating agency insofar as it is responsible for designating ocean dumping sites according to Section 102 of the MPRSA, and such sites may be necessary for construction and maintenance of the SNWW 48-Foot Project.

Site designation by EPA does not authorize any dredging project nor does it permit disposal of any dredged material. Sites are designated in areas where a need for ocean disposal has been indicated, based on past dredging demands and/or projected demands associated with new or expanded projects. However, site designation does not in and of itself preclude the consideration of other placement options, including beneficial use options or the no action alternative. Once designated as an approved ocean disposal site, the

appropriateness of ocean disposal is determined on a case-by-case basis in accordance with the ocean dumping criteria. For instance, the fuel costs cited as precluding some of the beneficial use options (Section 2.3.2.1) could change in the future or alternative transportation options might make beneficial use options more viable in the future. If so, those options can be considered at that time.

1.5 COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act (CZM) of 1972, as amended (16 USC 1451 et seq.), states in Section 307 (1) (A) "Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs." Both Texas and Louisiana have developed Coastal Zone Management Plans (CZMPs), which have been approved by the National Oceanic and Atmospheric Administration (NOAA), the designee of the Secretary of Commerce for CZMP approval. This FEIS addresses consistency with these Plans by assessing impacts to critical coastal zone habitats and resources, as presented in Appendix I to the SNWW CIP FEIS.

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2.0 ALTERNATIVES

2.1 NO-ACTION ALTERNATIVE

The No-Action Alternative entails that the EPA refrain from designating new ODMDSs for the placement of 18.7 million cubic yards (mcy) of virgin (construction or new work) material from the SNWW Entrance Channel Extension during construction and 37.7 mcy of maintenance material over the 50-year life of the project. While modeling has shown (Section 2.3.4.2) that the existing ODMDSs are of sufficient size to contain both virgin and maintenance material from the Entrance Channel and the Extension, they are designated only for dredged material from the SNWW Entrance Channel (EPA, 1983a) and, therefore, could not be used for the material from the proposed Entrance Channel Extension without modification to the designation. Even if designation were to be modified to allow placement of Extension material at the existing ODMDSs, the cost of transporting the construction and maintenance material from the Extension to the existing ODMDSs would be prohibitive (Section 2.3.4.1.1). Without ODMDS designation or designation modification, use of upland placement areas (PAs) would be required, which would greatly increase dredging costs because of double handling and the long distances involved in transporting the dredged material from offshore. The economic benefits of the navigation improvements would not be sufficient to justify the higher costs. Therefore, in the absence of Federal action to designate new ODMDSs for the 48-Foot Project, the existing Federal project would continue to be maintained at its current dimensions and dredged material would be disposed in compliance with the applicable Dredged Material Management Plan (DMMP). Maintenance material from the Entrance Channel would continue to be placed in existing ODMDSs 1–4. Foregoing navigation improvements to the SNWW would have the following impacts: (1) long-term increases in transportation costs to navigation relative to those that would result from project implementation; (2) loss of potential for increased channel usage, since a widened channel would permit limited two-way traffic; and (3) decreased safety in the segment of the channel south of Port Arthur that is proposed for widening. Therefore, the No-Action Alternative is not considered viable.

2.2 NONOCEAN DISPOSAL

Dredged material placement alternatives evaluated in this document consist of upland placement, beneficial use, and ocean placement. Alternate dredging methods include the use of dipper dredges, ladder dredges, and bucket dredges. However, through the years, only hopper dredges and cutterhead suction pipeline dredges have proved to be both safe and efficient for nearshore and offshore use, and hopper dredges are preferred for offshore dredging. A review of the status of the dredging industry to the present confirms that the hopper dredge is still the most economical and feasible means for dredging at sea, although beneficial uses of the nearer-shore dredged material would require the use of a pipeline dredge. Material would have to be transported on a hopper dredge with pumpout capabilities from 20 to 38 additional miles back to the mainland, which would require mooring and connecting to the discharge pipe for each load of dredged material. The technology of the other forms of dredging has not progressed

sufficiently to be suitable alternatives to hopper dredging. Relative to land-based areas in lieu of ocean placement, the USACE has determined that no suitable land-based areas exist that have sufficient capacity and that the costs of transport are uneconomical. The nearest available land placement area (PA 5) is 38 miles away from the seaward end of the project and is not large enough to accommodate the anticipated volume of offshore construction and maintenance material. PA 5 is also needed for future maintenance of the Sabine Pass Channel. Therefore, use of this site for offshore construction material, in addition to being economically unfeasible, would require the acquisition of new areas for placement of construction and routine maintenance material from the inland portions of the channel. Since the surrounding land areas are wetlands or chenier habitats, it is not likely that a suitably sized replacement area could be obtained without a significant loss of quality habitat. A land-based alternative would therefore offer no environmental benefit to ocean placement.

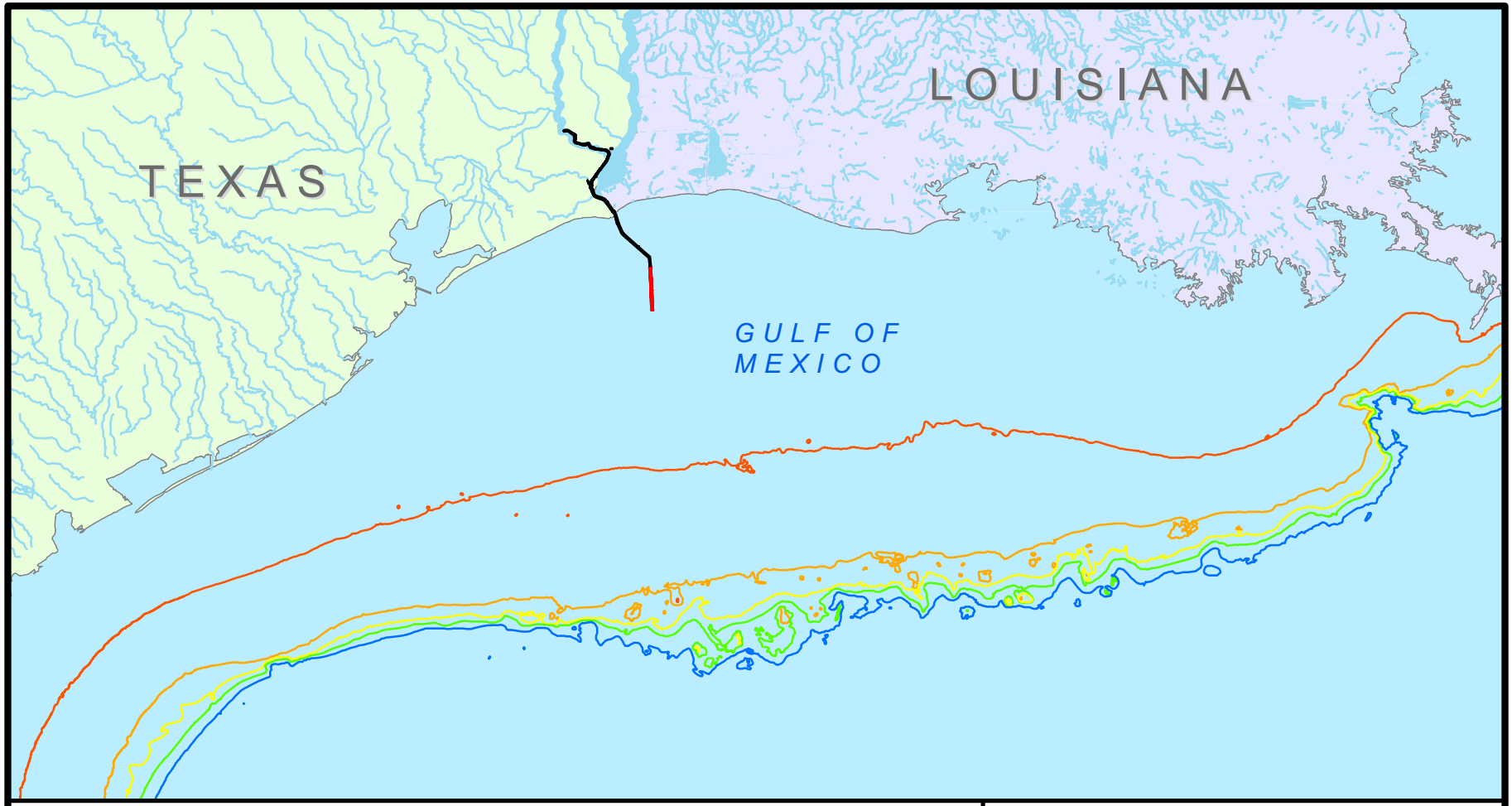
After a review of the options, it is concluded that for this project, land-based alternatives offer no environmental or economical advantages over placement of construction and maintenance material in the ocean. Further, the current methods of dredging and placement are still considered to be both environmentally and economically viable. All alternatives, including the No-Action Alternative, have consequences associated with them.

2.3 OCEAN DISPOSAL

Potential placement sites were evaluated in the nearshore environment, the mid-shelf, and the continental slope. Additional alternatives in the nearshore environment were examined.

2.3.1 Mid-Shelf and Continental Slope Alternatives

The Continental Shelf off Sabine Pass extends from the 20-meter isobath to 200-meter isobath and, thus, from roughly 40 to 130 miles offshore (Figure 2-1). A placement site located in the mid-shelf area would be 60 to 70 miles offshore in 90 to 110 feet of water. A straightforward computer analysis of two dredging scenarios, assuming nothing changes except transport distance, will demonstrate that an increase in transport distance from 1 to 10 miles increases the cost of dredging on a per-cubic-yard basis by a factor of 2.5. EPA (1983b) notes an increase of $0.15/cubic yards (cy)/mile of transport distance for disposal at a mid-shelf site off Tampa Bay, Florida. Since fuel costs have skyrocketed since 1983, this value is very low. The value of $0.15/cy/mile, noted above, would be $0.29/cy/mile, if adjusted for inflation (ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt). Using a value of $0.29/cy/mile, the construction material quantities provided in Table 2-1, and the average locations of the proposed Extension ODMDSs, as given in Section 3.2.1 (which would require an average increase in distance offshore of 39.5 miles to get to a mid-shelf site), the incremental increase in the cost for construction dredging would be approximately $215,000,000. This increase would make it impossible to economically justify the SNWW CIP. Additionally, safety risks increase and the feasibility of monitoring and surveillance are decreased with increasing distance offshore.



Bathymetry Contours
(depth in m)

- -40
- -100
- -150
- -200
- -300

- Existing Channel
- Proposed Channel

N
W E
S

50 25 0 50
Miles

Figure 2-1

GULF OF MEXICO BATHYMETRY

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Job No.: 441206.00	Scale: 1 inch = 50 miles
Prepared by: EMons/RCoop	Date: 03/09/2007
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The Ocean Dumping Regulations (40 CFR 228.5(e)) state that whenever feasible, a site beyond the edge of the Continental Shelf will be chosen. The edge of the Continental Shelf is defined as that area where there is a significant increase in the vertical/horizontal gradient, indicating the beginning of the continental slope. In the western Gulf, the 200-meter isobath is fairly indicative of the shelf/slope break and is plotted on Figure 2-1. Off Sabine Pass, the Continental Shelf/slope break is approximately 130 miles offshore, at the widest segment of the Continental Shelf in the northern Gulf.

Pequegnat et al. (1978) examined the potential impacts of deepwater disposal, e.g., at a site on the slope. They note that the increased depth would provide greater volumes of water for dilution and dispersal before the dredged material impacts the ocean floor. They also note (1) the relative paucity of benthos in deeper water and (2) the fact that the value of organisms from the truly deep ocean floor (greater than 1,000 meters depth) are not important to world fisheries. However, EPA (1983a) cites several sources for the fact that although there may be fewer organisms in the deeper waters of a slope site, the relative impact of burial by dredged material would be much greater than to shallow-water benthic organisms because deep-water organisms are not adapted to survival under conditions where temporary burial by resuspended sediments is common. Additionally, the concerns with cost, safety, and monitoring and surveillance, noted above for a mid-shelf site, would be greater for a continental slope site. There are also no data to indicate that such sites would offer any environmental benefit over a nearshore site. Therefore, because of inordinate cost, increased safety problems, and lack of environmental benefits, the mid-shelf and continental slope sites have been eliminated from further alternative analysis.

2.3.2 Nearshore Alternatives

2.3.2.1 Beneficial Uses

The use of the dredged material from construction of the 48-Foot Project has been evaluated for marsh restoration and beach nourishment, and, as feasible, construction and maintenance material would be used beneficially. However, it should be noted that while this applies to the nearer-shore portions of the channel, the SNWW Entrance Channel Extension begins at roughly 18 miles from shore so pumping either construction or maintenance material from the offshore channel segment to shore is not feasible. However, the beneficial use of construction or maintenance material from a nearshore channel, the Sabine Pass Jetty Channel, was evaluated. This channel segment was targeted for evaluation because it was close enough to the Gulf shorelines to potentially provide an economical alternative for beach nourishment. However, further evaluation determined that it would require either dredging with a hopper dredge with pumpout capabilities, which would require mooring and connecting to the discharge pipe for each load of dredged material, or the use of a pipeline dredge in a channel segment where the feasibility of its use has not been established. The Jetty Channel has very high waves and unreliable weather conditions, which make using a pipeline dredge uncertain and inefficient. Pipeline dredges are not large enough to remain stable in high-wave conditions and can easily be swamped (the attempted use of a pipeline at another similar ship channel led to the dredge being swamped [USACE, 2005]). These risk factors make the cost

much higher. Therefore, because of high risk to human safety and dredge equipment and cost, the beach nourishment beneficial use alternative has been eliminated from further analysis.

A marsh restoration beneficial use alternative was evaluated for an area of eroding marshes in the Texas Point National Wildlife Refuge (TPNWR). Maintenance material (approximately 370,000 cy) from one dredging cycle of the inward portion of the Sabine Pass Jetty Channel could potentially be excavated using a cutterhead pipeline dredge and pumped into a 196-acre area of open water near the western jetty in the TPNWR. This is material that would normally be dredged using a hopper dredge and placed in one of the existing ODMDSs. The dredge pipe would need to be moved frequently to achieve an average fill depth of 8 inches, as requested by Refuge personnel. The objective would be to restore 70 percent of the open water (137 acres) to an elevation capable of supporting brackish marsh habitat. For this potential alternative, material would be taken from the most-inshore portion of the Sabine Pass Jetty Channel, a reach that is more protected from weather and waves than rest of the Sabine Pass Jetty Channel. This beneficial use alternative was considered to be a one-time demonstration effort—to determine whether wave and weather conditions would make it cost effective and reliable for future efforts. However, further analysis by USACE engineers determined that use of a cutterhead suction dredge in this reach of the channel was neither safe nor engineeringly sound. Therefore, this beneficial use option was dropped from consideration.

A different type of beneficial use alternative, the creation of a topographic high, was evaluated for non-nearshore areas. There is a significant natural topographic high (Sabine Bank) in the vicinity, but the beneficial use of creating another one off the Louisiana coastline was evaluated for the material from the Project. This beneficial use would involve the use of as much construction material as possible from either the deepened Entrance Channel or from the Extension in water depths that can safely be used by a hopper dredge. This site would also need to be located far enough upcurrent to prevent dredged material from being redeposited in the navigation channel. It has been determined (Hands and Bradley, 1990; McLellan and Imsand, 1989; Langan and Rees, 1989; Clarke and Pullen, 1992; Clarke and Kasul, 1994) that a properly designed underwater stable berm can provide reduction in the energy of erosive waves and serve as a refuge and feeding location for fish and shrimp.

Based upon assumptions and criteria established for a similar beneficial use area constructed in conjunction with the Houston-Galveston Navigation Channels Project, dredged material could be placed in an area roughly 11,000 by 14,000 feet, in a series of rows, each roughly 5 feet high at the center parallel to the shore (USACE, 1998a; Figure 2-2) If the edges of the rows are separated by roughly 100 feet and 10:1 side slopes are assumed, roughly thirty-five 14,000-foot rows would be required to fill the Beneficial Use (BU). However, it should be noted that the benefits noted for the topographic high cited in the paragraph above are for a BU site off Mobile Bay, with a much different configuration than that used off Galveston and there was no monitoring of the Galveston topographic high to determine whether any benefits accrued.

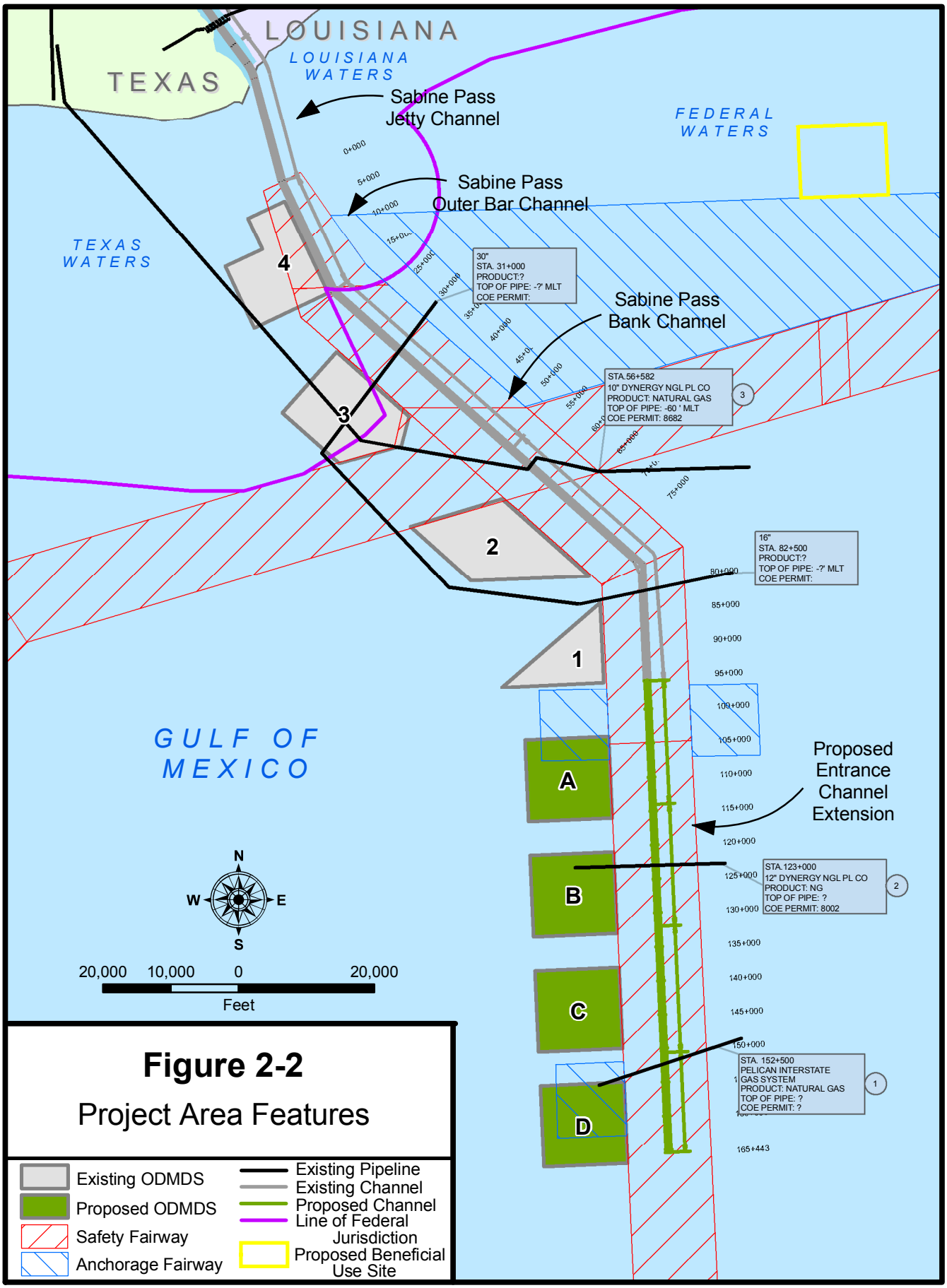

Figure 2-2

Project Area Features

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A configuration such as that described above could use up to 13.6 mcy of construction material, or roughly 56 percent of the expected 24.3 mcy construction material from the deepened Entrance Channel. To avoid the Fairway Anchorage along the Safety Fairway and to achieve the envisioned size of the BU, the BU must be located roughly 9 miles east of the Entrance Channel, just north of the Fairway Anchorage (Figure 2-3) in Federal waters. Thus, the southwest corner of the BU site would be located at 29° 37.6′ N, 93° 35.1′ W. A similar BU (offshore feeder berm) was examined by USACE (1997) and found not to be economically feasible because it was roughly seven times more expensive than standard offshore placement, which would result in an incremental cost of $268,182,000 (calculated based on October 2005 price levels and assuming a fuel cost of $2.05 per gallon). In the case of the BU examined by USACE (1997), the average roundtrip distance to the berm was only around 6 miles. The average roundtrip distance to the BU described above from the Extension is roughly 45 miles, so the cost would be exorbitantly high. Therefore, this BU option is not economically feasible.

2.3.2.2 Regional Sediment Management

As a Regional Sediment Management (RSM) measure, two alternatives were considered potentially viable for utilizing the approximately 9.9 mcy of the coarser-grained sediments to be generated by the new work dredging of sections “B” and “C” of the Extension Channel (or between stations 114+000 to 150+500) to produce regional benefits. The two alternatives included (1) the transport and stockpiling of the coarser-grained dredged sediments at ODMDS 4 (see Figure 2-2) for future beneficial use; and (2) the transport and discharge of the coarser-grained dredged sediments into the littoral zone offshore of Texas Point.

2.3.2.2.1 RSM Stockpiling Alternative

ODMDS 4 is the nearest existing ODMDS to Texas Point and has been designated by EPA to receive maintenance dredged material from the SNWW Entrance Channel. ODMDS 4 is classified as a dispersive site and is located beyond the depth of closure (approximately –19 feet mean lower low water [MLLW]); therefore, any appreciable accumulation of dredged material placed within the site is typically short term, and the dispersed material would not migrate into the littoral zone to add to the sediment budget. The stockpiling of dredged material within the aquatic environment for future beneficial use is effective only if significant quantities of the stockpiled material remain in place for rehandling as the need arises. Stockpiling assumes that the beneficial use need would not be immediate but may be required beyond the foreseeable future, which may be defined as a period greater than 3 months. It is expected that a substantial amount of material, if stockpiled within ODMDS 4, would have dispersed within a period of 3 months. It was therefore concluded that stockpiling dredged material within ODMDS 4 is not a viable RSM alternative.

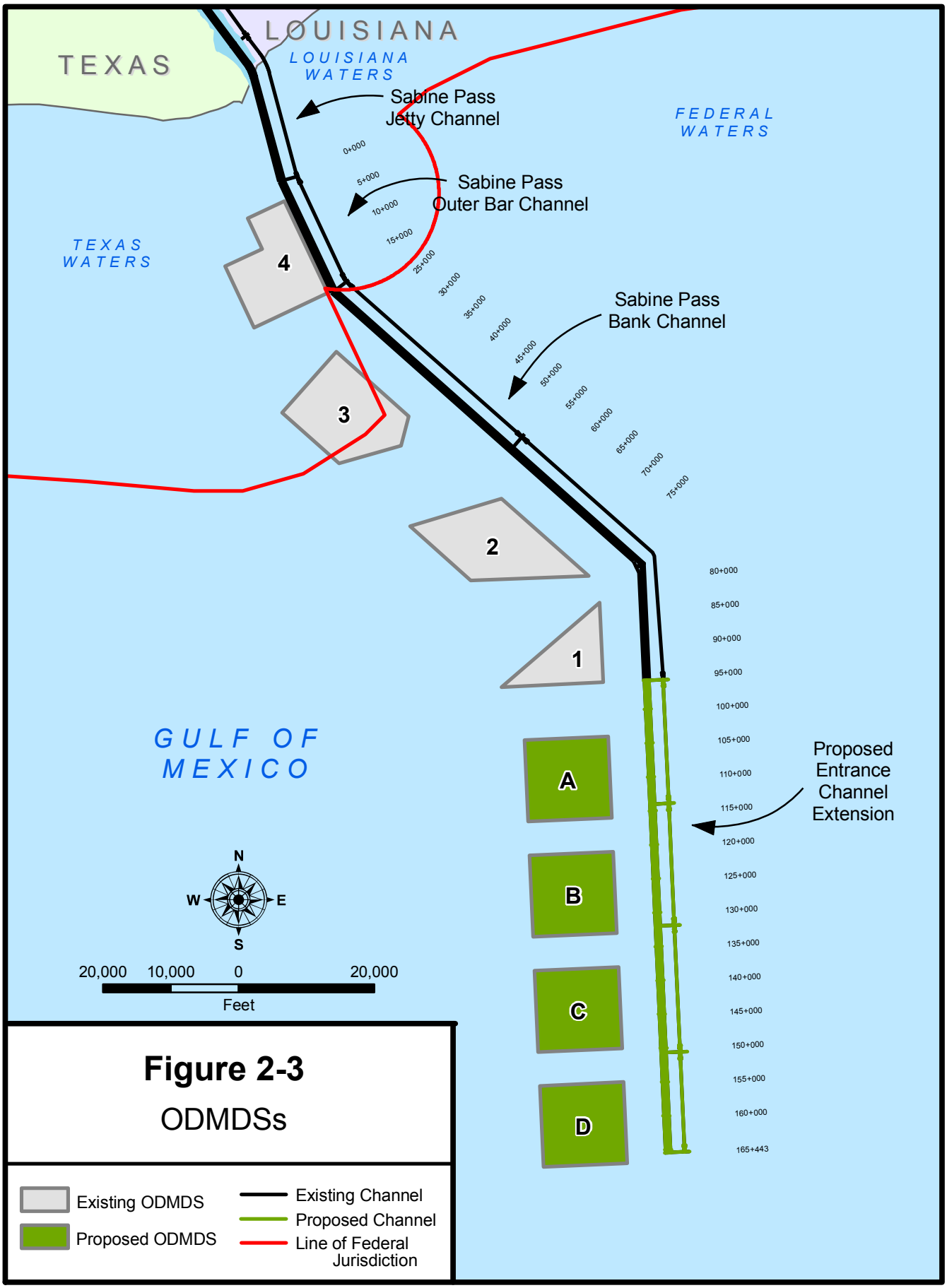

Figure 2-3

ODMDSs

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2.3.2.2.2 RSM Littoral Zone Discharge Alternative

This alternative entails the transport by hopper dredge of sediments dredged from sections "B" and "C" of the Extension Channel to an upstream point adjacent to ODMDS 4 (approximately at Station 3+000 or roughly ½ mile beyond the outer end of the jetties). The average one-way transport distance from sections "B" and "C" of the Extension Channel to Station 3+000 ranges from 21 to 28 miles. Upon arrival at Station 3+000, the hopper dredge would pump out the dredged material via a connecting pipeline to a discharge point located on, or inshore of, the 14-foot depth contour offshore of the Texas Point shoreline, a pump distance of approximately 3 miles from Station 3+000. Discharging the material at or inshore of the 14-foot depth contour should guarantee the reintroduction of sediments within the littoral zone, where natural processes would beneficially distribute the sediments. The incremental cost to transport and pump approximately 9.9 mcy of dredged material within the littoral zone via a hopper dredge with pump-out capabilities is estimated to be $86.7 million at October 2005 price levels and based on a fuel price assumption of $2.05 per gallon. The incremental cost for this RSM alternative would not be a project cost, and therefore would not be federally cost-shared, if implemented.

2.3.2.3 ODMDS

2.3.2.3.1 Existing ODMDSs 1, 2, 3, and 4

One ODMDS alternative would be to use the existing ODMDSs 1 through 4, designated by EPA (1983a) for placement of all construction and future maintenance material from both the Entrance Channel and the Extension. These ODMDSs are located along the west side of the SNWW Entrance Channel and are the historically used ODMDSs; ODMDS 4 has been used since at least 1931 and the others since 1962 (EPA, 1983a). As noted in Section 2.3.4.2, modeling has shown that the existing ODMDSs are of sufficient size to accommodate all of the material without undue mounding. However, as noted in Section 2.3.4.1.1, the cost of transporting the construction and maintenance material from the Extension to the existing ODMDSs would be prohibitive. Therefore, use of the existing ODMDSs is not considered a viable alternative.

2.3.2.3.2 Additional ODMDSs

Within the nearshore environment, four sites had been identified by USACE (1982) for the placement of construction and maintenance material for a proposed 50-foot channel, but these sites were never designated. Since these sites were proposed and studied for the 1982 EIS, they were tentatively identified as potential offshore placement sites for the proposed 48-Foot Project. They would be examined here as the preferred alternative (modified slightly, since the 1982 project was a 50-foot project), if they are not excluded in the selection process, described below.

2.3.3 Methodology

Historically, the NEPA approach to alternative analysis, and the one used in Designation EISs for the historically used ocean sites, has been to select a preferred alternative and compare it to several other

selected reasonable alternatives, or to a suite of generic alternatives, and to the No-Action Alternative. An alternative approach used in some ODMDS EISs is basically the same, except in the selection of the other sites. The purpose of this process is to "delineate economically feasible sites that are sufficiently far removed from ecologically sensitive or incompatible use areas to eliminate or minimize adverse impacts to these areas. Such so-called 'critical areas or resources' are likely to include geographically limited breeding, spawning, nursery, feeding or passage habitats; navigation lanes; beaches; and other critical areas that are determined to be incompatible with dredged material disposal activities" (EPA/USACE, 1984). Under this approach outlined in Science Applications, Inc. (SAI, 1986), selection of sites is conducted by selecting a Zone of Siting Feasibility (ZSF) and then, on the basis of available information, excluding those areas that would not conform to the 5 general criteria and the 11 specific factors for site selection given in 40 CFR 228.5 and 40 CFR 228.6(a), respectively. This selection process is normally visually displayed by a set of figures, which individually show the areas excluded for a single criterion or set of criteria (e.g., areas of biological sensitivity) and collectively show all excluded, and thus, nonexcluded areas. Therefore, the set of alternative sites is developed on a logical basis for all feasible sites. The process used here is a modification of the latter process because the Extension is so far offshore that some of the items ordinarily of concern are not of concern (i.e., transport of fines to the beach and its effect on aesthetics). Additionally, although not designated, the USACE selected four sites in an earlier EIS (USACE, 1982), as noted above, for a similar project that was never implemented. These sites are included in the ZSF and would be examined in the selection process.

After all necessary information, including that from field surveys (40 CFR 228.13), had been synthesized and nonexcluded areas had been delineated, the alternative sites were analyzed (see Section 4) relative to the 5 general criteria (40 CFR 228.5) and the 11 specific factors (40 CFR 228.6(a)). First application of the criteria and factors would be to the historically used and designated SNWW ODMDSs, if they are in the ZSF. If these sites were to conform to all criteria and factors, one or more of them would be recommended for selection unless another nonexcluded site was determined more amenable to ocean discharge.

2.3.3.1 Literature Search

Several concurrent approaches were taken in the collection of data relative to the proposed project and surrounding area. A computerized literature search for pertinent information was conducted. Forms of materials referenced include monographs, journals, and other serials, conference and symposium proceedings, theses and dissertations, technical reports, government-sponsored research reports, and pamphlets.

Data available from work contracted by the USACE to private corporations and universities, and from USACE EISs, and monitoring data from the existing SNWW project were obtained. The data provided by the USACE also offer (1) information on the characteristics and quantity of the material previously dredged and deposited at the historically used sites, and (2) expected characteristics of future dredged material. This information aided in determining the compatibility of future dredged material with that

already at the existing site and the expected amounts of dredged material. USACE personnel also provided information pertinent to physical and geographical constraints.

Monitoring studies have been conducted at and near the historically used ODMDSs and the proposed Extension. The results of these studies, conducted by the USACE and USACE contractors, along with other studies, provided the necessary site-specific data used to characterize the water and sediments in the ZSF and the grain-size data for the construction and future maintenance material.

All of the information discussed above, plus navigation charts, Minerals Management Service (MMS) charts, EISs, and other documents, were identified and collected.

The collected data were compiled, arranged according to the pertinent topics, and examined. At that time, any data gaps were noted. None were sufficient to disallow completion of the selection process; i.e., sufficient information was available to apply the exclusion process and the 5 general and 11 specific criteria.

2.3.3.2 Identification of Alternative Sites via the Screening Procedure

The procedure classically used to determine which potential site is the preferable site is basically a series of eliminations carried out in sequential order. The order used in the elimination process is as follows:

Phase I

1) **Definition of ZSF.** This is an initial screening procedure used to limit the geographic area of consideration and define the ZSF. Reasonable haul distances are a determining factor, as well as cost of monitoring and surveillance, and constraints imposed by political boundaries.

2) **Characterization of expected material and site sizing.** The type, quantity, and behavior of expected construction and maintenance material is identified. This is compared to general sediment characteristics in the ZSF to delineate zones of incompatibility. Then, the requisite size of proposed ODMDSs is determined using a numerical model, which simulates the behavior and disposition of the expected construction and maintenance material.

3) **Establish buffer zones for critical areas and resources.** The numerical model may also be used to define appropriate buffer zones around critical areas and resources. In this document, critical areas and resources are discussed in three general categories — biologically sensitive areas, beaches and recreational areas, and navigation channels.

Phase II

In this phase, more site-specific issues are resolved in compliance with the 11 specific factors prescribed in 40 CFR Part 228.6. In this document, factors assessed in identifying further areas to be eliminated from the ZSF are discussed in the following categories.

1) elimination due to oceanographic constraints;
2) elimination due to cultural and historic sites;
3) elimination due to nonliving resources and conditions such as sediment drift, oil and gas platforms and/or pipelines, etc.;
4) elimination due to living resources, including an appropriate buffer zone;
5) elimination due to environmental quality constraints; and
6) elimination due to recreational uses, such as beaches or recreational fishing areas, including appropriate buffer zones.

Phase III – Final evaluation and site selection

Based upon the evaluations conducted in phases I and II, final determination of the environmental suitability of each candidate site would be made in accordance with the five general criteria for site selection (40 CFR Part 228.5).

2.3.4 Development of Alternative Sites Using the Screening Technique

2.3.4.1 Zone of Siting Feasibility

The constraints on a site relative to the ZSF are those related more to its feasibility from a utilitarian as opposed to a regulatory perspective, although there is some overlap. Primary among the geographical and physical constraints are those that would restrict the safe and economical use of the site, such as distance from the dredging area, dangerous structures or currents, interference with or from other vessels, political boundaries, and logistic constraints on monitoring and surveillance.

2.3.4.1.1 Limits Due to Cost of Transport

The efficiency of the dredging operation, for the purposes of this report, depends only on the placement site location since all other factors would be relatively constant, no matter where the placement site is located. This efficiency can be broken down into several factors: (1) safety to personnel and dredges, (2) cost of dredging per cubic yard, (3) the time required for the dredge to complete the dredging operation and be ready to move to another area, and (4) down-time due to equipment failure. All of these factors are adversely affected by increasing the distance of the placement site from the channel. The last three of these factors can be directly correlated to the distance from dredging area to placement site, while the first is more complicated and site-specific. Certainly, however, the safety of personnel and dredges is related

to some measure of the exposure time to potential hazards (i.e., weather, other vessels/structures, etc.), and increasing exposure time in the offshore area would have an overall adverse impact on safety considerations. As noted in Section 2.3.1, replacing the proposed ODMDSs with a mid-shelf ODMDS(s) would increase construction dredging costs to $275,000,000. Maintenance dredging costs would also increase dramatically, and monitoring costs would also increase. Excess benefits from the SNWW CIP are insufficient to support such an increase; therefore, going to a mid-shelf site would make the project economically infeasible.

This distance factor also applies to ODMDSs that are much nearer the shore. For instance, existing ODMDSs were examined to determine whether all construction and future maintenance material from the Extension could be accommodated in the existing ODMDSs. Computer model runs indicated that this would be possible, without excessive mounding, but all of the existing ODMDSs would have to be used to avoid excessive mounding. Logically (see Figure 2-3), the material that would be expected to be placed in proposed ODMDS D would go to existing ODMDS 1, ODMDS C to ODMDS 2, etc., increasing the travel distance by roughly 26 miles for every load of dredged material since the end of the existing Entrance Channel and the end of the Extension is roughly 13 miles. This would increase construction-dredging costs for the Extension, using the same value of $0.29 cy/mile as in Section 2.3.1, by more than a factor of two, to $141,000,000. This cost would make it impossible to economically justify the SNWW CIP. An increase of this magnitude would obviously make the cost of transport to place material from the Extension into the existing ODMDSs much too expensive to be feasible, and additional ODMDSs in the ZSF are needed.

In the following EISs for the designation of ODMDSs for channels along the Gulf Coast (49 FR 34485 (Friday, August 31, 1984), 52 FR 22352 [Thursday, June 11, 1987]), EPA (1983a, 1983b), it was demonstrated that neither a mid-shelf site nor one beyond the edge of the Continental Shelf was preferable to a nearshore site. The Long Island Sound Dredged Material Disposal EIS (68 FR 53691 [September 12, 2003]) found that sites beyond the edge of the Continental Shelf were "economically unfeasible because of the extended travel time and associated expense." EPA (1986) states that ODMDSs should be located in an area that is within an economically and operationally feasible distance from the dredging site. Pequegnat et al. (1990) also cite operational and transportation costs as a limit on the location of an ODMDS. These factors would also apply to the placement of virgin material. Therefore, since no significant reasons for moving the placement site farther offshore, i.e., to a more nearshore site, mid-shelf site, or to one beyond the edge of the Continental Shelf, have been demonstrated, and since economic and safety reasons discourage it, the ZSF, based on limits due to cost of transport, would be an area parallel to and generally downcurrent from the SNWW Entrance Channel Extension.

2.3.4.1.2 Limits Due to Feasibility of Monitoring and Surveillance

The geographical constraints on the feasibility of a site for monitoring and surveillance are three: (1) size, (2) configuration, and (3) location. Based on historical practice, size and configuration are not pertinent to the ZSF analysis. The restrictions on location are (1) that the site be near enough to shore to allow safe

and efficient monitoring by vessels reasonably available, and (2) since benthic impacts are of primary concern, that the site be located in water shallow enough to allow efficient benthic sampling by vessels and equipment reasonably available. The first restriction is moot since any distance feasible for hopper dredge use would also be feasible for reasonably available monitoring and surveillance vessels. The efficiency of getting good replication benthic sampling due to anchoring difficulties for vessels reasonably available puts a depth limitation on the site of approximately 100 feet (Pequegnat et al., 1981). Also, any increase in depth increases benthic sampling time due to increased winch time in dropping and retrieving the grab sampler. However, along the shallow Texas coast near the SNWW Entrance Channel (see Figure 2-1), depth limitations are not as restrictive as are the cost factors, although a mid-shelf site would be in 90–110 feet of water. A site well beyond the ZSF would place restrictions on monitoring and surveillance that would reduce the feasibility of such a site.

2.3.4.1.3 Limits Due to Political Boundaries

As can be seen on Figure 2-3, the state line between Texas and Louisiana extends out down the middle of the Sabine Pass Jetty Channel, extends 9 nautical miles (approximately 10.36 statute miles) beyond the end of the jetties on the Texas side, and 3 Imperial nautical miles (approximately 3.46 statute miles) on the Louisiana side. At those points it intersects the line between Federal and State waters, which is shown on Figure 2-4. These are the Texas and Louisiana State Seaward Boundaries, measured from the MLLW line and that separate State from Federal waters. The State Seaward Boundary determines the jurisdiction over activities that occur in those waters; for instance, the seaward limit of each State's Coastal Zone and the extent of waters from which States receive all revenues from oil and gas exploration. However, these particular political boundaries, while near the SNWW Entrance Channel Extension and influencing the need of determination of CZMP consistency, do not limit the ZSF. There are no Military Warning Areas within roughly 60 miles of Sabine Pass (www.gomr.mms.gov/regulate/environ/MWA_boundries.pdf).

2.3.4.1.4 Conclusion

Pequegnat (1984) recommends additional criteria for selecting a site and develops criteria such that all U.S. sites would be essentially suitable for all situations, i.e., an ideal site. For example, a minimum water depth of 20 meters is recommended to assure that the material would remain in the disposal area for a relatively long time. Should the dredged material contain pollutants, strong winter waves would not resuspend it. Also a minimum size of 3 square nautical miles is recommended, which would be adequate for 26 to 40 mcy of material annually. However, when site-specific information is available, it is not unreasonable to use that information to determine a site, which is specific for the area of interest. Indeed, Pequegnat (1984) recommends that where existing sites are suitable for their areas, they should not be excluded from consideration just because they do not meet the criteria for an ideal ODMDS.

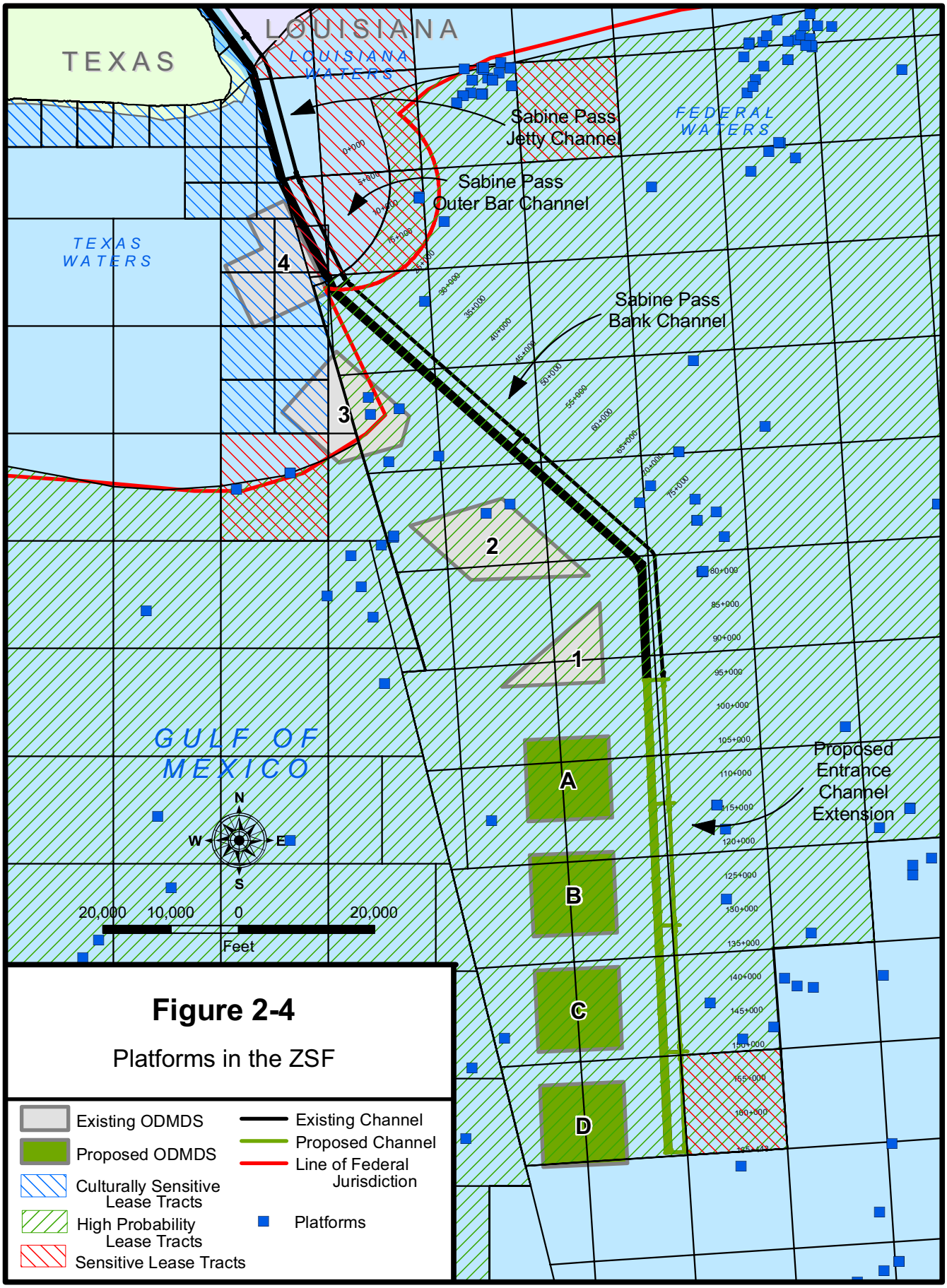

Figure 2-4

Platforms in the ZSF

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In this document, the cost and safety issues involved in the transportation of dredged material were the limiting factors in determining the ZSF. Especially, a mid-shelf site (60 to 70 miles offshore) and a site beyond the Continental Shelf would not be feasible because of dredging costs, safety, and limits on monitoring and surveillance. However, the amount and quality of the material to be dredged allowed the selection of the chosen ZSF since deep-water and larger placement sites were not necessary.

Based primarily on the efficiency of the dredging operation in terms of time, money, and safety, and the general uniformity of the area near the Entrance Channel Extension, the ZSF for ODMDSs is an area 13.2 statute miles long, paralleling the Extension Channel and 4 statute miles to the west of the Extension Channel. The ZSF thus encompasses an area of roughly 52 miles. All areas outside this ZSF are excluded, unless some other factor arises that excludes all of the ZSF.

2.3.4.2 Modeling Dredged Material Distribution

The disposition of dredged material was simulated using an updated version (MDFATE; EPA/USACE, 1991) of a 1976 model, Dredged Material Fate (DMF), developed for the USACE through the Dredged Material Research Program by Tetra Tech., Inc. (Brandsma and Divoky, 1976). The modifications to this model were made under the supervision of Dr. Billy H. Johnson of the Waterways Experiment Station of the USACE. The purpose of the modeling was to determine the necessary size of any new ODMDSs and to determine if the existing ODMDSs were of sufficient size to contain the additional construction and future maintenance from the existing Entrance Channel and from the proposed Extension.

This program models the initial behavior and final disposition of dredged material deposited "instantaneously" at the site of interest through the doors of a hopper dredge. The MDFATE model assumes that this procedure may be broken into three phases: (1) convective descent, during which the discharge cloud falls under the influence of gravity; (2) dynamic collapse, occurring when the descending cloud impacts the bottom or arrives at a level of neutral buoyancy at which point the descent is retarded and horizontal spreading dominates; and (3) long-term passive dispersion, commencing when the material transport and spreading are determined more by ambient currents and turbulence than by the dynamics of the disposal operation (Johnson and Holliday, 1978). The model also includes the settling of suspended solids.

The model was run for the sizes of hopper dredge that have been typically used in the SNWW Entrance Channel, the specifications of which are shown in Table 2-1. Additionally, an examination of Table 2-1 would reveal that more construction material is anticipated to go into proposed ODMDS B, while more maintenance material is expected to be placed in ODMDS C. Since all of the proposed ODMDSs are the same size and are roughly at the same depth, the model was run only for ODMDS C, with the amount of new work material expected to be placed in ODMDS B and the amount of maintenance material destined for ODMDS C, as a worst-case scenario. The volumes used in the model were based on preliminary numbers for a 50-foot channel plan and, therefore, are either greater than or equivalent to the current

Table 2-1[1]
Proposed Extension Ocean Dredged Material Disposal Sites
(MFDATE Simulation Volumes)

	Channel Station		Length	Width	Area	Area	Depth	New Work Material			
PA	North	South	(feet)	(feet)	(square feet)	(square miles)	(feet)	Quantity (cy)[2]	Sand	Silt	Clay
A	100+000	112+000	12,000	12,359	148,308,000	5.32	44.3	4,600,000	21.6	23.8	54.6
B	117+000	129+000	12,000	12,359	148,308,000	5.32	44.2	5,300,000	45.8	16.5	37.8
C	134+000	146+000	12,000	12,359	148,308,000	5.32	45.8	4,640,000	40.8	19.3	40.0
D	151+000	163+000	12,000	12,359	148,308,000	5.32	44.5	4,200,000	22.5	21.6	55.9
								18,740,000	Total		

	Contributing Channel				Future Maintenance Material with Proposed Project[4]			
	Channel Station		Channel	Frequency	Quantity[3]			
PA	North	South	Length	(years)	(cy/cycle)	Sand	Silt	Clay
A	95+734	114+000	18,266	4	639,310	9.7	35.8	54.5
B	114+000	132+000	18,000	4	630,000	9.7	35.8	54.5
C	132+000	150+500	18,500	4	647,500	9.7	35.8	54.5
D	150+500	165+000	14,500	4	507,500	9.7	35.8	54.5
					2,424,310	per cycle (assumes 4-year cycle)		
					30,303,875	per 50 years		
					606,078	Average annual		

[1]Volume based on an earlier 50-foot channel plan.

[2] from calculations supplied by USACE

[3] from table from Galveston District

[4] Based on historic data for maintenance material going into PA1, the farthest offshore of existing ODMDSs.
Bottom current velocity = 0.4 feet per second to south-southwest (EPA, 1983).

Model is MDFATE found at: http://el.erdc.usace.army.mil/products.cfm?Topic=model&Type=drgmat
Hopper dredge statistics: Capacity in cy, time in minutes, velocity in knots, all others in feet.

Size	Small	Medium	Large
Capacity	3600	6400	9180
Type	Split Hull	Split Hull	Bottom Door
Hopper			
Length	150	137	153
Width	41	40	40
Time to empty	4	sand 6 mud 2	3
Loaded Draft	19.4	22.4	29
Unloaded draft	12	15	20.5
Velocity at discharge	4	4	2

volumes of the proposed 48-foot channel plan, with the exception of the future maintenance material volumes for proposed channel extension. Following subsequent shoaling analyses, it was concluded that the future maintenance volume for the proposed 48-foot plan channel extension is actually 25 percent greater than the extension channel maintenance volumes used for the MDFATE simulation. However, when combining ODMDS B new work material with ODMDS C future maintenance material, the combined volume for the simulation increased by only 2.5 percent. The model was also run on each existing ODMDS, using the quantity of construction and future maintenance material that is projected to go into those ODMDSs. Model runs were made for all existing PAs since there is great variation in the sizes and quantities of materials expected to be placed in them. A run was also made to determine if the existing ODMDSs could accommodate all of the construction and future maintenance material from both the existing Entrance Channel and the proposed Extension. For the 50-foot channel plan, the combination of new work and maintenance material from ODMDS B and PA3 going into PA3 appeared to be the worst case and was used for the combination model run.

2.3.4.2.1 New Work Material

The percentage of the various soil particle types anticipated in the new work sediment to be dredged was estimated (see tables 2-1 and 2-2) using information (gravel, sand, and fines) from cores collected by the USACE in 1977, in preparation for the EIS for the 50-foot channel proposed in USACE (1982), supplemented by grain-size data for the fines fraction from Pearson et al. (1986). The proposed channel extension for the 48-foot project is located within the general footprint of the channel extension proposed in the 1982 EIS. The USACE took 26 cores from the end of the jetties to beyond the Extension. Of these, eight were in the proper location and of sufficient depth to provide information on the grain-size distribution in the ZSF. However, the cores taken by the USACE did not break the fines into the silt and clay fractions needed for the modeling. Therefore, data in which fines were broken into silts and clays were taken from Pearson et al. (1986) for cores in roughly the same location, at the same depths, and from the same sediment type. The relative percentages of silts and clays in the reference cores were applied to the fines fractions of the USACE cores to provide complete grain-size distribution. These data for the entire column of the construction material that was expected to be placed in each proposed or existing ODMDS (sand content is higher at the surface) at the time of MDFATE simulations are presented in tables 2-1 and 2-2, along with the quantity of material from Extension construction or existing Entrance Channel improvement that was anticipated to be placed in each proposed ODMDS for the MDFATE simulations. Updated new work and future maintenance material volumes are previously reported in Table 1-1 of this document.

Output from the MDFATE model simulates the results of depositing the entire amount of dredged material on the ocean floor at predetermined grid points. In the models, the mounds of new work material were slightly skewed in the current and vessel-heading directions and would form rounded diamond-shapes, slightly elongated in the downcurrent and vessel-travel directions, although this is difficult to see at the scale of the figures in Attachment A. At its thickest, the mound elevation for the largest mound of

Table 2-2
Existing Entrance Channel Ocean Dredged Material Disposal Sites
(MDFATE Simulation Volumes)

Contributing Channel							New Work Material				
	Channel Station		Area	Area	Area	Depth		Gravel	Sand	Silt	Clay
PA	North	South	(acres)	(square yards)	(square miles)	(feet)	Quantity (cy)[1]	(%)	(%)	(%)	(%)
4	2+500	18+000	3,444	16,668,960	5.38	34 to 43	4,669,000	0	4.3	24.4	71.3
3	24+000	41+000	3,939	19,064,760	6.15	30 to43	5,923,000	0	15.4	21.6	63.0
2	61+000	80+000	4,738	22,931,920	7.40	33 to41	8,275,000	0	18.7	20.7	60.6
1	84+000	95+734	2,020	9,776,800	3.16	34 to43	9,983,000	0	3.2	24.7	72.1
							28,850,000	Total			

Contributing Channel						Future Maintenance Material with Proposed Project				
	Channel Station		Channel		Quantity					
PA	North	South	Length	Frequency (years)	per year[2] (cy)	Quantity per cycle (cy)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
4	0+000	-215+29	21,529	5	327,241	1,636,204	0	9.6	57.5	32.9
3	0+00	18+000	18,000	1	4,590,000	4,590,000	0	9.6	57.5	32.9
2	18+000	53+000	35,000	2	1,855,000	3,710,000	0	11.8	51.3	36.9
1	53+000	95+734	42,734	4	373,923	1,495,690	0	5.0	51.6	43.4
					7,146,163	11,431,894	per cycle			
						357,308,165	per 50 years			

[1] From USACE Construction Estimate Table

[2] Information from Nancy Young (Frqncy Tbl 20051)

new work material in the proposed ODMDSs would be 4.14 feet and 5.25 in the existing ODMDSs (Table 2-3). The lateral extent from the peak of the mounds at the edge of the mounding to the point where the model indicates mound thickness is reduced such that ambient water depth is reached is 705 feet upcurrent of the discharge point and 1,081 feet in the with-current direction (see Table 2-3). Cross-current mounding extended 539 feet from the release point in the direction from which the vessel was traveling and 690 feet from the release point in the direction of vessel travel. Therefore, these are the distances that would be used in the determination of the sizes of the buffer zones and the proposed ODMDSs.

For the existing ODMDSs, the locations of the discharge points, a grid within each ODMDS, were controlled so that no dredged material mound extended beyond the boundaries of the site and then the mounding height was determined. This method was chosen to ensure that the existing ODMDSs are of sufficient size without excessive mounding. For some runs, not all of the potential discharge points were needed (e.g., compare Attachment A, pages A-10 with A-11 or A-14 with A-15). As an examination of Table 2-3 and Attachment A would reveal, the sizes of the existing ODMDSs are sufficient to contain the material from the proposed channel deepening and widening.

2.3.4.2.2 Maintenance Material

The MDFATE model program was also run on the maintenance material. The percentage of the grain sizes anticipated in the maintenance material to be dredged from the Entrance Channel Extension and existing Entrance Channel was estimated (see tables 2-1 and 2-2) using historical information from analyses of maintenance material from the existing channel dating from 1993 through 2004 (USACE Galveston District Dredging Histories Data Base) and the models were conducted, again on proposed ODMDS C and each existing ODMDS (Attachment A). At its thickest, the mound elevation for the largest mound of material would be 2.79 feet for the proposed ODMDSs and 7.46 feet for the existing ODMDSs (see Table 2-3). The lateral extent from the peak of the mounds at the edge of the mounding to the point where the model indicates mound thickness is reduced such that ambient water depth is reached is 679 feet upcurrent of the discharge point and 1,078 feet in the with-current direction (see Table 2-2). Cross-current mounding extended 399 feet from the release point in the direction from which the vessel was traveling and 389 feet from the release point in the direction of vessel travel. These distances would also be used in the determination of the sizes of the buffer zones and the proposed ODMDSs. Since no long-term mounding has occurred over the history of use of the existing ODMDSs, which includes several channel deepenings (EPA, 1983a) and continuing maintenance dredging events, and since the construction dredging would include advance maintenance, the mounding for the maintenance material was not added to that for the construction dredging.

As a result of that analysis, it was found that the size of the existing SNWW ODMDSs (EPA, 1983a) was sufficient for 50 years of routine maintenance from the 48-Foot Project for the area of the existing Entrance Channel. Since all other facets of the maintenance material are the same for the 48-Foot Project

Table 2-3
MDFATE Results

Material	Dredge Size	Maximum Mound Height (feet)	Spacing (feet)	Downcurrent Maximum Distance (SW) (feet)	Upcurrent Maximum Distance (NE) (feet)	With Dredge Direction (South) (feet)	Against Dredge Direction (North) (feet)	Typical Duration of Dredging (days)
Entrance Channel Extension								
ODMDS C								
New Work	Large	4.14	500	798	615	690	539	321
	Small	2.23	500	1,081	703	346	378	
Maintenance	Large	2.79	900	649	541	389	357	52
	Small	1.90	500	1,078	679	388	399	
Entrance Channel Only								
ODMDS 4								
New Work	Large	4.90	500	992	562	612	661	411
	Small	3.47	500	1,537	760	661	413	
Maintenance	Large	7.46	500	876	793	744	992	185
	Small	5.67	500	1,207	826	760	661	
ODMDS 3								
New Work	Large	4.21	500	1,019	438	438	723	410
	Small	2.81	500	1,384	757	303	649	
Maintenance	Large	4.44	500	1,351	465	1,200	508	113
	Small	3.59	500	1,509	863	593	539	
ODMDS 2								
New Work	Large	4.62	500	895	658	608	574	415
	Small	3.08	500	1,467	900	1,017	550	
Maintenance	Large	4.35	500	877	548	636	723	67
	Small	3.76	500	1,266	844	641	895	
ODMDS 1								
New Work	Large	4.90	500	973	432	616	162	235
	Small	5.25	500	1,732	910	1,293	373	
Maintenance	Large	4.17	500	973	649	800	551	38
	Small	3.14	500	1,458	800	877	307	
Entrance Channel and Entrance Channel Extension								
ODMDS 3								
New Work	Large	3.66	500	1,102	518	848	298	693
	Small	3.27	500	1,536	762	1,006	331	
Maintenance	Large	3.71	500	1,384	649	1,049	1,405	163
	Small	3.12	500	1,514	832	995	649	

as currently exist, the analysis conducted for EPA's site designation (EPA, 1983a) is considered sufficient, and no additional analyses were conducted for maintenance material for the 48-Foot Project to the end of the existing Entrance Channel. The existing designated maintenance material ODMDSs are the selected alternative for routine maintenance material associated with the 48-Foot Project to the end of the existing Entrance Channel. Accordingly, no further discussion of maintenance material from this portion of the 48-Foot Project is included in this EIS.

2.3.4.3 Buffer Zone Assignment

The computer model (results displayed in Attachment A) for short-term sediment mounding was used to determine the expected distribution of the construction and maintenance material on the ocean floor immediately after placement. The information gained from the model runs, by consistently using conservative scenarios, allowed the determination of (1) the buffer zones discussed below, and (2) the appropriate size for the ODMDS.

2.3.4.3.1 Biologically Sensitive Areas

The only biologically sensitive area near the existing or candidate ODMDSs is the Sabine Bank, a sand bank located approximately 17 miles south of the mouth of Sabine Pass in water depths of – 39 feet (Blum et al., 2002). The main body of the bank (Sabine West Bank) is 20.5 miles long, running roughly parallel to the Texas coast. The existing SNWW navigation channel is located approximately 0.75 mile to the east of its eastern extent. A smaller body of Sabine Bank (Sabine East Bank), approximately 10.5 miles long, is located east-northeast of the SNWW channel. Existing ODMDSs PAs 1 and 2 are located north and south of the eastern end of the Sabine West Bank, and none of the Sabine Bank is located within the ZSF. Sabine Bank, as a topographic high that provides relief in an otherwise relatively flat area, likely provides ecologically and economically important essential fish habitat (EFH) for fish species (Brooks et al., 2003). It also "may provide a special microhabitat with a different benthic community residing within on-bank, off-bank, and ecotone areas based on a combination of sediment grain size and energy regime (Neuman and Able, 1998; Wright et al., 2000; Bergen et al., 2001)" (Brooks et al., 2003). However, since Sabine Bank (East or West) would not be affected if the material does not flow out of the proposed ODMDSs, as shown by the modeling, no buffer zones were utilized for biologically sensitive areas.

2.3.4.3.2 Beaches and Recreational Areas

Since the nearest beach is roughly 12 miles away from the most-inshore of the candidate sites, and since other ODMDSs for the Texas coast (EPA, 1982, 1989, 1990a, 1990b, 1990c, 1990d) indicate needed buffer zones ranging from 0.8 to 1.9 miles, a buffer zone for beaches was not determined. The only recreational pastime that could be affected would be fishing (all others would be onshore and at least 12 miles away), most of which would occur at Sabine Bank or at drilling rigs in the vicinity. Since both of these would be avoided, no buffer zones were required for recreational areas.

2.3.4.3.3 Navigation Channel

The upcurrent edge of detectable mounding for virgin material is roughly 705 feet upcurrent of the discharge point, as noted in Section 2.3.4.2.1. Since the location of the disposal site would inevitably be downcurrent of the channel (see Section 2.3.4.4), doubling of the 705 feet, should provide an adequate buffer zone to prevent significant material from being carried back into the channel. This buffer zone also keeps the dredge well out of the navigation channel when it is discharging. Thus, the navigation channel buffer zone is 1,410 feet. The proposed ODMDSs are roughly 3,000 feet downcurrent from the Extension, so application of a Navigation Channel Buffer Zone is easily met.

2.3.4.4 Oceanographic Constraints

With time, the mounding from the construction material would erode and be carried downcurrent. Since the longshore drift is predominantly east to west along the Gulf Coast at Sabine Pass (EPA, 1983a; Kumpf et al., 1999), placing the disposal area to the east of the channel would ensure that the dredged material would be carried right back into the channel. Therefore, all areas east of the channel are excluded from consideration for the ODMDSs.

2.3.4.5 Cultural and/or Historical Resources Constraints

No buffer zone for buried sites of archeological or historic interest is recommended. Shipwrecks are the only cultural/historic resources that could be expected in the ZSF, and existing databases indicate no known shipwrecks are located within the ZSF. However, Figure 2-4 does show Texas lease tracts that are designated as Culturally Sensitive Lease Tracts by the THC; Federal lease tracts that are listed by MMS as High Probability Lease Tracts because of the probability of a shipwreck, based solely on location; and Federal and State lease tracts that are designated by MMS as Sensitive Lease Tracts because they are believed to contain specific shipwrecks that are more than 50-years old. Ancient river levees along the buried valley walls of the relict Sabine River channel are the only offshore locations where archeological sites could reasonably be found. None of this relict river valley is located in the ZSF (Figure 2-5). Figure 2.5 was taken *in toto* from Pearson et al. 1986, since it so excellently showed the relic valley. To it was added the SNWW Entrance Channel and Extension. As Figure 2-5 demonstrates, the SNWW Entrance channel splits off from the relic valley at about the offshore end of the Outer Bar Channel. The proposed ODMDSs are hidden by the inset map in the bottom right hand corner of Figure 2-5. Therefore, the proposed ODMDSs are well away from the higher probability areas along the relic riverbank. Furthermore, there is no long-term accumulation of material in the ODMDSs and the short-term accumulation outside of the sites is expected to be minimal, similar to that at the historically used ODMDS. There should be no significant impact should unknown wrecks be present within the ODMDS sites.

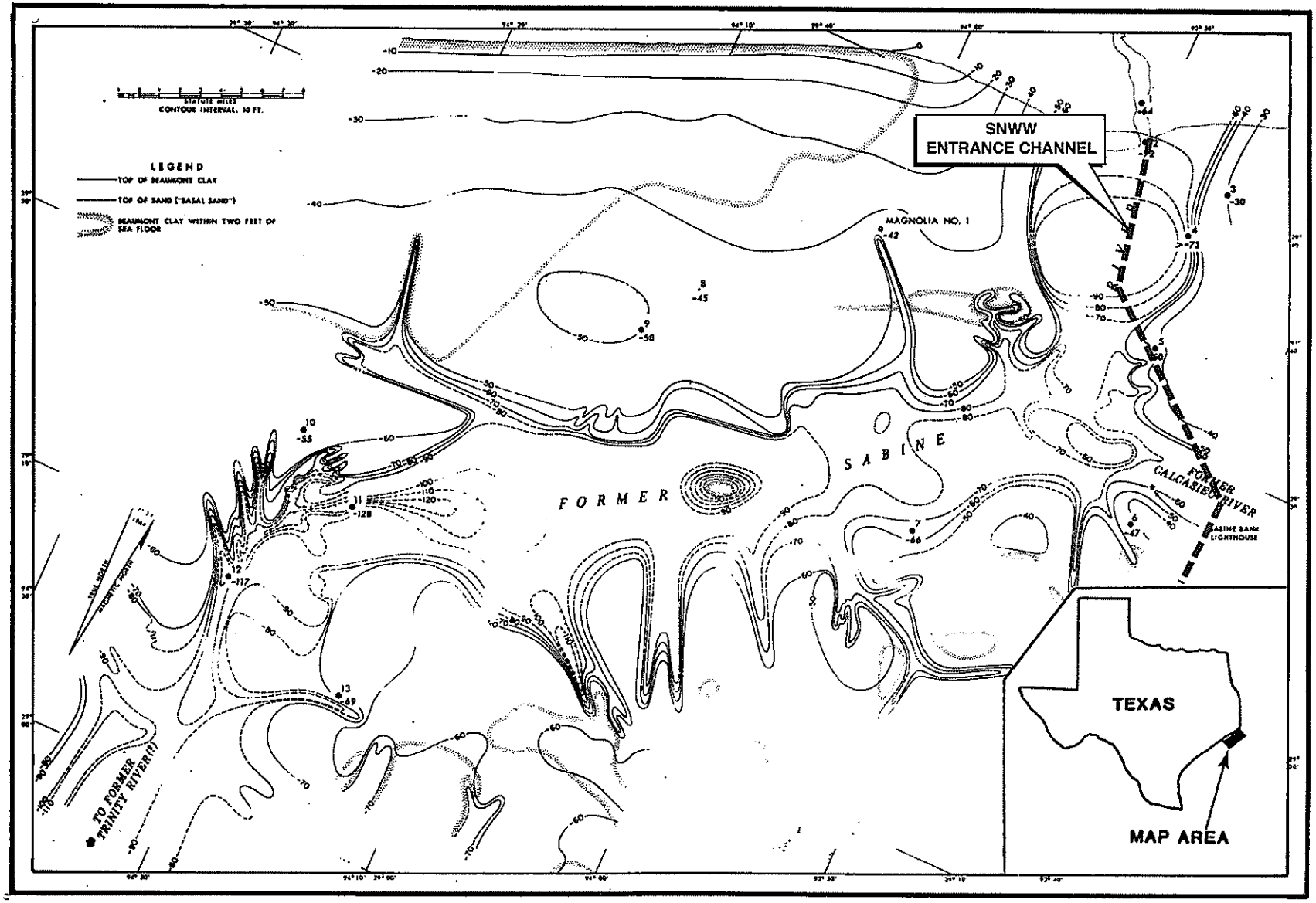

Figure 1-1. The study area (after Nelson and Bray 1970).

Figure 2-5

2.3.4.6 Nonliving Resources Constraints

There is only one natural obstruction in the proposed ODMDSs and it is only a slight shoal to 40-foot MLLW in proposed ODMDS A. The Extension, the navigation channel buffer zone, and the Navigation Safety Fairways, for safety reasons, are excluded from the area available for the proposed ODMDSs (see Figure 2-2). There are no active oil or gas platforms reported in the proposed ODMDSs (see Figure 2-4; MMS, 2004; NOAA Chart 11341), although there may be a platform located at the northwest corner of proposed ODMDS B (USACE, 2004). However, it does not appear to be associated with a pipeline and, therefore, is likely the location of a shut-in and abandoned well. If it is indeed in the boundaries of the proposed ODMDS, the USACE has a 1,000-foot safety precaution built into all dredging contracts, such that dredges must not discharge within 1,000 feet of any platform. Offshore platforms from the University of Texas Bureau of Economic Geology (BEG) database, through 2001, are included on Figure 2-4.

MMS typically has a 1,300-foot clearance restriction on dredged material placed nearby drilling rigs or production platforms because of the possibility of "mudslides" that could damage oil/gas rigs. USACE typically imposes a 1,000-foot buffer zone around rigs/platforms in its dredging contracts. Dredged material does flow, thus the diminution of mound height from the placement point, as seen in Attachment A. However, from the data in Table 2-3, it can be determined that the maximum mound height in the proposed ODMDSs is only about 4 feet, with side slopes of an average of 116 horizontal to 1 vertical for construction material and 155:1 for maintenance material. Accumulations of this height and slope obviously pose no threat to oil/gas rigs. Furthermore, there are no active oil or gas platforms in the proposed ODMDSs.

There is one pipeline that just touches the northern edge of proposed ODMDS D (see Figure 2-3), and another that can be found under the northeast portion of proposed ODMDS B, but their presence should not preclude the use of these sites since (1) they are buried and should not be an obstruction for dredge operations; (2) the existing ODMDSs are crossed by pipelines with no reported problems; (3) the mounding would be evenly distributed all over the ODMDSs, therefore causing no overburden stress on the pipelines; (4) the material would winnow away with time; and (5) active pipelines would have to be deepened or relocated because they cut across the proposed Extension. Proposed ODMDSs A and D overlap with portions of Fairway Anchorage Areas but should not preclude the designation of these proposed ODMDSs since (1) the dredged material placement would cause no more than 5 feet of shoaling and the average water depth in the anchorages is 46 feet (see Figure 2-3 and Figure 2-6); (2) the ODMDSs would be located on Navigation Charts and Notices to Mariners; and (3) part of the Anchorages do not overlap with the ODMDSs and the use of the sites is one time for construction material and intermittent for future maintenance material.

2.3.4.7 Living Resources Constraints

Sabine Bank, at its nearest, is located roughly 1.7 miles northwest of the northwest corner of proposed ODMDS A. There are no nearby fish havens, and the jetties, which provide excellent fish habitat, are more than 16 miles away and the nearest artificial reef (see Figure 2-7) is 6.6 miles from proposed

ODMDS B. Both of these jetties and the artificial reefs are too distant to warrant generation of buffer zones. EFH is discussed in great detail in the SNWW CIP EIS. From a review of that discussion, most of the areas of concern are estuarine, which would not be affected by ocean placement. For the marine aspects of the fish covered by EFH, they are either concentrated near reefs, offshore platforms, or other hard substrate or they are widely scattered over the Gulf bottom, and no single area, excepting Sabine Bank, is likely to be more important than any other. Therefore, there are no EFH issues that influence the selection of the ODMDS locations. The only marine fish with Critical Habitat near the ZSF is the Gulf sturgeon, which has a present range of Lake Pontchartrain and the Pearl River system in Louisiana east to the Suwannee River in Florida (68 FR 13370). The nearest portion of the Critical Habitat is Lake Pontchartrain east of the Lake Pontchartrain Causeway and is, therefore, not a factor in ODMDS site selection.

2.3.4.8 Environmental Quality Constraints

As noted (1) in sections 3.2, 3.3.4, and 4.2.1, which are concerned with characterization of the material to be dredged, with water quality in the ZSF, with the quality and characteristics of sediment in the ZSF, and the environmental impacts of ocean placement in the preferred sites, and (2) sections 3.4.2 and 4.2.2.2, which are concerned with the benthos, no environmental quality constraints on the new work or maintenance material site selection exist except for those included in the buffer zone development, since as noted in Section 2.3.6, there are no grain-size considerations.

2.3.4.9 Recreational Uses Constraints

As noted above, the only recreational use would be from fishing, and since Sabine Bank is at least 1.7 miles from any proposed ODMDS and there are no offshore platforms in any of the proposed ODMDS, no recreation use buffer zone is needed.

2.3.4.10 Areas Available for an ODMDS

Based on the information provided above, all of the areas in the proposed ZSF are available for designation.

2.3.5 ODMDS Size Determination

The same oceanographic considerations that applied to the development of the buffer zones apply to the determination of necessary size of a disposal site. That is, the site must be designed so that any mounding that occurs would not endanger shipping (i.e., mounding of no more than 5 feet), and so that sediment and water column parameters would be at background levels outside of the disposal site. As noted above, the modified ODMDSs proposed by USACE (1982) were examined and are sufficiently large to accommodate both the construction material and anticipated future maintenance material without undue mounding if placement of all loads occurs at least 980 feet from the boundaries of the ODMDSs, and the

loads are placed in a grid pattern with drop points at 500-foot intervals. If there are more loads than drop points, the pattern would be repeated until all dredged material has been discharged.

2.3.6 Preferred Sites

As noted previously, the virgin material is predominantly silt and clay (average of 32 percent sand), and the maintenance material is even finer (roughly 9 percent sand), which would make a predominantly silt/clay regime the preferable bottom type upon which to dispose of the material. However, there are no such regions in the ZSF. In fact, all of the surface areas in the ZSF and up to 16 miles to the west are dominated by sandy sediments. Therefore, there is no reason, based on grain size and the information provided above, to locate the proposed ODMDSs anywhere other than at the sites selected by USACE (1982). It should be noted that the same situation exists at the existing ODMDSs, but studies have shown no significant change in diversity and only a slight decrease in benthic abundance with continual use of these ODMDSs (USACE, 1975; EPA, 1983a). In a study for EPA (1983a; Appendix A), where dredging occurred between two benthos investigations, the only change found that could potentially be related to dredged material placement was a slight decrease in the percentage of deposit feeders. Therefore, the apparent incompatibility of grain size appears, based on empirical data, to have little impact on the benthic community. Additional factors are that dredged material does not appear to accumulate at the ODMDSs, and the benthos on the inner shelf is disturbed so frequently that it never reaches a climax stage and, thus, is dominated by opportunistic, adaptable species. According to EPA (1983a), dredged material is likely to erode completely within a year or two because of tropical storms or hurricanes. Every 3 years or so a hurricane or tropical storm would come sufficiently close (within 30 miles) to cause bottom currents near 200 centimeters per second (cm/sec) and every year, on average, close enough (within 250 miles) to cause bottom currents of 50 cm/sec. Both of these currents are sufficient to cause significant sediment movement, and the former would cause massive movement of bottom sediments (EPA, 1983a).

Therefore, the preferred sites for the SNWW 48-Foot Project new work and maintenance material ODMDSs for the Entrance Channel Extension are bounded by (Coordinates in NAD 83):

ODMDS A	29° 24′ 47″ N, 93° 43′ 29″ W; 29° 24′ 47″ N, 93° 41′ 08″ W 29° 22′ 48″ N, 93° 41′ 09″ W; 29° 22′ 49″ N, 93° 43′ 29″ W
ODMDS B	29° 21′ 59″ N, 93° 43′ 29″ W; 29° 21′ 59″ N, 93° 41′ 08″ W 29° 20′ 00″ N, 93° 41′ 09″ W; 29° 20′ 00″ N, 93° 43′ 29″ W
ODMDS C	29° 19′ 11″ N, 93° 43′ 29″ W; 29° 19′ 11″ N, 93° 41′ 09″ W 29° 17′ 12″ N, 93° 41′ 09″ W; 29° 17′ 12″ N, 93° 43′ 29″ W

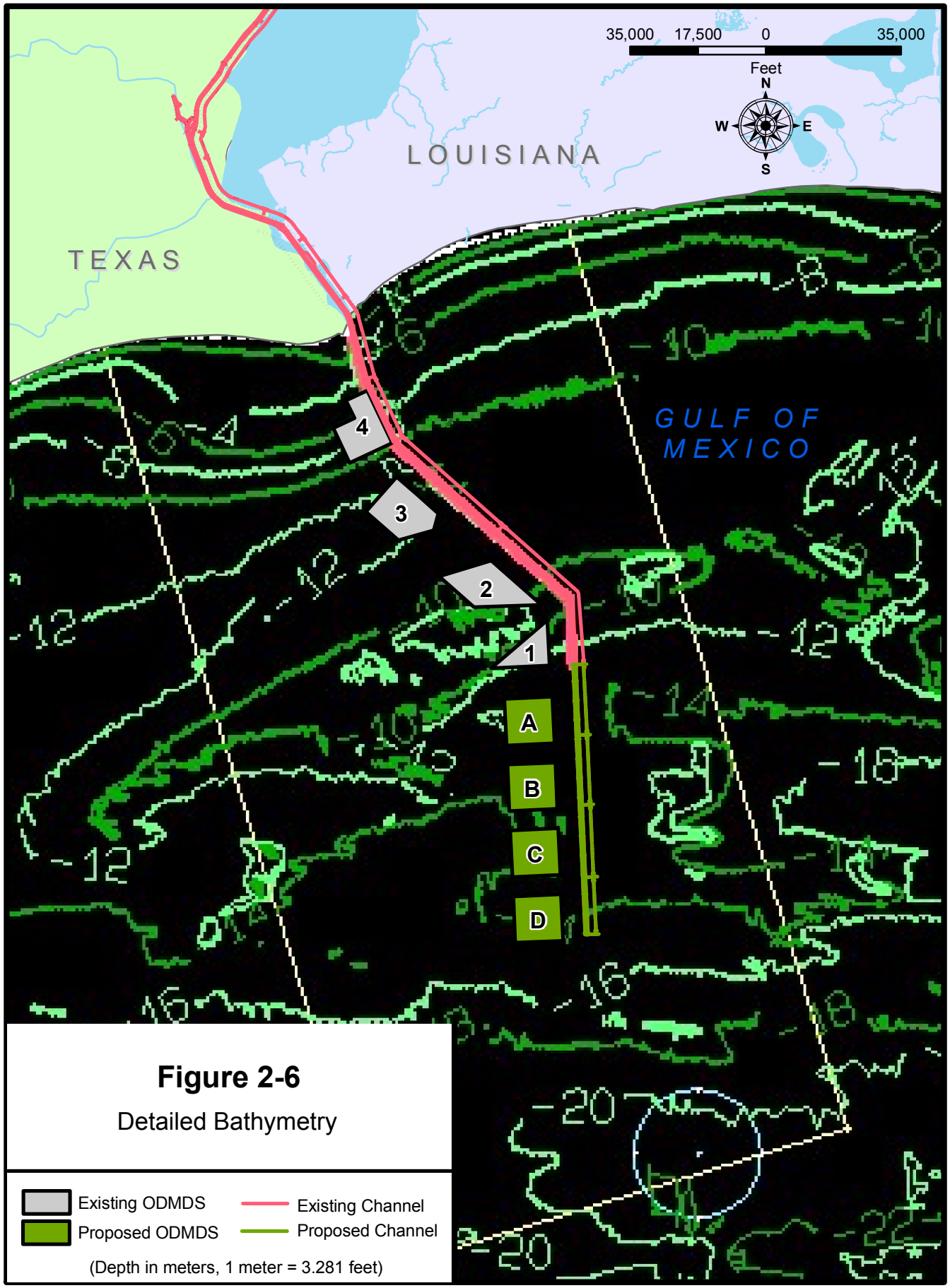

Figure 2-6

Detailed Bathymetry

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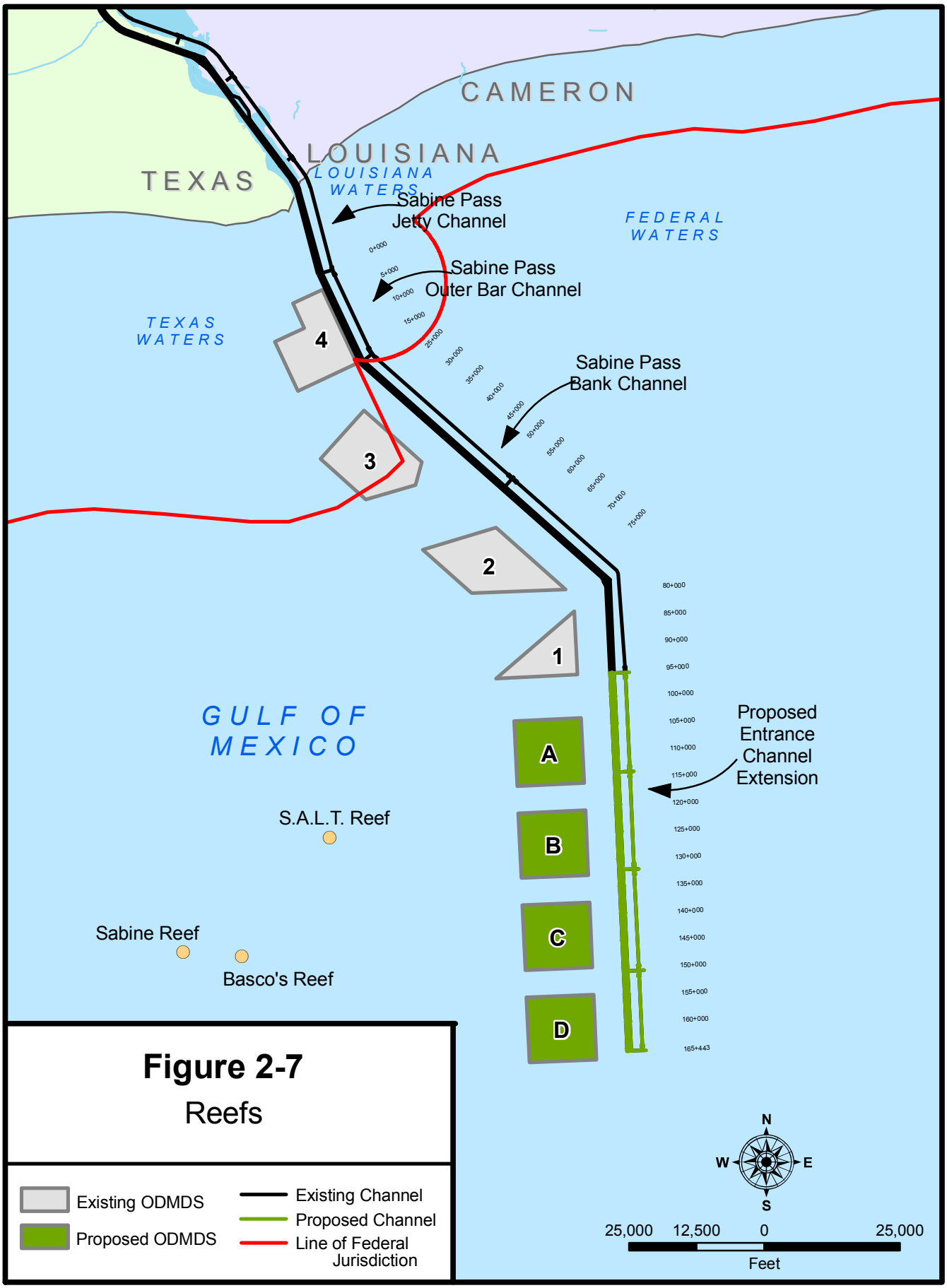

Figure 2-7
Reefs

N:441206/post_HU_projects/Projects/Original_Revised_Figure_Numbers/Figure_2_7_Vr2.mxd (A.P. 3/08/07)

ODMDS D 29° 16′ 22″ N, 93° 43′ 29″ W; 29° 16′ 22″ N, 93° 41′ 10″ W
29° 14′ 24″ N, 93° 44′ 10″ W; 29° 14′ 24″ N, 93° 43′ 29″ W

Each is 12,000 feet long in the north-south direction, 12,360 feet in the east-west direction, and has an area of 5.32 square miles, or 4.02 square nautical miles.

2.4 PREFERRED ALTERNATIVE – DESIGNATION OF FOUR ADDITIONAL WEST-OF-CHANNEL ODMDSs

2.4.1 Description

Alternatives examined were the No-Action Alternative, upland placement, and ocean placement, including Nearshore, Mid-Shelf, and Continental Slope Alternatives. The No-Action Alternative would result in the cancellation of the 48-Foot Project and, previously in this document, was determined to be not viable. The Mid-Shelf and Continental Slope Alternatives were not considered viable because of safety and economic considerations and because of limits on monitoring and surveillance. While the existing ODMDSs appear to have sufficient capacity to contain all construction and maintenance material from the 48-Foot Project, they are not considered viable because of greatly higher transport costs. The preferred nearshore sites, as opposed to mid-shelf or continental slope sites, were developed by excluding those areas that would not be appropriate for ocean disposal of dredged material, and then selecting apparent environmentally acceptable, suitably sized disposal sites. Since the sites selected by USACE (1982) were found to be of sufficient size, had essentially the same grain size as all other areas in the ZSF, and are environmentally acceptable and operationally efficient, they were selected as the preferred alternative. EPA's Preferred Alternative is the final designation of the preferred sites as the ODMDSs for the one-time placement of virgin material and the placement of future maintenance material from the dredging of the Entrance Channel Extension of the 48-Foot Project.

2.4.2 Site Monitoring and Surveillance

One of the ODMDS management responsibilities cited in 40 CFR 228.3 is "developing and maintaining effective ambient monitoring programs," although this is tempered somewhat by 40 CFR 228.9 (a), which states, "The monitoring program, if deemed necessary by the Regional Administrator or the District Engineer, as appropriate, may include baseline or trend assessment surveys. . . ." Since 40 CFR 229 (c) states that "EPA will require the full participation of permittees . . . in the development and implementation of disposal monitoring programs," a monitoring program and Site Monitoring and Management Plan (Attachment C) are included in this EIS.

There are two approaches that may be applied to determining unfavorable trends. One is to conduct monitoring surveys on the ecosystem at and near the ODMDSs at regular intervals. The other approach is to determine the quality of the material to be discharged at the site, from a chemical and biological perspective, and thereby, to determine expected impacts. The testing requirements specified in 40 CFR

227.13, as applied by the USACE, Galveston District, satisfy parts of both of the above-mentioned approaches.

The Site Management and Monitoring Plan included as Attachment C addresses the details of monitoring and surveillance for both construction and maintenance material.

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3.0 AFFECTED ENVIRONMENT

This section provides a brief description of the area comprising the land and ocean areas near Sabine Pass, the Entrance Channel, and offshore for roughly 30 miles. This is the ODMDS Study Area as the term is used in this EIS. Thus, this section provides more information than that pertaining to the existing site or even the ZSF. More-specific information, as the Ocean Dumping Regulations apply to the preferred alternative, is presented in Section 4.1.

3.1 CHARACTERISTICS OF HISTORICALLY USED ODMDSs

3.1.1 Site Locations

The characteristics of the four ODMDSs that have been historically used (see Figure 2-4) and were designated in 1987 (52 FR 34218) are listed below (based on data from EPA [1983a] and USACE data [Coordinates are in NAD 27; all dredged material quantities include advance maintenance, allowable overdepth, and nonpay dredging]).

Site	Corner Coordinates	Distance from Shore (miles)	Area (miles/ nautical miles)	Depth (feet)	Existing Mainte-nance Material (mcy)	Estimated 48-Foot Project Construction Material (mcy)	Estimated 48-Foot Project Maintenance Material (mcy)*
ODMDS 1	29° 28′ 03″ N, 93° 41′ 14″ W 29° 26′ 11″ N, 93° 41′ 14″ W 29° 26′ 11″ N, 93° 44′ 11″ W	18.4	3.2/ 2.4	34–43	2.56	8.31	1.51
ODMDS 2	29° 30′ 41″ N, 93° 43′ 49″ W 29° 28′ 42″ N, 93° 41′ 33″ W 29° 28′ 42″ N, 93° 44′ 49″ W 29° 30′ 08″ N, 93° 46′ 27″ W	14.6	7.4/ 5.6	30–43	1.70	7.05	3.13
ODMDS 3	29° 34′ 24″ N, 93° 48′ 13″ W 29° 32′ 47″ N, 93° 46′ 16″ W 29° 32′ 06″ N, 93° 46′ 29″ W 29° 31′ 42″ N, 93° 48′ 16″ W 29° 32′ 59″ N, 93° 49′ 48″ W	7.8	6.2/ 4.6	33–41	1.99	5.92	4.47
ODMDS 4	29° 38′ 09″ N, 93° 49′ 23″ W 29° 35′ 53″ N, 93° 48′ 18″ W 29° 35′ 06″ N, 93° 50′ 24″ W 29° 36′ 37″ N, 93° 51′ 09″ W 29° 37′ 00″ N, 93° 50′ 06″ W 29° 37′ 46″ N, 93° 50′ 26″ W	4.8	5.4/ 4.1	16–30	1.14	2.98	1.35
	Total per dredging cycle					N/A	10.46
	Project Total				7.38	24.26	334.30

*Per dredging cycle.

3.1.2 Characterization of the Materials Expected to be Dredged

3.1.2.1 Virgin Material

The SNWW was last deepened before the MPRSA was enacted, so no Section 103 evaluations have been conducted on the construction materials, per se. However, the construction material should be the same as the material examined in PBS&J (2004), which was found acceptable under a Section 103 evaluation. The material expected to be dredged during deepening of the Jetty Channel, Outer Bar Channel, and Sabine Bank Channel should be essentially the same as the sediments to be dredged from the Extension Channel (discussed in Section 3.2.4.1). Therefore, there are no concerns relative to the sediment quality.

3.1.2.2 Maintenance Material

As noted in Section 1.1, the designation of the existing ODMDSs for the maintenance material was presented in EPA (1983a). EPA (1983a) included information about sediment and elutriate chemistry and bioassays and bioaccumulation studies on maintenance material and that information indicated no concerns relative to the maintenance material. However, additional information is provided in sections 3.2 and 3.3 of the SNWW CIP FEIS, to which this document is appended. SNWW CIP FEIS Section 3.3, Water Quality, and Section 3.4, Sediment Quality, discuss USACE chemistry and bioassay data on maintenance material samples from the existing Entrance Channel, collected in 1993, 1995, 1996, 1998, and 2004. Samples were subjected to chemical analyses in all years and bioassays and bioaccumulation studies in 1998 (PBS&J, 1999) and 2004 (PBS&J, 2004). These sections conclude that there are no concerns with the maintenance material relative to water-quality or ocean-floor impacts.

3.2 CHARACTERISTICS OF PROPOSED ODMDSs

3.2.1 ODMDS Locations

The characteristics of the four proposed ODMDS (see Figure 2-4) are listed below (based on information provided by the USACE [Coordinates are in NAD 83; all dredged material quantities include advance maintenance, allowable overdepth, and nonpay dredging]):

Site	Corner Coordinates	Distance from Shore (miles)	Area (miles/ nautical miles)	Depth (feet)	Estimated 48-Foot Project Construction Material (mcy)	Estimated 48-Foot Project Maintenance Material (mcy)*
ODMDS A	29° 24′ 47″ N, 93° 43′ 29″ W 29° 24′ 47″ N, 93° 41′ 08″ W 29° 22′ 48″ N, 93° 41′ 09″ W 29° 22′ 49″ N, 93° 43′ 29″ W	21	5.3/ 4.0	44	4.59	0.79
ODMDS B	29° 21′ 59″ N, 93° 43′ 29″ W 29° 21′ 59″ N, 93° 41′ 08″ W 29° 20′ 00″ N, 93° 41′ 09″ W	24	5.3/ 4.0	44	5.30	0.78

Site	Corner Coordinates	Distance from Shore (miles)	Area (miles/ nautical miles)	Depth (feet)	Estimated 48-Foot Project Construction Material (mcy)	Estimated 48-Foot Project Maintenance Material (mcy)*
	29° 20′ 00″ N, 93° 43′ 29″ W					
ODMDS C	29° 19′ 11″ N, 93° 43′ 29″ W 29° 19′ 11″ N, 93° 41′ 09″ W 29° 17′ 12″ N, 93° 41′ 09″ W 29° 17′ 12″ N, 93° 43′ 29″ W	27	5.3/ 4.0	46	4.65	0.80
ODMDS D	29° 16′ 22″ N, 93° 43′ 29″ W 29° 16′ 22″ N, 93° 41′ 10″ W 29° 14′ 24″ N, 93° 44′ 10″ W 29° 14′ 24″ N, 93° 43′ 29″ W	30	5.3/ 4.0	45	4.20	0.65
	Total per dredging cycle				N/A	3.02
	Project Total				18.74	37.73

*Per dredging cycle.

3.2.2 Characterization of the Disposal Area

In 2004, the USACE contracted for the collection of samples for water, surface sediments (grab samples), and elutriate chemistry; grain-size analysis; suspended particulate phase (SPP) and solid phase (SP) bioassays and bioaccumulations studies; and macrobenthic invertebrate analysis on material from the proposed ODMDSs and the centerline of the proposed Extension Channel (PBS&J, 2004).

Samples were collected at nine channel sites and three ZSF sites for water, sediment, and elutriate chemistry; grain size; suspended particulate and SP bioassays; and bioaccumulation studies (Figure 3-1). Additionally, samples were collected at 56 stations in the ZSF for grain-size analysis and at 14 stations for benthos. The chemical analysis and grain-size data are presented in Attachment C, which is appended to this ODMDS EIS.

The ZSF-Ref elutriate exceeded the EPA Acute and Chronic Water Quality Criteria (WQC) for copper, as did the water sample, and the Chronic WQC for nickel and zinc, but not the Acute WQC. There were no concerns with contaminants in the sediments as determined by the analyses described below. There were no tests in which survival of test organisms in the SPP and SP bioassays was at least 10 percent less than Reference Control survival (20 percent for the amphipods), requiring statistical analysis of the data (Attachment C). Therefore, these data yield no indication of toxicity to sensitive marine organisms during dredging or placement. Also, there was no bioaccumulation of trace metals or organic compounds in *Mercenaria mercenaria* or *Nereis virens* exposed to sediments from stations in the proposed Entrance Channel extension or from the reference stations. There was some statistically significant accumulation of cyanide in *N. virens* exposed to SN-CH-100 sediments (Attachment C). The significance of this is not

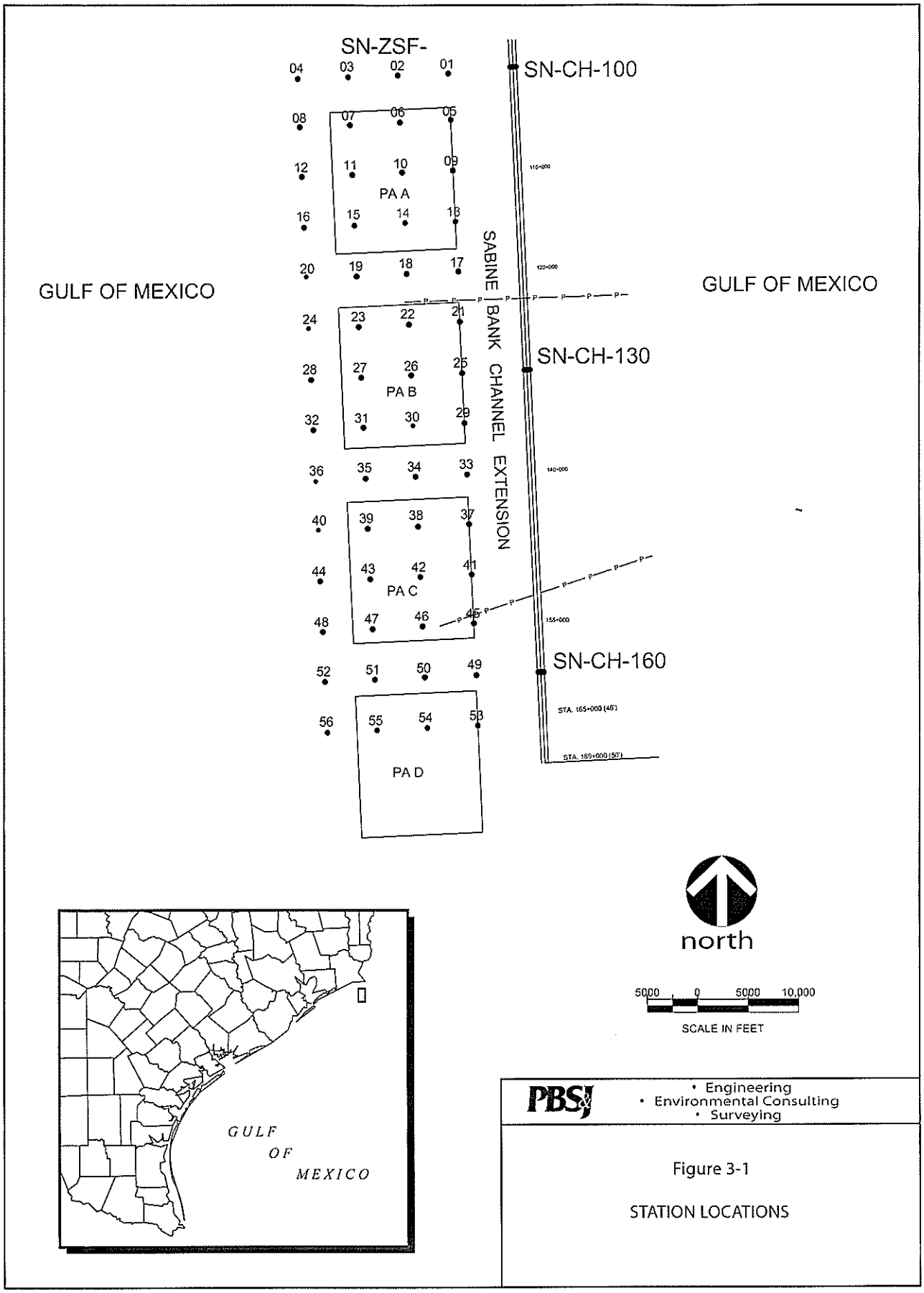

Figure 3-1

STATION LOCATIONS

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clear but for the reasons that follow, should not be of concern. There is no U.S. Food and Drug Administration (FDA) Action level for cyanide and cyanide was not detected in any water, elutriate, or sediment sample. Cyanide was not detected in all replicates of *N. virens* exposed to SN-CH-100 sediments; was found in some replicates of *N. virens* exposed to SN-CH-160 sediments, although not at concentrations significantly greater than Reference Control tissues; and was found in some replicates of *M. mercenaria* exposed to Reference, SN-CH-130, and SN-CH-160 sediments, but not SN-CH-100 sediments. Additionally, there should be no difference in the channel station sediments, relative to the reference sediments since there is no channel in place at this time.

The sediments in the area (PBS&J, 2004) are predominantly sand: 26 percent of the samples contained >90 percent sand, 41 percent contained >80 percent sand, and only two samples had a sand content less than 50 percent. The maximum sand content was 99.1 percent sand at Station ZSF-55.

Additional data from the Rice University Coastal Research Group (2008), as noted in Anderson and Wellner (2002), White et al. (1987), and Pearson et al. (1986), were examined to determine if the data were useful for comparison to the PBS&J (2004) data and to determine whether grain size changed markedly outside the ZSF. Only the Rice University data for surface sediments from core samples were useful because Pearson et al. (1986) did not provide complete grain-size analysis for the core data by depth and White et al. (1987) only provided nearshore data. The Rice University data are summarized in Table 3-1. The data were organized so that they provide a series of roughly north-south lines, with the lines moving from east of the SNWW channel to roughly 46 miles west of the channel. The line within 93°44′ W to 93°49′ W most closely aligns with the ZSF, even though it is slightly to the west. The Rice University data confirm what was found in the ZSF (PBS&J, 2004), that surface sediments in the region surrounding the ZSF are predominantly sand.

3.2.3 Characterization of the Material Expected to be Dredged

3.2.3.1 New Work Material

The information provided above for the ZSF is also a description of the surface material from the area to be dredged for the proposed Extension. Therefore, there is no concern for placement of the surface material. No chemical analyses or bioassays have been conducted on cores from the proposed Extension, but such testing is excluded by the Ocean Dumping Regulations (40 CFR §§200–228; 42 FR 2468, January 11, 1977), which state at 40 CFR § 227.13(b)(3) that dredged material is excluded from testing:

> (3) When:
>
> > (i) The material proposed for dumping is substantially the same as the substrate at the proposed disposal site; and

Table 3-1
Rice University Coastal Research Group Core Data

Station	Longitude Degrees	Longitude Minutes	Latitude Degrees	Latitude Minutes	Sand (%)	Silt (%)	Clay (%)
Longitude 93° 36' - 37'							
93-1	93	37	29	31	31	66	3
93-2	93	37	29	31	100	0	0
93-3	93	37	29	30	75	25	0
93-4	93	36	29	29	62	36	2
93-5	93	36	29	28	65	33	2
Longitude 93° 44' - 49'							
96-2B	93	49	29	28	65	33	2
96-2C	93	49	29	28	65	33	2
96-1	93	46	29	27	75	25	0
96-3	93	47	29	26	100	0	0
96-4	93	46	29	24	100	0	0
96-5	93	44	29	21	100	0	0
Longitude 93° 49' - 53'							
GY-134A	93	51	29	29	100	0	0
93-13	93	53	29	28	36	63	1
GY-135A	93	50	29	27	100	0	0
GY-136A	93	49	29	26	100	0	0
93-12	93	52	29	26	60	39	1
93-11	93	51	29	26	92	8	0
93-10	93	51	29	25	87	13	0
93-14	93	55	29	25	87	12	1
93-9	93	50	29	24	91	8	1
93-8	93	50	29	23	15	83	2
93-7	93	49	29	22	87	13	0
93-6	93	49	29	22	81	18	1
Longitude 93° 57' - 59'							
93-16B	93	58	29	23	87	12	1
93-16A	93	58	29	23	94	5	1
93-17	93	57	29	22	84	15	1
93-15	93	59	29	21	68	31	1
Longitude 94° 02' - 04'							
93-21	94	4	29	22	96	4	0
93-20	94	4	29	21	95	5	0
93-19	94	3	29	20	37	58	5
93-18	94	2	29	19	94	6	0

Source: Rice University Coastal Research Group (2008).

(ii) The site from which the material proposed for dumping is to be taken is far removed from known existing and historical sources of pollution so as to provide reasonable assurance that such material has not been contaminated by such pollution.

3.2.3.2 Maintenance Material

Future maintenance material in the Extension should be essentially the same as the maintenance material routinely dredged from the existing Entrance Channel (sections 3.1.2.2, 4.1.2.4, and 4.2.1.2), which has not shown a cause for concern in past testing and is even further removed from sources of pollution.

3.3 PHYSICAL ENVIRONMENT

The historically used ODMDSs have received SNWW Entrance Channel maintenance material (USACE records) since at least 1971, although the channel was obviously maintained before that date. The sizes of the ODMDSs and their coordinates are provided in Section 3.1.1. They are south-southeast of Sabine Pass between the –20-foot and –40-foot contour lines. The historically used ODMDSs were designated by EPA for the continued placement of dredged material removed from the SNWW Entrance Channel (FR Vol. 52, No. 175, September 10, 1987, page 34218; FEIS, 1983 [EPA, 1983a]).

The SNWW Entrance Channel provides access for vessels of up to 40-foot draft to the ports of Port Arthur and Beaumont and nearby areas. The Sabine Pass area is atypical in that, unlike 90 percent of the Texas shoreline, it is not separated from the Gulf by barrier islands. The Gulf Intracoastal Waterway (GIWW) runs northwest-southeast through the area, running from Galveston, Texas, to Port Arthur, to near Orange, and on toward Lake Charles, Louisiana.

3.3.1 Climate and Meteorology

While the study area for this EIS is entirely within the contiguous waters of the Gulf, the climate is still the same as that described in Section 3.2.4 of the 48-Channel EIS and are not repeated here. Of the material here that is not included in Section 3.2.4 of the SNWW Channel Improvement Project EIS, much is drawn from Ward (1977). The Sabine Pass area is in a marine environment dominated by the Gulf. The dominating influence of the Gulf arises chiefly from (1) the large area of the Gulf and long residence time of overlying air that enables the Gulf to function as an airmass source region, and (2) the persistent onshore flow that transports Gulf air deep into the state. The onshore flow is interrupted by weather disturbances carried in the belt of prevailing westerlies, but these interruptions occur primarily in winter, when the belt of westerlies is displaced southward to the middle latitudes of the U.S., the Bermuda High weakens considerably, and frontal passages over the project area become much more frequent.

In late summer, when the westerlies have retreated into Canada, the Texas Gulf coast area falls under the influence of the tropical easterlies, which, like the westerlies, carry disturbances. These tropical systems, easterly waves, depressions, and sometimes hurricanes, enter the state from the east and southeast and move westward. The peak month of this tropical activity is September. According to Henry and

McCormack (1975), annually there is a 32 percent, 18 percent, or 6 percent chance of a tropical storm, hurricane, or extreme hurricane, respectively, striking a 100-mile strip of the Gulf coast centered a little east of Sabine Pass.

The average temperatures in the Sabine Pass area for winter (January) and summer (July) are 52 degrees Fahrenheit (°F) and 83°F, respectively, for the period 1957 to 2004. These average temperatures are, of course, the statistical expression of a complex of meteorological systems within the respective months over 48 years. Average monthly rainfalls in the Sabine Pass area for months representative of the four seasons are as follows: 4.9 inches (January), 5.3 inches (May), 5.5 inches (July), and 5.6 inches (September), for a yearly average of 56.8 inches (www.waterbase.com).

Two principal wind regimes occur along the Texas coast: prevailing south to southeasterly winds, and short-lived but strong northerly winds, generally associated with winter "northers." Wind velocities in the area are generally constant throughout the year, ranging from a monthly average of 7.4 miles per hour (mph) in July to 11.4 mph in March.

From the hydrographic point of view, the most significant climatological effects are due to seasonal precipitation distributions and to the forcing of circulations and wave motions by wind systems. With respect to the latter, the phenomenon of the frontal passage is of particular importance. Bays along the Texas coast, including Sabine Lake, are extremely responsive to meteorological forcing, as are the inner reaches of the shelf (Crout et al., 1984). Although the characteristics and morphology of frontal systems are highly variable, a general scenario may be sketched as follows. As a polar outbreak enters Texas, low-level convergence in the frontal zone enhances the normal southerly flow. The resultant onshore winds elevate water levels in the upper parts of the bays and along the northwest Gulf coast, forcing a volume of water through the passes. With the passage of the front, pressure increases inland and the wind turns to the north, depressing water levels in the upper bays and in the northwest Gulf, thus discharging volumes of water through the passes into the Gulf.

3.3.2 Oceanographic

3.3.2.1 Bathymetry

The neritic zone potentially affected by dredged material disposal activities includes the shoreface, defined as the area from shore to about 30 feet depth and the inner reaches of the Gulf Continental Shelf, which extends from a depth of about 30 feet to the 65,000 feet contour (Fisher et al., 1973). Shallow waters, less than 45 feet deep, comprise approximately 25 percent of the entire shelf.

Transition from shoreface to shelf occurs between 1 to 10 miles from shore and is marked by a decrease in bottom slope. In the Sabine Pass area, the bottom slope averages 6 feet per mile until roughly 1 mile offshore, after which it steadily decreases to an average 1 foot per mile roughly 10 miles offshore (White et al., 1987). Thus, for most of its extent, the shelf is gradually sloping and, except for Sabine Bank, it is relatively featureless. The shelf merges seaward with the slightly more precipitous continental slope at

about –650 feet with the transition area known as the shelf break. The Continental Shelf is at its widest south of the Sabine Pass area (100 miles wide; MMS, 1997). No coral reefs, banks, or other major physiographic features characterize the shelf in the Sabine Pass area, except for Sabine Bank. As can be seen from Figure 2-6, the water depth in the area ranges to approximately 65 feet.

3.3.2.2 Circulation and Mixing

The hydrodynamic regime of the northwestern Gulf is the result of the complex interaction of tides, meteorological driving forces (i.e., wind and atmospheric pressure gradients), freshwater inflows, Coriolis acceleration, etc. Both local conditions and the overall Gulf circulation pattern affect the hydrodynamics of the study area. In addition, major meteorological events such as hurricanes and tropical storms can have profound influence on waves, tides, and currents. However, these events are relatively rare and of short duration. For example, EPA (1982) states that within approximately 40 miles of the Gulf coast of northeastern Texas, bottom currents would reach a maximum velocity of around 3.92 knots every 3 years and sustain velocities of 1 knot or greater for several days once a year.

Astronomical tides are generally small in the Gulf. They vary from diurnal to semidiurnal as a function of the moon's declination, with a typical diurnal range of 2 to 4 feet along the coast. Spring tides are generally higher, but since the range is so small, meteorological effects (i.e., wind or storms) can completely obscure tidal fluctuations (Buchman, 1979). A more-detailed discussion of tides in the Gulf can be found in Marmer (1954).

A major feature that dominates circulation in the eastern Gulf is the Loop Current, a continuation of the Yucatan Current, which enters the Gulf through the Yucatan Straits. There are two important semipermanent currents that diverge from the Loop Current: one circulating clockwise in the southwestern Gulf, the other circulating counterclockwise in the northwestern Gulf (Curray, 1960; Cochrane and Kelly, 1986), although in summer, winds that can cause upwelling can also cause a reversal of the counterclockwise flow. The general surface circulation in the Gulf is depicted on Figure 3-2.

Roughly one-third of the discharge from the Mississippi River system flows to the Mississippi-Alabama shelf, and the Texas-Louisiana shelf receives the other two-thirds, which produces one of the most productive coastal fisheries in the U.S. The Mississippi and Atchafalaya rivers, along with the other rivers in Texas and Louisiana, produce a freshwater flow equal to approximately 10 percent of the shelf volume (Dinnel, 1984).

For the purposes of this EIS, the most critical currents are those associated with strong, episodic events, e.g., northers, tropical storms, and hurricanes. Brooks (1984) has measured the effects of hurricanes, which may increase current speeds at the water surface over the Continental Shelf to 3 to 5 feet per second (MMS, 2002), down to 700 feet. Off the Texas-Louisiana coast in 100 meters of water, Halper and

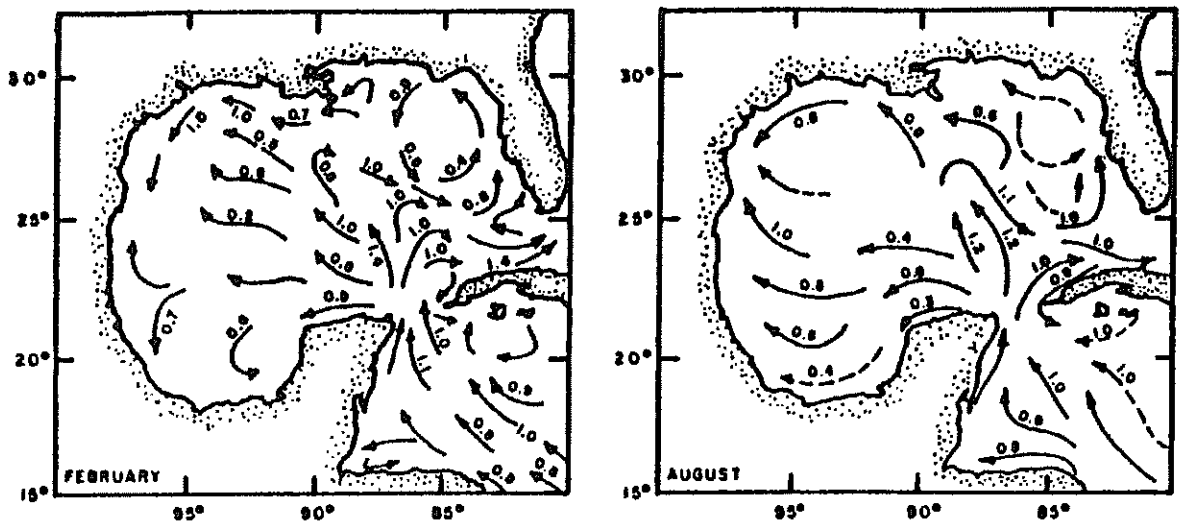

Figure 3-2

Surface Currents in the Gulf of Mexico (after Nowlin, 1971).

Schroeder (1990) found that currents at a current meter moored at 60 meters depth rapidly shifted from westerly at 5 to 10 cm/sec to north-northwesterly at 25 to 30 cm/sec and reached a maximum of 55–60 cm/sec. At 315-foot depth, the currents went from southerly at 5 cm/sec to north-northeasterly at 15 cm/sec. The current shift was also accompanied by a 34°F decrease in temperature, attributed to storm-caused upwelling of cold bottom water over the shelf break (Halper and Schroeder, 1990).

3.3.3 Water Quality

The results of chemical analyses for compounds detected in water and elutriate samples are presented in PBS&J (2004). Elutriates were prepared from test sediment and channel water for chemical analysis, which provides information on those constituents that are dissolved into the water column during dredging and open-water placement. A comparison of the elutriate results with the channel water results indicated minor increases in nickel, upon elutriate preparation at most channel stations, and more-dramatic increases for several metals at the Reference station. The water and elutriate samples at the ZSF-REF exceeded both the acute and chronic copper WQC, and the elutriate sample also exceeded the chronic nickel and zinc WQC but not the acute WQC. The acute WQC are more appropriate for these analyses since these are grab samples, and thus are a snapshot in time, not from a series of samples taken over time or a 4-day average like the chronic WQC. This station is not in the channel extension, no material would be dredged from it, and sediment was only collected there to use as a reference.

SPP bioassays were also conducted on composite proposed Extension Channel samples and a True and Reference Control (PBS&J, 2004). There were no tests in the SPP bioassays in which survival in the True Control was greater than survival in the treatments and the difference exceeded 10 percent (EPA/USACE, 2003). Therefore, these data yielded no indication of toxicity to sensitive marine organisms during dredging or placement of virgin material.

3.3.4 Sediments

3.3.4.1 Sediment Quality and Characteristics

Sediment concentrations of detected compounds are also presented in PBS&J (2004). There were no trends evident in the sediment chemistry data, not surprising since all of these stations are virgin Gulf bottom and the only distinction to the channel extension stations being that they are in line with the existing SNWW Entrance Channel. Copper and nickel concentrations in CH-130 sediments seemed to be higher, relative to the other stations, but this was not true for the duplicate of CH-130. The concentrations of all organics, except total organic carbon (TOC) were below detection limits.

There are no sediment quality criteria with which to compare concentrations in the sediment. However, there are several different guidelines that are used to look for a cause for concern in sediment samples, one of which is the Effects Range Low, or ERL (Buchman, 1999), used as a potential trigger to identity a cause for concern. ERLs were developed by a technique that demonstrates no cause and effect from the chemicals in the data set, and when ERLs derived from sets of data from different areas are compared, the

results are inconsistent (USACE, 1998b). Since the ERLs are not based on cause and effect data, they are used only to determine a possible "cause of concern."

No ERLS were exceeded by the sediment concentrations from the ZSF, so these data indicate no cause for concern. Even so, SP bioassays and bioaccumulation studies were conducted on composite proposed Extension Channel samples and a True and Reference Control (PBS&J, 2004). As with the SPP data, there were no tests in the SP bioassays in which survival in the Reference Control was greater than survival in the treatments and the difference exceeded 10 percent (20 percent for the amphipods). Therefore, the survival data from the SP bioassay indicate no potential for environmentally unacceptable toxic impacts to benthic organisms from the placement of sediments from SNWW Entrance Channel Extension stations onto nearby bottom sediments.

No organic chemicals were found above detection limits in test organism tissues from the bioaccumulation studies. Of the metals, arsenic, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc, plus cyanide, were found in tissue samples above detection limits. The concentrations of none of the metals in tissues of *N. virens* or *M. mercenaria* exposed to test sediments were significantly higher than the respective concentrations in Reference Control organisms. However, cyanide concentrations in tissues of *N. virens* exposed to SN-CH-100 sediments were significantly greater than in the Reference polychaetes. Therefore, there is some indication of bioaccumulation from exposure to these sediments. The significance of this is not clear. There is no FDA Action level for cyanide, and cyanide was not detected in any water, elutriate, or sediment sample. Cyanide was not detected in all replicates of *N. virens* exposed to SN-CH-100 sediments; was found in some replicates of *N. virens* exposed to SN-CH-160 sediments, although not at concentrations significantly greater than Reference Control tissues; and was found in some replicates of *M. mercenaria* exposed to Reference, SN-CH-130, and SN-CH-160 sediments, but not SN-CH-100 sediments. Additionally, there should be no difference in the proposed Extension Channel station sediments, relative to the reference sediments since there is no channel in place at this time.

The surface sediments in the area are predominantly sand: 26 percent of the samples contained >90 percent sand, 41 percent contained >80 percent sand, and only two samples had a sand content less than 50 percent. The maximum sand content was 99.1 percent sand at Station ZSF-55.

3.3.4.2 Sediment Transport

The Texas shoreline is an ever-changing interface of land and the waters of the Gulf. Sedimentation processes result from the interaction between the winds, waves, currents, tides, and other active agents in the littoral zone. Shores erode, accrete, or remain stable, depending on the rates at which sediment is supplied to and removed from the shore.

Energy for sediment dispersal on the Texas shelf is attributed primarily to meteorological events (prevailing winds and storms) and secondarily to astronomic tidal events (Shideler, 1978). The most effective normal winds are the persistent southeasterly winds and the short-lived, intense northers. The

predominant southeasterly winds, combined with the current regime in the northwestern Gulf (Section 3.3.2.2), generate a net longshore drift in a westerly direction off Sabine Pass. Sediments supplied by this longshore drift are derived primarily from the Mississippi River. Some sediment is also carried to the shoreface by tropical storms and hurricanes. The northers create strong waves and complicated circulation patterns (resulting in resuspension of sediments), strong ebb currents, and the neutralization of flood currents.

Moherek (1978) studied four different sediment types containing different quantities of sand, silt, and clay found near Galveston Bay. The study was conducted to determine the bottom water velocity necessary to cause rapid erosion of the bottom sediments, i.e., to cause movement of both the suspended load and the bed load. He found a critical erosion velocity of 0.47 knot, with little variation among the sediment types. As noted in Section 3.3.2.2, on an annual basis, the bottom ocean currents near Sabine Pass should have sustained bottom velocities of at least twice the critical erosion velocity for several consecutive days. This would cause significant sediment movement. At a bottom water speed of around 4 knots, which can be expected every 3 years (Section 3.3.2.2), massive bed load erosion can be expected.

The astronomic tidal components of the hydraulic regime are most influential in the sedimentation processes by providing suspended sediment through coastal tidal inlets. Wind-drift currents are the dominant sediment transport mechanism compared to the residual wave-drift components. Minimal wave-drift sediment is transported along the Texas coast under normal wave conditions; however, storm waves, which possess longer periods, have substantial influence. In a few hours, hurricanes and severe tropical storms can produce erosion and deposition equal to the effect of normal conditions over months or even years. Storm tides are also important as dispersal agents by intensifying the discharge of sediments from coastal inlets. Also, rip currents and littoral currents along the coastal zone, in addition to tidal currents, are important to regional sediment dispersal.

Motion of sediment in the littoral zone is initiated by wind-induced waves that then drive current systems that transport the sediment. Breaker height is significant in determining the quantity and size of sand to be set in motion, and breaker angle with the coast is a major factor in determining the direction and rate of longshore transport. Onshore-offshore transport in the littoral zone is dictated by sediment size, wave steepness, and beach slope. In general, high, steep waves transport material offshore, while low waves move sediment onshore. Waves may break and reform three or four times across the shoreface, producing an associated line of breakers and breaker bars. These shell and sand breaker bars change size and shift position as determined by the variable wave height. Variations in the wind direction and wave approach can mean that longshore transport direction can vary hourly, daily, or seasonally with the wind.

3.4 BIOLOGICAL ENVIRONMENT

3.4.1 Plankton

The plankton community comprises phytoplankton, zooplankton, and ichthyoplankton. The phytoplankton are primary producers and form the basis of the food chain, along with bacteria in the

offshore environment. Phytoplankters are not free-swimming organisms but move with currents and tides. Because of the more-stable environment offshore, relative to salinity, nutrient concentration, vertical mixing, and predation, the phytoplankton community in the Gulf is more stable than in estuarine waters (MMS, 2002). The water feeding into the Gulf from the Caribbean is low in nutrients. However, in the winter, with the overturning of the surface waters, nutrient-rich bottom water is brought to the surface to supply nutrients. In late spring, nutrient-rich river discharge reaches its maximum, and the phytoplankton also reaches its maximum. During late summer and fall, with the decline in riverine discharge and the concomitant decrease in nutrients, the phytoplankton decline (Institute for Marine Remote Sensing, 2008). In the Gulf near Sabine Pass, the phytoplankton are dominated by diatoms, which make up more than 90 percent of phytoplankters (MMS, 2002). The dominant diatoms are *Nitschia*, *Thalassiothrix*, *Thalassionema*, *Skeletonema*, *Chaetoceros*, and *Asterionella* (SEADOCK, 1976; Simmons and Thomas, 1962). The diatom domination of the phytoplankton changes to a coccolithophorid-dominated phytoplankton in deeper waters (Baalen, 1976).

Zooplankton, the faunal portion of the plankton, are mostly free-swimming organisms, as opposed to the phytoplankton, and comprise the organisms that spend all of their life stages in the water column (holoplankton) and the organisms that spend only larval stages in the water column (meroplankton). Holoplankton in the project include protozoans, gelatinous zooplankton, copepods, chaetognaths, polychaetes, and euphausids, whereas the meroplankton include also polychaetes plus echinoderms, gastropods, bivalves, and fish larvae and eggs (MMS, 2002). These latter two comprise the ichthyoplankton. Meroplankton constitute 3 to 5 percent of the total zooplankton (Harper, 1977).

Among the ichthyoplankton, Sherman et al. (1983) determined that the five most abundant families in the northwestern quadrant of the Gulf were Myctophidae (lanternfishes), Gonostomatidae (bristlemouths), Bregmacerotidae (codlets), Gobiidae (gobies), and Clupeidae (herrings). MMS (2002) adapted the data from Ditty et al. (1988) and determined that the species that were found in shallower water (less than 82 feet) north of the 26th parallel in the Gulf were primarily inshore demersal species; e.g., Atlantic bumper (*Caranx ruber*), spotted seatrout (*Cynoscion nebulosus*), pigfish (*Orthopristis chrysoptera*), and black drum (*Pogonias cromis*).

3.4.2 Benthos

Macroinfaunal communities along the Texas shelf are related to distributions of sediment texture and to water depth (Flint and Rabalais, 1981). The number of species, number of individuals, and diversity were highest in shallow waters and declined with increasing depth.

Benthos were included in the USACE study of the ZSF (PBS&J, 2004). Fourteen stations were sampled for benthic macroinvertebrate characterization analysis (see Figure 3-1). The detailed methodology and results of these analyses are included in the report provided by Barry A. Vittor & Associates (BV&A) and included in Appendix E of PBS&J (2004). The following is taken from the BV&A report.

A total of 1,199 organisms, representing 75 taxa, were identified. Polychaetes were the most numerous organisms present representing 57.7 percent of the total assemblage, followed in abundance by malacostracans (18.3 percent) and bivalves (7.7 percent). Polychaetes represented 44.6 percent of the total number of taxa followed by malacostracans (21.1 percent) and bivalves (13.7 percent). A mixed assemblage of annelids, mollusks, and arthropods was found at stations 1, 3, 10, 12, 42, 49, and 51, and annelids dominated the assemblage at the remaining stations.

The dominant taxa collected from the Sabine Pass stations were the polychaetes *Spiophanes bombyx*, *Mediomastus* (LPIL), *Magelona* sp. H, and *Prionospio* (LPIL), representing 6.2 percent, 5.4 percent, 5.0 percent, and 4.9 percent of the assemblage, respectively. The most widely distributed taxon was the polychaete family, Onuphidae (LPIL), which was found at 79 percent of the stations.

The mean number of taxa per station ranged from 4.7 at Station 10 to 27.0 at Station 26. Mean density per station ranged from 4,055 organisms/square foot at Station 3 to 30,265 organisms/square foot at Station 26. Taxa diversity ranged from 1.69 at Station 10 to 3.61 at Station 35. Taxa evenness was uniformly high and ranged from 0.77 at Station 10 to 0.97 at Stations 1 and 12.

Wet-weight biomass was highly variable among stations; 11 of the 14 stations had an average biomass of <0.35 gram/square meter (g/m^2). The highest biomass was found at Station 42 (0.92 g/m^2).

The stations formed four distinct clusters: Stations 10 and 42 (high sand content, 89 to 95 percent sand); stations 26, 28, 33 and, 35 (68 to 75 percent sand); stations 17, 19, 44, 49, and 51 (77 to 91 percent sand, except for Station 49); and stations 1, 3, and 12 (lowest sand content, less than 60 percent sand, except for Station 12). The cluster of stations 26, 28, 33, and 35 had the highest station densities, and the assemblages were dominated by amphipods in the genus *Ampelisca* and the polychaetes, *Magelona* and *Mediomastus*. The cluster of stations 17, 19, 44, 49, and 51 had densities lower than stations 26, 28, 33, and 35, but higher than the remaining stations. The remaining two clusters of stations had the lowest taxa richness, and densities and were not dominated by the amphipod/polychaete assemblage seen at the other stations. Only stations 12 and 49 were not in clusters strongly based on sand content.

3.4.3 Nekton

Offshore nekton of the project area include a combination of species utilizing both the bay and Gulf, species found exclusively on the shelf at varying depths year-round, and species that migrate into the area from southern latitudes in response to the warming of shelf waters. Additionally, since 46 percent (Mager and Ruebsamen, 1988) of all wetlands and estuaries of the southeastern U.S. that are important to fishes found offshore are located in the Gulf, finfish of the north-central Gulf are dominated by estuary-dependent fish and shellfish. As can be seen by the landings data in Section 3.5.1.1, these include menhaden, shrimps, crabs, and sciaenids. Common species in the surf zone include Gulf whiting (*Menticirrhus littoralis*) and Atlantic threadfin (*Polydactylus octonemus*) (Hoese and Moore, 1998). Studies by McFarland (1963) and Gunter (1958) on the inshore fish fauna of the central coast of Texas indicated Florida pompano (*Trachinotus carolinus*), southern kingfish (*Menticirrhus americanus*), striped

mullet (*Mugil cephalus*), scaled sardine (*Harengula jaguana*), and Atlantic threadfin as dominants. Other dominant fish, according to Gunter (1958), include Atlantic croaker (*Micropogonias undulatus*), tidewater silverside (*Menidia beryllina*), longnose killifish (*Fundulus similis*), and striped anchovy (*Anchoa hepsetus*). Based on a comparison of data from 1945 and 1947 to 1949, Gunter noted that dominant species were likely to vary from year to year.

According to MMS (2002), the inshore shelf area (depth from 20 to 50 feet) is dominated by Atlantic croaker, spot (*Leiostomus xanthurus*), black drum, silver seatrout (*Cynoscion nothus*), southern kingfish, and Atlantic threadfin; the middle shelf zone (depth from 90 to 150 feet) by longspine porgies (*Stenotomus caprinus*), although sciaenids are included; and the outer shelf zone (depth from 210 to 360 feet) by blackwing searobin (*Prionotus rubio*), Mexican searobin (*Prionotus paralatus*), and shoal flounder (*Syacium gunteri*). Darnell et al. (1983) and Darnell and Kleypas (1987) found that the abundance of fish resources was highest between Galveston and the Mississippi delta for all seasons of the year.

A phenomenon that impacts the nekton and the benthos results from the heavy nutrient input of the large amount of fresh water encroaching on the shelf, as noted in Section 3.3.2.2 above, and a well-developed pycnocline (Cochrane and Kelly, 1986; Dinnel and Wiseman, 1986). A large area of the deeper waters of the Texas/Louisiana shelf from Galveston, Texas, to the Mississippi River Delta becomes anoxic or hypoxic from the combination of these two events (Rabalais et al., 1991), beginning in the late spring, reaching a maximum in midsummer, and disappearing in the fall. The low wind speeds of the summer months and the strong pycnocline do not allow sufficient mixing to bring higher-oxygen-content surface water to the deeper, hypoxic layer (Rabalais et al., 1996). This hypoxic layer has insufficient oxygen (less than 2 milligrams per liter [mg/L] oxygen) for most nekton or epifauna (http://www.nos.noaa.gov/ products/pubs_ hypox.html).

3.4.4 Threatened and Endangered Species

Based on correspondence with the National Marine Fisheries Service (NMFS), 11 species of aquatic vertebrates that are considered endangered or threatened may be present in the study area marine environment. These are the blue whale (*Balaenoptera musculus*), the fin whale (*Balaenoptera physalus*), the humpback whale (*Megaptera novaeangliae*), the sei whale (*Balaenoptera borealis*), the sperm whale *Physeter catodon* (=*P. macrocephalus*), the green sea turtle (*Chelonia mydas*), the hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempi*), the leatherback sea turtle (*Dermochelys coriacea*), the loggerhead sea turtle (*Caretta caretta*), and the Gulf sturgeon (*Acipenser oxyrinchus desotoi*).

The U.S. Fish and Wildlife Service (USFWS) added one species of aquatic vertebrate to the threatened or endangered list provided above by the NMFS, the West Indian manatee (*Trichechus manatus*) and one bird, the piping plover (*Charadrius melodus*). All of the species, with the exception of the bald eagle, are discussed in detail in the SNWW CIP FEIS, to which this ODMDS FEIS is appended, and the Biological

Assessment, also appended to the SNWW CIP FEIS as Appendix G1, and that discussion are not duplicated here, although any impacts from site designation to these species is discussed in Section 4.2.2.5. The bald eagle and brown pelican (*Pelecanus occidentalis*) were delisted while this FEIS was in preparation

3.4.5 Marine Sanctuaries and Special Biological Resource Areas

There are several biological resource areas within the project area. For instance, the McFaddin and Texas Point National Wildlife Refuges (NWR), located on the upper Texas Coast, supply important feeding and resting habitat for migrating and wintering populations of waterfowl. The 55,000-acre McFaddin NWR consists of the largest remaining freshwater marsh on the Texas Coast and thousands of acres of intermediate to brackish marsh, while neighboring Texas Point NWR encompasses 8,900 acres of fresh to salt marsh with some wooded uplands and prairie ridges (USFWS, 2005). Sea Rim State Park, 4,141 acres of marshland with 5.2 miles of Gulf beach shoreline, is located in Jefferson County, south of Port Arthur. A unique environment, Sea Rim State Park provides a valuable habitat for many wetland species. Finally, the Flower Gardens Banks National Marine Sanctuary is located about 105 miles directly south of the Texas/Louisiana border. This sanctuary is comprised of the northernmost coral reefs in the U.S.

There are three artificial reefs that are part of the Texas Parks and Wildlife Department's (TPWD) Texas Artificial Reef Program, which are relatively near the proposed ODMDSs: Basco's Reef, S.A.L.T. Reef, and Sabine Reef (see Figure 2-7). Basco's Reef (HI-117) is located 23 nautical miles from Sabine Pass in 50 feet of water and has received numerous donations. S.A.L.T. Reef (HI-85, 18 nautical miles from Sabine Pass, 43 feet of water) and Sabine Reef (HI-117, 22 nautical miles from Sabine Pass, 36 feet of water) have not yet received donations but are formally part of the Artificial Reef Program. S.A.L.T. Reef, which is closest to the proposed ODMDSs, is 6.6 miles from ODMDS B.

3.5 SOCIOECONOMIC ENVIRONMENT

3.5.1 Employment

Direct employment within the three study area ports, the Port of Beaumont, the Port of Port Arthur, and the Port of Orange, makes up a very small fraction of the overall employment that is indirectly tied to port activities. A detailed description of the population, employment, and other socioeconomic features of the SNWW counties, parishes, and states is available in the FEIS. However, conservative estimates of all port, manufacturing, and industrial-related employment, based on information from the three area ports and from local chambers of commerce, indicates approximately 30,000 jobs existed in the study area in 2002 (Beaumont Chamber of Commerce, 2002; Greater Orange Chamber of Commerce, 2002; Nederland Economic Development Corporation, 2002; Port Arthur Economic Development Corporation, 2002; Southwest Louisiana – The Chamber, 2002). The particular "industrial mix" of the study area is heavily concentrated in manufacturing, port-related services, construction, transportation, and public utilities.

3.5.1.1 Commercial and Recreational Fisheries

Commercial fishing within the Sabine Lake system is covered in the SNWW CIP FEIS and is not repeated here. Table 3-2 provides the annual commercial fishery statistics for Louisiana and Texas for 2002 and 2003 and, for the Grand Totals, for the whole Gulf. As can be seen the commercial catch and the value of that catch for Louisiana was 1.3 billion pounds ($307 million) and 1.2 billion pounds ($294 million) for 2002 and 2003, respectively. For Texas, the numbers were 93 million pounds ($173 million) and 96 million pounds ($168 million) for 2002 and 2003, respectively. Menhaden clearly dominated the poundage for Louisiana, whereas shrimp accounted for most of the weight in Texas. Shrimp dominated both states in terms of value. Commercial finfish catches in the Gulf result from beach seines (under certain circumstances), longlines, and incidental catches in shrimp trawls.

Adult brown shrimp (*Farfantepenaeus aztecus*) and white shrimp (*Litopenaeus setiferus*) are members of the offshore benthic epi community in two depth zones. Chittenden and McEachron (1976) have determined that white shrimp dominate from 12 to 72 feet and brown shrimp dominate from 72 to 360 feet. White shrimp spawn in waters up to 164 feet deep, however (Chittenden and McEachron, 1976), while brown shrimp may spawn at any depth greater than 45 feet (Monaco et al., 1989). Buchman (1976) found Penaeid shrimp larvae from April to October in depths of 24 to 45 feet. Peak abundances occurred in spring and fall, coinciding with the spawning of white shrimp. Farther offshore, from 72 feet to 269 feet depth, Penaeid shrimp larvae occurred throughout the year, with peaks in the spring and late fall/early winter. Greatest abundance occurred during the later peak and were assumed to be brown shrimp. Greatest concentrations of all Penaeid shrimp larvae were consistently found in 148 feet of water over a 4-year period.

The blue crab (*Callinectes sapidus*) fishery is located in the bays as well as the Gulf. From 1982 to 1986 an average of 7.1 million pounds of blue crabs was landed in Texas at an average value of $2.8 million.

The depth zone occupied by the white shrimp community (12 to 72 feet) is dominated by the Atlantic bumper (*Chloroscombrus chrysurus*), the Atlantic croaker, silver seatrout, star drum (*Stellifer lanceolatus*), sand seatrout (*Cynoscion arenarius*), bay anchovy (*Anchoa mitchilli*), Gulf butterfish (*Peprilus burti*), and hardhead catfish (*Arius felis*) (Chittenden et al., 1980).

Ilg et al. (1983), working at 33 feet off of Cameron, Louisiana, caught primarily Atlantic bumper, star drum, Atlantic croaker, white shrimp, blue crab, penaeid shrimp (*Trachypenaeus similis*), swimming crab (*Portunus gibbesii*), and Atlantic brief squid (*Lolliguncula brevis*). Some small variations may occur in the nekton along the northwestern Gulf coast, but the eight most abundant finfish caught by Ilg et al. (1983) in Louisiana were the same eight species caught by Chittenden et al. (1980) along the middle Gulf coast of Texas. Farther offshore, in the depth zone occupied by the brown shrimp community (72 to 360 feet), Buchman (1976) found that the demersal finfish were dominated by longspine porgy (*Stenotomus caprinus*), shoal flounder (*Syacium gunteri*), inshore lizard fish (*Synodus foetens*), rock sea bass

Table 3-2
Gulf of Mexico Annual Commercial Landing Statistics

Year	State	Species	Metric Tons	Pounds	$
2002	Louisiana	Amberjack, Greater	118	260,872	266,761
2002	Louisiana	Buffalofishes	1,431	3,154,516	493,352
2002	Louisiana	Catfish, Blue	1,422	3,133,775	1,412,088
2002	Louisiana	Catfish, Channel	688	1,517,686	760,298
2002	Louisiana	Catfish, Flathead	126	278,502	118,776
2002	Louisiana	Crab, Blue	22,567	49,751,400	29,762,629
2002	Louisiana	Crab, Blue, peeler	148	327,262	699,311
2002	Louisiana	Crayfishes or Crawfishes	7,077	15,601,729	8,073,793
2002	Louisiana	Drum, Black	1,415	3,118,298	1,616,828
2002	Louisiana	Drum, Freshwater	356	783,813	116,088
2002	Louisiana	Gars	312	688,360	485,912
2002	Louisiana	Herrings	369	814,023	99,615
2002	Louisiana	Mackerel, King	393	866,295	1,045,861
2002	Louisiana	Menhaden, Atlantic	493,406	1,087,761,750	66,419,446
2002	Louisiana	Mullet, Striped	1,159	2,554,652	1,690,825
2002	Louisiana	Oyster, Eastern	6,333	13,961,579	30,318,456
2002	Louisiana	Shad, Gizzard	836	1,842,046	211,161
2002	Louisiana	Shark, Blacktip	361	794,894	182,574
2002	Louisiana	Sheepshead	718	1,583,357	325,344
2002	Louisiana	Shrimp, Brown	24,231	53,420,402	61,280,654
2002	Louisiana	Shrimp, Seabob	3,176	7,000,965	2,563,628
2002	Louisiana	Shrimp, White	21,431	47,245,582	77,272,332
2002	Louisiana	Snapper, Red	993	2,189,209	4,702,302
2002	Louisiana	Snapper, Vermillion	343	755,593	1,307,519
2002	Louisiana	Swordfish	318	700,105	1,463,338
2002	Louisiana	Tuna, Yellowfin	1,547	3,411,077	10,345,941
		Subtotal	592,362	1,305,921,816	306,726,051
2002	Texas	Crab, Blue	3,192	7,037,012	4,522,532
2002	Texas	Drum, Black	1,057	2,330,675	1,819,594
2002	Texas	Oyster, Eastern	2,136	4,707,968	11,276,101
2002	Texas	Shrimp, Brown	20,757	45,760,756	86,204,570
2002	Texas	Shrimp, Marine, Other	638	1,407,107	3,898,592
2002	Texas	Shrimp, Pink	232	510,261	989,078
2002	Texas	Shrimp, Rock	170	373,649	421,349
2002	Texas	Shrimp, Seabob	342	753,721	297,821
2002	Texas	Shrimp, White	11,765	25,936,919	55,717,768
2002	Texas	Shrimp, Atlantic and Gulf, Roughneck	181	398,531	143,992
2002	Texas	Snapper, Red	671	1,478,471	3,362,801
2002	Texas	Tuna, Yellowfin	193	425,645	1,179,740
		Subtotal	42,211	93,059,148	173,340,477

Table 3-2 (Concluded)
Gulf of Mexico Annual Commercial Landing Statistics

Year	State	Species	Metric Tons	Pounds	$
2003	Louisiana	Amberjack, Greater	145	320,082	267,486
2003	Louisiana	Buffalofishes	1,510	3,329,825	525,239
2003	Louisiana	Catfish, Blue	1,246	2,745,843	1,229,752
2003	Louisiana	Catfish, Channel	398	877,240	443,273
2003	Louisiana	Catfish, Flathead	104	229,119	109,481
2003	Louisiana	Crab, Blue	21,634	47,693,720	32,591,174
2003	Louisiana	Crab, Blue, peeler	153	337,585	767,493
2003	Louisiana	Crayfishes or Crawfishes	3,754	8,275,643	4,814,307
2003	Louisiana	Drum, Black	1,595	3,516,737	1,937,831
2003	Louisiana	Drum, Freshwater	285	627,183	89,262
2003	Louisiana	Gars	351	773,474	516,098
2003	Louisiana	Herrings	314	693,146	95,695
2003	Louisiana	Mackerel, King	413	910,550	990,113
2003	Louisiana	Menhaden, Atlantic	436,449	962,196,400	58,443,314
2003	Louisiana	Mullet, Striped	2,051	4,522,040	2,590,590
2003	Louisiana	Oyster, Eastern	6,172	13,606,883	33,368,831
2003	Louisiana	Shad, Gizzard	658	1,449,694	182,434
2003	Louisiana	Shark, Blacktip	556	1,225,461	198,236
2003	Louisiana	Sheepshead	743	1,637,948	413,031
2003	Louisiana	Shellfish	287	632,057	50,604
2003	Louisiana	Shrimp, Brown	26,583	58,605,029	51,964,591
2003	Louisiana	Shrimp, Seabob	1,412	3,112,376	908,691
2003	Louisiana	Shrimp, White	28,991	63,912,851	82,069,068
2003	Louisiana	Snapper, Red	782	1,723,357	3,955,593
2003	Louisiana	Snapper, Vermillion	478	1,052,991	1,895,816
2003	Louisiana	Tuna, Yellowfin	1,367	3,012,875	8,950,213
		Subtotal	539,777	1,189,991,546	294,352,001
2003	Texas	Catfish, Blue	2,182	4,811,275	3,157,047
2003	Texas	Drum, Black	761	1,676,687	1,365,092
2003	Texas	Grouper, Yellowedge	128	282,536	752,655
2003	Texas	Oyster, Eastern	3,091	6,813,469	16,493,273
2003	Texas	Shrimp, Brown	24,300	53,571,724	90,043,487
2003	Texas	Shrimp, Marine, Other	567	1,250,309	3,658,940
2003	Texas	Shrimp, Pink	251	554,132	1,247,880
2003	Texas	Shrimp, Rock	737	1,624,802	1,851,721
2003	Texas	Shrimp, Seabob	288	634,676	210,362
2003	Texas	Shrimp, White	9,761	21,519,276	42,456,408
2003	Texas	Snapper, Red	729	1,606,782	3,756,617
2003	Texas	Tuna, Yellowfin	125	274,768	719,638
		Subtotal	43,601	96,122,318	168,316,508
Grand Total			**1,509,149**	**3,327,070,559**	**1,394,508,722**

Source: NMFS (2005)

(*Centropristis philadelphica*), and goatfish (*Upeneus parvus*). Farther south, in the study area, the longspine porgy was replaced by blackear bass (*Serranus atrobranchus*) and wenchman (*Pristipomoides aquilonaris*).

There is no commercial oyster harvesting in Sabine Lake or Sabine Pass because the areas are closed and under prohibited status, according to Texas Department of State Health Services, Seafood and Aquatic Life Group, on December 5, 2005. Due to a Memorandum of Understanding between the States of Texas and Louisiana, the Texas Department of State Health Services can also speak for oyster harvesting in Louisiana waters in Sabine Lake and Sabine Pass.

Charter boat and party boat fishing is important in both sport and commercial fishing. According to the USFWS, recreational saltwater fishing increased by 22 percent between 1991 and 2001 (USFWS, 2002). Party boats are large vessels that accommodate numerous fishermen and usually restrict their trips to a few distinct areas. Charter boats generally have a specific goal of catching particular game fish and usually accommodate only one to several customers. Charter boat operators work both bay and Gulf waters, depending on the target species, generally use smaller, more-mobile boats, and range over a larger area. During the warmer months, offshore waters produce king and Spanish mackerel, tarpon and billfish. However, most of these fish are caught in water depths greater than 70 feet (USFWS, 2002).

Within northeastern Texas and southwestern Louisiana, recreational anglers contributed more than $400 million to the local economy in 1996, with more than half a million people involved in this leisure-time activity (Davis, 1996).

3.5.2 Shipping

Import and export data through the ports served by the SNWW are presented in the SNWW CIP FEIS. In 2007, the SNWW ranked 5th in the U.S. in tonnage volume. As individual ports, Beaumont ranked 4th in the nation and Port Arthur ranked 28th with 29.3 million short tons. Sixty percent of the tonnage consisted of deep-draft ocean-going movements, with the remaining 40 percent consisted of shallow-draft GIWW traffic. SNWW's 2002 to 2006 crude petroleum waterborne imports comprised 12 percent of the U.S. and 18 percent of the western Gulf region. Beaumont’s 2005 to 2007 wheat exports are 5 percent of the U.S. total, and approximately 10 percent of U.S. fertilizer exports.

3.5.3 Beaches and Recreational Areas

Wildlife-watching, particularly birding, is an extremely popular activity within the study area and in the nearby vicinity. Among almost 1.6 million people who participated in wildlife-related recreation in the State of Louisiana in 2001, 60 percent were involved in wildlife-watching. In addition, among the 5.0 million people who participated in wildlife-related recreation in the State of Texas in 2001, 65 percent were involved in wildlife-watching (USFWS, 2002). There are several sections of the Great Texas Coastal Birding Trail that are located in or near the project study area as well as several wildlife

management areas, parks, and wildlife preserves and refuges (a detailed list is available in the SNWW CIP FEIS, Section 3.14.3.5).

Two USFWS NWRs occur near Sabine Pass, both on the Texas side (Sabine NWR does not front the Gulf Coast). Texas Point NWR is located just west of Sabine Pass at the Gulf coast. The area is a modern Chenier Plain. The linear features that reflect the ridge and swale topography are fanned out at Sabine Pass and converge to the west. The ridge supports transitional areas that support communities that are intermediate between upland and wetland. Gulf cordgrass (*Spartina spartinae*) is the common dominant species in these grassland/shrublands. The intervening swales support salt and brackish marshes (USFWS, 1998; White et al., 1987). McFaddin NWR is located in the southwest part of the study area between the GIWW and the Gulf shoreline. The predominant habitats include extensive high and low brackish marsh. The refuge also includes the beach and dune complex and scattered transitional areas. Sea Rim State Park is located adjacent to and east of McFaddin NWR and is also between the GIWW and the Gulf shoreline. The predominant habitats include extensive high and low brackish marsh. The park also includes the beach and dune complex and scattered transitional areas. Red drum (*Sciaenops ocellatus*), flounder (*Paralichthys* spp.), alligator gar (*Atractosteus spatula*), blue catfish (*Ictalurus furcatus*), and blue crab are some of the species caught by fishermen at McFaddin and Texas Point NWRs. Waterfowl hunting opportunities are available seasonally on both McFaddin and Texas Point NWRs. Blue and green-winged teal (*Anas discors* and *A. crecca*), mottled ducks, gadwall (*A. strepera*), scaup (*Athya* spp.), and shoveler (*Anas* spp.) are hunted among the 32 different hunt units. A mile-long cattle walk and primitive trail on Texas Point NWR provide foot access to the marsh for bird-watching and wildlife photography. There are 8 miles of interior roads on the McFaddin NWR that provide wildlife viewing opportunities and access to various boat ramps. There is also a ¼-mile birding trail at the entrance of Texas Point NWR.

Additionally, on the Texas side (on the west side) of the Sabine Pass, is the Sabine Pass Battleground State Historical Park. Farther west along the Gulf coastline is the Sea Rim State Park. This area, like McFaddin NWR, is characterized by (mostly) undeveloped marshland and beaches, with numerous small lakes and wetland areas. The eastern side of Sabine Pass consists almost entirely of undeveloped marshland and beaches. State Highway (SH) 82 parallels the Gulf coastline and connects with Johnson's Bayou, Holly Beach, Cameron, and the Calcasieu Lake area to the east.

The Chenier coastline has been severely eroding in Texas. For example, the Gulf beach is heavily eroded and virtually nonexistent at Texas Point where saline marshes can occur on the coastline. The shoreline in Louisiana is accreting near the jetties but is eroding nearer to Holly Beach.

3.5.4 Mineral Extraction and Transport

The only aspects of mineral extraction in the Sabine Pass area that would impact the siting of an ODMDS are offshore platforms and pipelines. These are important both as obstructions and fishery resource areas. As shown on Figure 2-2, and discussed in Section 2.3.4.6, there are only two pipelines and possibly one platform in the ZSF.

3.5.5 Cultural and Historic Sites

The cultural resources of the area are discussed in detail in the SNWW CIP FEIS and are not repeated here. However, much of that discussion does not include the ZSF. It does indicate that there are no sites of concern in the existing PAs as does EPA (1983a). An examination of Section 2.3.4.5 and Figure 2-4 confirms that observation. Figure 2-4 also includes areas of Texas Water Culturally Sensitive areas, Offshore Sensitive Areas, and High Probability Areas, based on MMS information (Section 2.3.4.5). These are not areas with known cultural or historic sites but are areas that, because of their location, are considered to have a high probably of occurrence of a cultural or historic site. As can be seen, the proposed ODMDSs are not in any "sensitive" leases. This information indicates that impacts to historic properties is unlikely. All of the proposed ODMDSs are located in Federal waters, and the Texas State Historic Preservation Officer (SHPO) declines to comment on matters outside State waters.

3.5.6 Military Restrictions

No military restrictions would apply to the SNWW CIP ODMDS selection process. There are no Military Warning Areas within roughly 60 miles of Sabine Pass (www.gomr.mms.gov/regulate/environ/MWA_boundries.pdf).

3.5.7 Political Boundaries

The border between Texas and Louisiana runs through the center of the Sabine Pass Channel and Sabine Lake, and north along the Sabine River. The offshore boundary between State and Federal waters, shown on Figure 2-3, runs 9 nautical miles offshore of Texas, and 3 nautical miles offshore of Louisiana. There are no other significant political boundaries in the area of interest to this ODMDS FEIS.

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4.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the site designation are discussed from two perspectives, even though some of the information may be repetitive. First, the preferred site is examined relative to the 5 general criteria and the 11 specific factors (40 CFR 228.5 and 40 CFR 228.6(a), respectively). Then the classic NEPA approach is undertaken that examines the environmental consequences of the action on the different aspects of the affected environment.

4.1 REGULATORY CHARACTERIZATION

4.1.1 Five General Criteria

4.1.1.1 40 CFR 228.5(a)

The dumping of materials into the ocean will be permitted only at sites or in areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation.

The preferred ODMDSs were selected, including appropriate buffer zones, to avoid sport and commercial fishing activities, as well as other areas of biological sensitivity. As noted in sections 2.3.4.3.1 and 2.3.4.7, Sabine Bank is an important commercial fishing area as well as a special, sensitive biological habitat that differs from the basically flat area surrounding the proposed ODMDSs. Therefore, the only excluded area was Sabine Banks, since it was the only sensitive area in the vicinity. The buffer zone was sized on the basis of the physical movement of the placement material, since sediment analysis concluded that the quality of the material proposed for discharge met the criteria of 40 CFR 227. Based on the use of the buffer zone, there should be no impacts to Sabine Bank. S.A.L.T. Reef, which is closest to the proposed ODMDSs, is 6.6 miles from ODMDS B (Figure 2-7). As noted in Section 2.3.4.3.1, there is no buffer zone for biologically sensitive areas since modeling did not indicate that material would flow out of the ODMDSs after placement. Therefore, no impacts would be expected to these artificial reefs. The preferred ODMDSs are outside the channel, including the navigation channel buffer zone, and safety fairways, and they avoid known navigational obstructions, although they do infringe on two Fairway Anchorage areas.

4.1.1.2 40 CFR 228.5(b)

Locations and boundaries of disposal sites will be so chosen that temporary perturbations in water quality or other environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery.

Complete testing was conducted on the virgin surface sediments proposed for dredging, including toxicity tests. Testing has been conducted on existing maintenance material for years, and that material was examined. There is no evidence that either the virgin or maintenance material would not meet the criteria of 40 CFR 227. The appropriate sizes for the buffer zones and for the preferred sites are based on sediment transport modeling and the physical oceanographic characterization of the Sabine Pass area. These, combined with the information on the expected quality of the material to be dredged, ensure that perturbations caused by placement would be reduced to ambient conditions at the boundaries of the site.

4.1.1.3 40 CFR 228.5(c)

If, at any time during or after disposal site evaluation studies, it is determined that existing disposal sites presently approved on an interim basis for ocean dumping do not meet the criteria for site selection set forth in 228.5–228.6, the use of such sites will be terminated as soon as suitable alternative disposal sites can be designated.

This criterion does not apply to the preferred sites because they are not existing sites approved on an interim basis. However, extensive monitoring programs including bathymetric scans; water, sediment and elutriate chemistry; and benthic infaunal analyses during construction should provide warning of potential problems. Extensive monitoring programs, including water, sediment and elutriate chemistry; bioassays; and bioaccumulation studies are routinely conducted under the Regional Implementation Agreement among the EPA, Region 6, and the USACE, Galveston and New Orleans districts (EPA/USACE, 2003) on all maintenance material. The results of that monitoring, plus studies conducted prior to designation of the existing ODMDSs (EPA, 1983a), indicated no problems at the existing ODMDSs in the past. There is no reason to expect problems with future maintenance material from the Extension. However, the alternatives analysis indicates that should the preferred sites be found in the future to be nonsuitable and de-designation of the preferred sites proves desirable, other areas are available and suitable for use as an ODMDS.

4.1.1.4 40 CFR 228.5(d)

The sizes of ocean disposal sites will be limited in order to localize for identification and control any immediate adverse impacts and to permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as a part of the disposal site evaluation or designation study.

The sizes of the sites are as small as possible to reasonably meet the criteria stated in 40 CFR 228.5 and 228.6(a). The determined size of each proposed ODMDS is 5.32 square statute miles (4.02 square nautical miles). The monitoring program should provide adequate surveillance to prevent adverse long-range impacts.

4.1.1.5 40 CFR 228.5(e)

EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the Continental Shelf and other such sites that have been historically used.

Cost, safety, and time factors plus difficulties with monitoring and surveillance dictate that the distance to the edge of the Continental Shelf off Sabine Pass precludes the use of any ODMDS off the shelf. Additionally, the lack of resilience of the deep-ocean benthic community indicates that an off-shelf placement site would cause severe impacts to the off-shelf benthic community. No environmental advantage to an off-shelf site was noted, whereas impacts to the human environment were less with a nearshore site for safety reasons. The historically used ODMDSs, while large enough to accommodate future maintenance material, are cost prohibitive.

4.1.2 Eleven Specific Factors

40 CFR 228.6(a) states that the factors included below as sections 4.1.2.1 through 4.1.2.11 would be considered in the selection process for site designation.

4.1.2.1 40 CFR 228.6(a)(1)

Geographical position, depth of water, bottom topography, and distance from coast.

The preferred sites, as determined in Chapter 2, are bounded by the following coordinates noted in sections 2.3.6 and 3.2.1 (see also Figure 2-3):

A	ODMDS	29° 24′ 47″ N, 93° 43′ 29″ W; 29° 24′ 47″ N, 93° 41′ 08″ W 29° 22′ 48″ N, 93° 41′ 09″ W; 29° 22′ 49″ N, 93° 43′ 29″ W
B	ODMDS	29° 21′ 59″ N, 93° 43′ 29″ W; 29° 21′ 59″ N, 93° 41′ 08″ W 29° 20′ 00″ N, 93° 41′ 09″ W; 29° 20′ 00″ N, 93° 43′ 29″ W
C	ODMDS	29° 19′ 11″ N, 93° 43′ 29″ W; 29° 19′ 11″ N, 93° 41′ 09″ W 29° 17′ 12″ N, 93° 41′ 09″ W; 29° 17′ 12″ N, 93° 43′ 29″ W
D	ODMDS	29° 16′ 22″ N, 93° 43′ 29″ W; 29° 16′ 22″ N, 93° 41′ 10″ W 29° 14′ 24″ N, 93° 44′ 10″ W; 29° 14′ 24″ N, 93° 43′ 29″ W

The water depth at the preferred sites ranges from 39 to 46 feet (see Figure 2-6), the bottom topography is flat, and proposed ODMDS A, the most-inshore proposed ODMDS, is approximately 19 miles from the coast at its closest point.

4.1.2.2 40 CFR 228.6(a)(2)

Location in relation to breeding, spawning, nursery, feeding or passage areas of living resources in adult or juvenile phases.

Nekton of the nearshore Gulf can be grouped in three categories: estuarine-dependent species; seasonal-migrant species; and permanent-resident species. The most abundant nearshore species are the estuarine-dependent species, which spawn offshore, move into the estuarine nursery areas as larvae to develop and mature, and return to the ocean as juveniles or adults. The seasonal migrants may also pass through the nearshore ocean waters in transit. The proposed ODMDSs can be described as being between the principal spawning areas and the estuarine nursery areas. The passage of organisms to and from the spawning-nursery areas is not expected to be adversely affected by the water column and benthic effects associated with ocean disposal of dredged material at the proposed ODMDSs. The migration route is not limited geographically to the ODMDSs. Therefore, migration and spawning are not expected to be adversely affected by dredged material disposal. The proposed ODMDSs are not expected to adversely affect surf zone or estuarine nursery areas. These areas are beyond the area potentially affected by ocean disposal operations. The migration paths of sea turtles and large marine mammals near the alternative sites are poorly known. It is unlikely that localized and intermittent dredged material disposal operations would adversely affect migration, feeding, or nesting of marine mammals and sea turtles. Endangered and threatened species are discussed in other sections of this EIS.

Sabine Bank is excluded, as are the jetties, but the jetties are so far from the proposed ODMDSs that no buffer zones were assigned. The jetties provide a migratory passage for brown and white shrimp, blue crab, drum, sheepshead, and southern flounder. Sabine Bank, as noted in Section 4.1.2.3 is at a safe distance from any proposed ODMDS. There are no partially submerged shipwrecks, which improve fishing, in any of the proposed ODMDSs.

4.1.2.3 40 CFR 228.6(a)(3)

Location in relation to beaches or other amenity areas.

The preferred sites are over 19 miles from any beach and Sabine Bank is at least 1.7 miles from any of the proposed ODMDSs. According to the modeling (Section 2.3.4.2), the maximum distance for the mounded dredged material to reach ambient depth was 1,081 feet (see Table 2-3). Doubling this would provide a buffer of 0.4 mile, only a fraction of the 1.7 miles to Sabine Bank.

4.1.2.4 40 CFR 228.6(a)(4)

Types and quantities of wastes proposed to be disposed of and proposed methods of release, including methods of packaging the waste, if any.

Table 2-1 provides the quantities of virgin and maintenance material expected to be dredged, by hopper dredge, from the proposed Extension that are proposed for placement in ODMDSs A–D. Table 2-2

provides the quantities of virgin and maintenance material expected to be dredged from the existing Entrance Channel and placed in existing ODMDSs 1–4. As was concluded in Section 2.3.4.8, there are no environmental quality constraints on the material to be dredged so no special location or precautions would be necessary for the placement of the approximately 18.7 mcy of new work material to be dredged during construction of the Extension, the approximately 24.3 mcy of new work material to be dredged during deepening of the existing Entrance Channel, the approximately 3.0 mcy of maintenance material per cycle expected to be dredged during Extension maintenance, and the approximately 10.5 mcy of maintenance material per cycle expected to be dredged during the existing Entrance Channel maintenance. The proposed ODMDSs were located in a sediment regime as near to that of the expected placement material as is possible in the general vicinity (Section 2.3.6).

4.1.2.5 40 CFR 228.6(a)(5)

Feasibility of surveillance and monitoring.

The preferred site is amenable to surveillance and monitoring. The proposed monitoring and surveillance program consists of (1) a method for recording the location of each discharge; (2) bathymetric surveys; and, (3) grain-size analysis, sediment chemistry characterization, and benthic infaunal analysis at selected stations.

4.1.2.6 40 CFR 228.6(a)(6)

Dispersal, horizontal transport, and vertical mixing characteristics of the area, including prevailing current velocity, if any.

These physical oceanographic parameters were used to develop the necessary buffer zones for the exclusion analysis and to determine if the size of the preferred sites was adequate. Predominant longshore currents, and thus predominant longshore transport, are to the west. Long-term mounding has not historically occurred in the existing ODMDSs. Therefore, steady longshore transport and occasional storms, including hurricanes, remove the placed material from the sites.

4.1.2.7 40 CFR 228.6(a)(7)

Existence and effects of current and previous discharges and dumping in the area (including cumulative effects).

The discussion of the results of chemical and bioassay testing of samples from the proposed Extension and surrounds concluded that there were no indications of water or sediment quality problems in the ZSF, including the preferred sites. Testing of past maintenance material indicates that it was acceptable for ocean placement under 40 CFR 227. Based on current direction and modeling of the virgin and maintenance material, the preferred sites were situated to prevent discharged material from reentering the channel and to ensure that any mounding poses no obstruction to navigation. No cumulative mounding

has been detected at the existing ODMDSs and there is no reason to expect any at the proposed ODMDSs.

4.1.2.8 40 CFR 228.6(a)(8)

Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance and other legitimate uses of the ocean.

The items from the above list that are pertinent to the present situation are shipping, mineral extraction, commercial and recreational fishing, and recreational areas. The preferred site would not interfere with these or other legitimate uses of the ocean because the exclusion process was designed to prevent the selection of sites that would interfere. Placement operations in the past have not interfered with other uses.

4.1.2.9 40 CFR 228.6(a)(9)

Existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys.

As noted briefly above in Section 4.1.1.2 and in detail in Sections 3.3.3 and 3.3.4, a baseline study was conducted on samples from the proposed Extension and the ZSF. No water or sediment quality concerns were indicated. Benthos of the area was characterized. In general, the water and sediment quality is good throughout the ZSF (PBS&J, 2004) and in the historically used ODMDSs (EPA, 1983a). This latter indicates that there have been no long-term impacts on water and sediment quality. As noted in EPA (1983a), there also appear to be no long-term impacts on the benthos at the historically used ODMDS, and none is expected with use of the proposed sites. The available data were used to determine the locations and sizes of the preferred sites.

4.1.2.10 40 CFR 228.6(a)(10)

Potentiality for the development or recruitment of nuisance species in the disposal site.

With a disturbance to any benthic community, initial recolonization would be by opportunistic species. However, these species are not nuisance species in the sense that they would interfere with other legitimate uses of the ocean, that they are human pathogens, or that they are nonindigenous, nuisance species. The placement of maintenance material in the past has not attracted or promoted, and the placement of the virgin material and future maintenance material should not attract or promote, the development or recruitment of nuisance species.

4.1.2.11 40 CFR 228.6(a)(11)

Existence of or in close proximity to the site of significant natural or cultural features of historical importance.

MMS records indicate that no historic shipwrecks are mapped within the limits of the proposed ODMDSs. However, no remote-sensing surveys have been conducted. Placement activities are not expected to adversely impact unrecorded wrecks given the depth of water through which the material would settle, the expected depth of burial at the time of placement, and the dispersive nature of the seabed environment in this portion of the Gulf. The distribution, depth, and dispersion of dredged material within these ODMDSs have been evaluated by numerical modeling (PBS&J, 2006). Dredged material would be dropped by hopper dredge onto these ODMDSs, forming mound fields with individual mounds totaling no more than 5 feet in height. The effects of the deposition of material on any undiscovered resource would be cushioned by settling through water depths ranging from 30 to 45 feet. Previous monitoring of existing PAs and studies of bottom ocean currents has determined that the material would disperse between maintenance cycles and not accumulate. The proposed ODMDSs are located in Federal waters; the Texas SHPO chooses not to comment on projects located outside of state waters.

4.2 ENVIRONMENTAL CHARACTERIZATION

4.2.1 Physical Environment

Of the areas discussed in the Physical Environment section (Section 3.3), there would be no impacts from designation of the preferred site on climatology or meteorology.

4.2.1.1 Oceanography

4.2.1.1.1 Bathymetry

There would always be localized and temporary changes in bathymetry caused by dredged material placement. However, studies of the existing ODMDSs indicate that, over the long term, there is little or no buildup of materials. The preferred sites were selected so that the temporary reduction in water depth and long-term transport of material from the sites would cause no adverse impacts.

4.2.1.1.2 Circulation and Mixing

The determined area of the preferred sites is small compared to the shelf area off Sabine Pass. As noted above, changes in bathymetry are small and temporary. Therefore, the placement of dredged material anywhere in the nonexcluded part of the ZSF would have negligible impact on the circulation and mixing of shelf waters.

4.2.1.2 Water Quality

Possible effects on water quality relative to dissolved oxygen (DO), oxygen demand, turbidity, heavy metals, pesticides, and nutrients are discussed below.

The DO concentration in the water column at a dredged material placement site may temporarily decrease (Brown and Clark, 1968; Hopkins, 1972; Pearce, 1972), not change (May, 1973), or increase (Wakeman,

1974; Windom, 1972). May (1973) found that although the water column DO did not change, a temporary decrease was found at the water/sediment interface in the areas of mud flow. He found little apparent difference in the immediate oxygen demand between recently deposited sediments from dredged material placement and other sediments. May (1973), Jones and Lee (1978), Peddicord (1979), and Lee (1976) agree that even with sediments that have a high total oxygen demand, as measured in the laboratory, oxygen depletion upon placement is not likely to cause adverse environmental impacts because only a small part of the oxygen demand is exerted at placement.

The most obvious result of dredged material placement to the water column is turbidity which has been shown to reduce primary production in laboratory studies (Sherk, 1971). Field studies, however, have shown essentially no biological impacts from turbidity (Odum and Wilson, 1962; May, 1973). May (1973) found that on a still day, the turbidity plume was detectable from an aircraft, more than a mile downcurrent. On days when winds caused natural turbidity in an estuarine system, the plume was not detectable more than a few hundred yards downcurrent from an active dredge. He also noted that because the small size of the particles, responsible for an extended turbidity, causes them to behave differently than most of the disposed material, the turbidity plume has little relationship to dredged sediment distribution, except near the dredge. Impacts from increased turbidity would be less nearshore, where higher turbidity is common, than they would be farther offshore in more-pristine water.

Wildish and Power (1985) found that smelt avoid water containing suspended sediments at concentrations above a certain threshold level, which was about 20 mg/L under their test conditions. Allen and Hardy (1980) note that direct destruction of nekton from suspended solids associated with dredging and placement is of little consequence because of their ability to avoid the turbid water.

May (1973) found that total suspended solids was reduced by 92 percent within 100 feet of the discharge point, by 98 percent at 200 feet, and that concentrations above 100 mg/L were seldom found beyond 400 feet from the placement point. Therefore, unless contaminants are released from the discharged sediments, more than short-term, local impacts could not be expected from the total suspended solids (TSS) resulting from discharge.

Chemical analyses of elutriates made with past maintenance material and samples from the proposed extension and surrounding area indicate that no significant release of constituents from the sediment can be expected during dredging and placement (sections 3.3.3 and 3.3.4). Additionally, examination of water at the existing ODMDSs yields no indications of water quality problems and past studies at the existing ODMDSs (EPA, 1983a) show no water problems caused by placement activities.

In summary, water quality impacts from dredged material placement anywhere in the nonexcluded part of the ZSF would be temporary, localized, and nonsignificant.

4.2.1.3 Sediment Quality and Characteristics

There are no sediment quality problems at the historically used or proposed ODMDSs or surrounding areas, as determined by past testing (Section 3.3.4) and monitoring (EPA, 1983a). The only expected detrimental impacts on bottom sediments caused by the placement of virgin material from the 48-Foot Project and future maintenance material would result from grain-size distribution, not sediment quality. The sediment regime offshore of Sabine Pass matches neither that of the construction material nor the maintenance material, but there is no area near Sabine Pass that is a better match. Additionally, monitoring of the existing ODMDSs, where the same situation exists, indicated no long-term impacts to the local benthos (EPA, 1983a).

4.2.2 Biological Environment

The biological impacts that are discussed in this document are the result of dredged material placement, not site designation *per se*. Site designation provides an acceptable ocean location for the placement of dredged materials.

4.2.2.1 Plankton

The impact of placement at the preferred sites on phytoplankton would probably be greater than that associated with placement at more-offshore sites, slope sites, or abyss sites since Kamykowski et al. (1977) and MMS (2002) found a larger standing crop at near-shore stations. Both negative and positive impacts would occur. A localized increase in turbidity would occur, which has been found to decrease phytoplankton production in laboratory studies (Sherk, 1971), and Kamykowski et al. (1977) found total zooplankton abundance to be inversely related to turbidity. Conversely, the decrease in phytoplankton production, presumably from decreased available light, has been found to be offset by increased nutrient content (Kamykowski et al., 1977; Morton, 1977). In past studies of the impacts of dredged material placement from turbidity and nutrient release, the effects are both localized and temporary (Odum and Wilson, 1962; May, 1973; Brannon et. al., 1978; Kraus, 1991; Dragos and Peven, 1994). Thus, due to the small area represented by the proposed ODMDSs, relative to the Gulf shelf near Sabine Pass, and the reproductive capacity and natural variation in plankton populations, the impacts of dredged material placement anywhere within the ZSF are not expected to be significant, and, therefore, impacts at the preferred sites are not expected to be significantly different from those at any other part of the ZSF.

4.2.2.2 Benthos

No constituents were found in the virgin sediment that would lead to an expectation that toxic impacts to benthos would occur. At the existing ODMDSs, when dredging occurred between two benthos investigations, the only change found by EPA (1983a) that could potentially be related to dredged material placement was a slight decrease in the percentage of deposit feeders. The only major expected impact to the benthos, i.e., burial, would also be expected to be slightly less at a nearshore site since the

nearshore area is naturally more turbulent than the deeper areas of the ZSF, and therefore is inhabited by a more-resilient, opportunistic community.

4.2.2.3 Nekton

Wright (1978) indicates that nekton is not directly affected by dredged material placement since they can avoid areas of high turbidity. Some flatfish might be buried and would die, but as discussed in Rhoads and Carey (1997), some near the periphery of the mound would dig up through the material and survive. The benthos at the site, which would have been used as a food source, would be lost, but the area of the site is as small as is feasible and is small compared to the offshore area near Sabine Pass. The elutriate analyses and bioassessments with undisturbed virgin sediment yielded no expectation of short-term water column or benthic toxicity from dredging or placement operations, except from increased turbidity. Therefore, no significant impacts to the nekton of the area from the proposed dredging and placement operations are expected.

4.2.2.4 Essential Fish Habitat

Section 3.10.2.3 of the SNWW CIP FEIS lists the organisms for which the study area has been designated as EFH. As a review of that section would demonstrate, the organisms listed there are either (1) mostly dependent on estuaries or hard-bottom areas (reefs, rigs, etc.) for spawning, breeding, feeding, or growth to maturity, (2) spawn at depths beyond the range of the proposed ODMDSs, or (3) they are so widely distributed in the offshore study area that any impacts from use of the proposed ODMDSs would be negligible.

4.2.2.5 Threatened and Endangered Species

Of the Threatened or Endangered Species Act noted in Section 3.12 of the SNWW CIP FEIS and the biological assessment for the SNWW CIP, only sea turtles and whales would be found as far offshore as the propose ODMDSs. While rare off Texas, the listed species of sea turtles may be present in the project area during certain portions of the year. From 1995 through 2005, the total take of sea turtles from dredging in the Sabine Pass Entrance Channel by hopper dredges (cutterhead suction dredges move too slowly to capture sea turtles) was only one Kemp's ridley sea turtle and one loggerhead sea turtle (NOAA, 2003). In 2006, maintenance dredging in the Sabine Bank Channel resulted in the lethal take of one Kemp's ridley sea turtle, but there were no lethal takes in the 2008 dredging of the Sabine Pass Outer Bar Channel (USACE, 2009). The effects of placing dredged material at the proposed sites include (1) a collision potential from the vessel; (2) the deposition of dredged material on sea turtles and forage areas, and (3) the possibility of trash and debris from the dredge operation. Regarding the deposition of dredged material, modeling indicates that most of the dredged material is confined to a relatively small area. Since this is a short-term effect, and considering the mobility of the sea turtle species and the lack of limestone ledges in the proposed ODMDSs, the sea turtles should easily be able to avoid a descending plume, and available food sources should not be seriously reduced (NOAA, 2003). Regarding the vessel and debris possibility, it is the combined effect of many marine activities (e.g., oil spills, oil and gas operations,

commercial fishing, marine transportation, etc.) that constitute the hazard and not a single activity such as a dredge operation. These activities, combined with natural predation and development on land, result in a cumulative adverse impact on sea turtles (MMS, 1997). As noted in Section 4.13.2 of the SNWW CIP FEIS to which this document is appended, it has been determined that the proposed site designation does not constitute an adverse impact on listed sea turtles. EPA concurs that the proposed site designation does not constitute an adverse impact on the listed sea turtles.

In contrast to the sea turtles, the listed whales are found in deep oceanic waters off the continental slope. Based on the shallow-water location of the placement site, EPA has determined that no adverse impact would result from site designation on the listed whale species.

4.2.2.6 Marine Sanctuaries and Special Biological Resource Areas

The jetties are too far from the proposed ODMDSs to be impacted. The only other fishing area of special concern, Sabine Bank, is at least 1.7 miles from any proposed ODMDS and would not be impacted by use of any proposed ODMDS, based on the modeling studies. Therefore, no impacts are expected to any special biological resource areas. There are no marine sanctuaries in the ZSF.

4.2.3 Socioeconomic Environment

The selection process used to generate the excluded and nonexcluded areas of the ZSF was conducted to exclude other features and amenities. Beaches are at least 12 miles from the most-inshore proposed ODMDS. There are no known cultural or historic sites in any of the proposed ODMDSs. Therefore, there should be no impacts to other features and amenities from dredged material placement anywhere within the proposed ODMDSs. There are no oil and gas production facilities in the proposed ODMDSs, and, therefore, there should be no impacts on mineral extraction.

4.2.3.1 Commercial and Recreational Fisheries

Wright (1978) indicates that nekton, including commercial and recreational species, are not directly affected by dredged material placement since they can avoid areas of high turbidity. Additionally, the elutriate analyses and bioassessments give no indication of short-term toxicity from placement operations. The jetties are too far away to be impacted and the one fish haven, Sabine Bank, is at least 1.7 miles from any of the proposed ODMDSs. As noted in Section 4.1.2.3, this is much farther than any buffer zones that could be developed from the modeling that was conducted. Therefore, no significant impacts to commercial and recreational fisheries are expected should the proposed ODMDSs be selected for designation.

4.2.3.2 Shipping

Impacts to shipping are not expected since the navigation channel buffer zone is exceeded by the location of the preferred sites. More importantly, the navigation safety fairway was excluded from the ZSF, thus removing the hopper dredge during placement from possible ship traffic.

4.2.3.3 Environmental Justice

The proposed ODMDSs are all submerged areas at least 21 miles from shore. The Texas Point BU Feature is onshore but it is part of an NWR. Therefore, designation of the proposed ODMDSs for placement of construction and future maintenance material from the Entrance Channel Extension portion of the proposed 48-foot channel would have no disproportionate adverse human health or environmental impacts on minority and low-income populations.

4.3 CUMULATIVE IMPACTS

Cumulative impact has been defined by the President's Council on Environmental Quality as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such action." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Impacts include both direct effects, which are caused by an action and occur at the same time and place as the action, and indirect effects, which are also caused by the action and occur later in time and are farther removed in distance, but which are still reasonably foreseeable. Ecological effects refer to effects on natural resources and on the components, structures, and functioning of affected ecosystems, whether direct, indirect, or cumulative.

No individual projects were determined as pertinent to the cumulative impacts from site designation but types of activities can be addressed. Cumulative impacts could occur at the proposed ODMDSs if the impacts of other activities in the area (shipping, recreational, and commercial fishing, and oil and gas exploration and production) compounded the impacts of designation and, thus, placement of dredged material in the proposed ODMDSs. To assess this, one must determine if the impacts that are likely with these activities would affect the ecosystems impacted by dredged material placement in the ocean. A review of Section 4.2 indicates that the only expected impacts from dredged material placement are short-term, temporary impacts to the water column and longer-term but still temporary impacts to the benthos. Shipping and recreational and commercial fishing would impact neither of these resources unless there was a spill of fuels or cargo. There is no way to quantify these events, but they are not common and would have to co-occur with placement, which is expected to occur on 1- to 5-year intervals, before cumulative impacts would occur. There are no oil and/or gas wells in the proposed ODMDSs so cumulative impacts from drilling and dredged material placement cannot be expected. There are platforms in the vicinity, and the pipelines that connect them to shore, that could potentially result in an oil spill but the occurrence of oil spills in the Gulf from platforms accidents and pipeline leaks is very rare, and cumulative impacts from platform operations and dredged material placement cannot be expected. Additional environmental stressors such as hypoxia could add to impacts from site designation. While the placement of dredged material could temporarily reduce the DO content of the water column at the ODMDSs during placement, as discussed in Section 3.4.3, the area of hypoxia in the Gulf is quite large, ranging from Galveston to the Mississippi delta, relative to the area of the proposed ODMDSs, and

monitoring of the water near the existing ODMDSs showed no indication of anoxia (EPA, 1983a). Thus, the dredged material component of any cumulative impacts from anoxia is expected to be insignificant.

Dredging and placement of construction and maintenance material, as well as these other types of activities and stressors, have been ongoing for decades off Sabine Pass with no indication of significant cumulative environmental deterioration. Placement of additional material at the existing ODMDSs and placement of material in the proposed ODMDSs, which should be very similar to that placed at the existing ODMDSs in the past, should not change the situation.

4.4 ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED

Ocean placement cannot legally occur without site designation, and therefore, there are a number of unavoidable environmental impacts that result from the placement of dredged material, e.g., increase in turbidity and suspended solids; potential release of minor quantities of heavy metals, oil and grease, and nutrients; a change in DO content; and smothering of the benthos. However, these impacts would result from the placement of dredged material no matter where the ocean placement site is located. The preferred sites minimize impacts to the extent possible. However, certain impacts would occur, most notably the temporary loss of most of the benthic infauna in the actual discharge areas. Based on EPA (1983a), essentially complete recovery can be expected between dredging cycles.

4.5 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Ocean disposal of dredged material within the proposed site would not affect the long-term productivity of the site or the adjoining area. Long-term impacts of dredged materials at the preferred disposal sites would be minimized as described in sections 4.1 and 4.2.

4.6 ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

The designation of the proposed ODMDSs for dredged material disposal may result in the following irreversible or irretrievable commitments of resources:

1. Fuel, labor, and equipment rental expenses would be incurred by the dredge during transport of the dredged material to the ODMDSs and during return transits (the total of these expenses would increase as the distance to the disposal site increases).

2. Temporary loss of benthic organisms at the site due to smothering by the dredged material, temporary disruption of the biotic community.

3. Loss of the dredged materials for other uses such as beach nourishment.

Final designation of the preferred site would commit the benthic infauna in the proposed ODMDSs during construction. The resources associated with the monitoring program, e.g., manpower, diesel fuel, sampling gear, and boat time, would be committed during monitoring.

4.7 ENERGY AND NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL OF VARIOUS ALTERNATIVES AND MITIGATION MEASURES

The No-Action Alternative was not considered viable and is, therefore, not pertinent. Within the bounds of the guidelines for site designation, the distance traveled by the dredges, which accounts for the time required for dredging and the fuel requirements, are kept to a minimum with the use of the proposed ODMDSs. Sites farther offshore and nearer to shore would require more time for the dredging/placement process and increased travel distance and more fuel. Therefore, use of the proposed sites requires the minimum energy requirements of any viable alternative.

4.8 COMPLIANCE WITH COASTAL ZONE MANAGEMENT PLANS

Since the proposed ODMDSs are well outside Texas and Louisiana State Waters and thus outside the respective State Coastal Zones and since the modeling indicates no impacts to the respective State Coastal Zones, compliance with the Texas and Louisiana CZMPs is not required for designation of the proposed ODMDSs. However, the SNWW CIP, as a whole, has been determined to be consistent with the Texas and Louisiana CZMPs (Appendix I to the SNWW CIP FEIS).

5.0 SELECTED PLAN

5.1 EXISTING ENTRANCE CHANNEL

Since the modeling has shown that the existing ODMDSs have sufficient capacity to hold both future construction and maintenance material from the existing Entrance Channel, the Selected Plan for this portion of the 48-foot channel is the continued use of designated ODMDSs 1–4. Pertinent information for these ODMDSs is included in the tables in Section 3.1.1 and on Figure 2-4.

5.2 ENTRANCE CHANNEL EXTENSION

The selected plan for the Entrance Channel Extension is the designation of proposed ODMDSs A–D, as shown on Figure 2-4, for the placement of the construction and maintenance material from the extended portion of the Entrance Channel that would be part of the proposed 48-foot channel. Pertinent information on these proposed ODMDSs is provided in the table in Section 3.2.1. A monitoring program, as described in Section 2.4.2, is also included in the Selected Plan for the Entrance Channel Extension.

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PBS&J		
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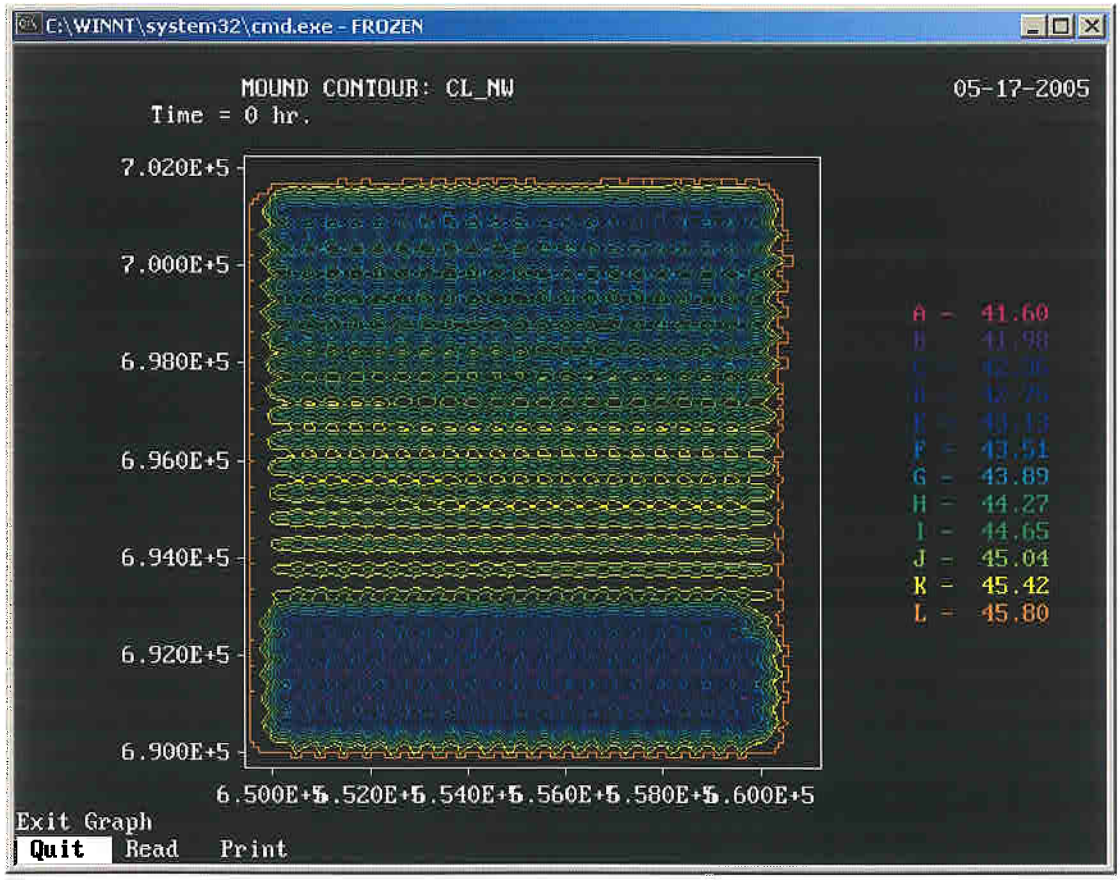
Attachment A

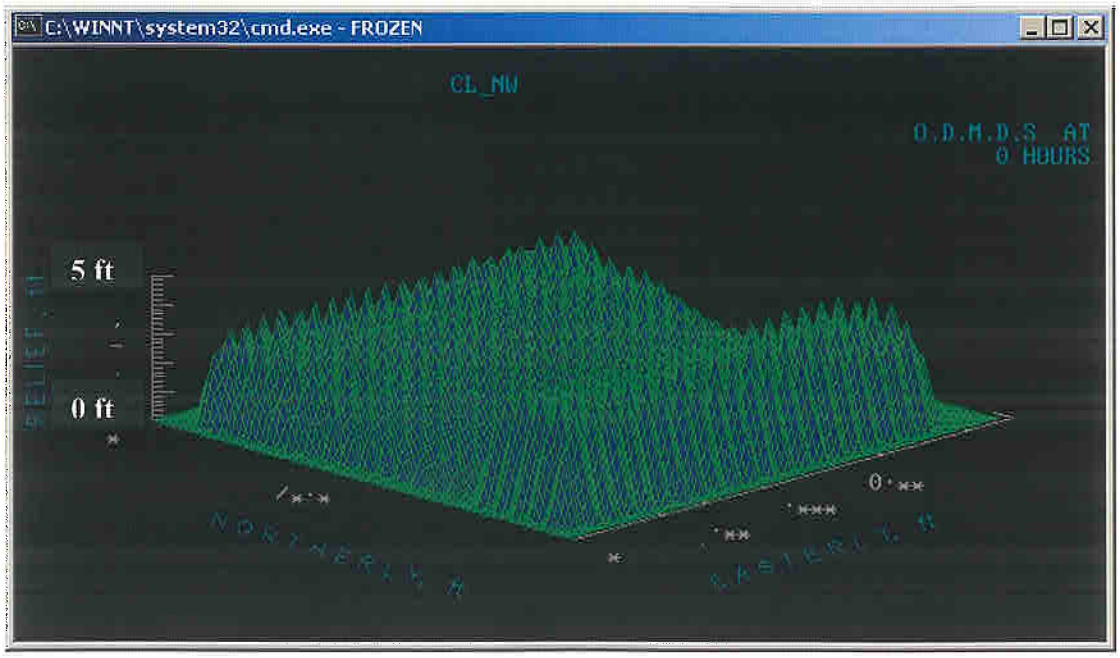
MDFATE Modeling Results

Note for Attachment A:

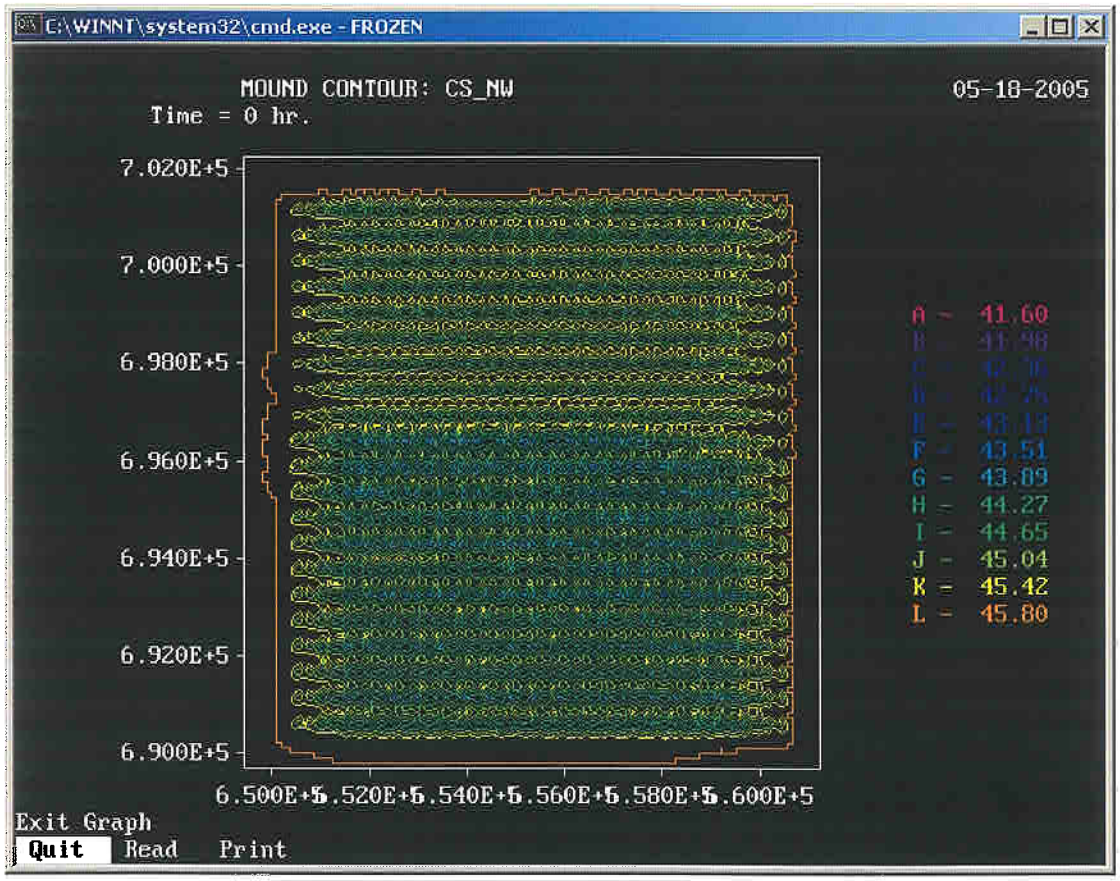
All profiles, except for one set (ODMDS 1), are depicted both as a top-view contour map and as an oblique view showing vertical relief, albeit on a greatly exaggerated vertical-to-horizontal scale. However, for some reason that could not be determined, MDFATE would not generate all files for ODMDS 1, such that the oblique view could not be captured and presented in this attachment.

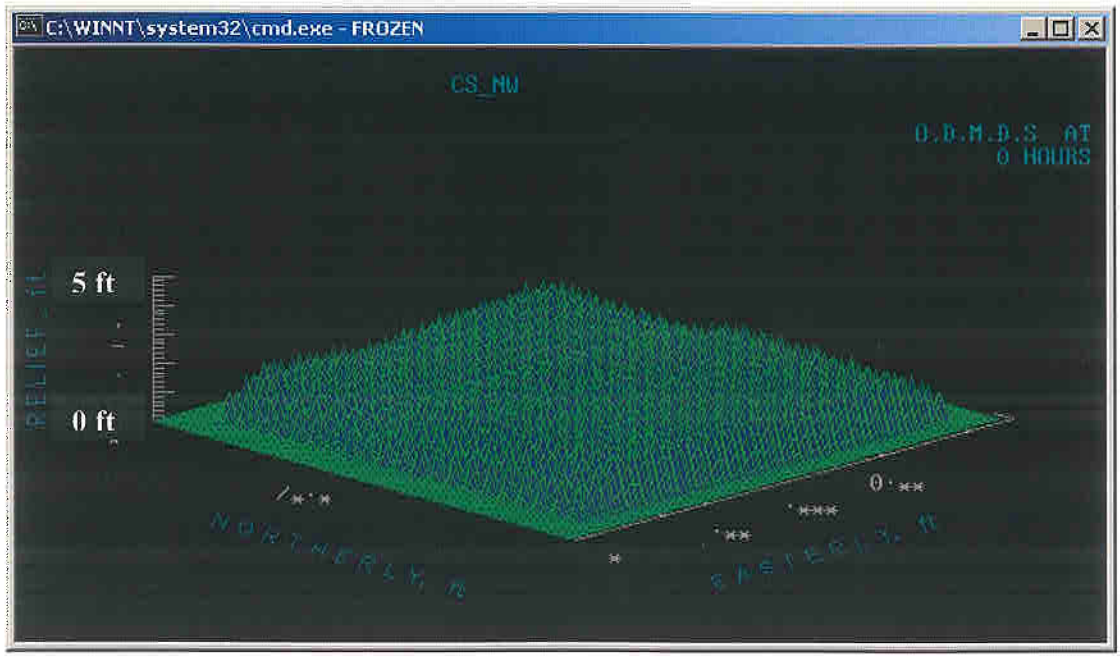
Placement Area C, New Work Material, Large hopper. Max mound height = 4.14 ft.
Dump grid: 21x21 at 500 ft spacing.



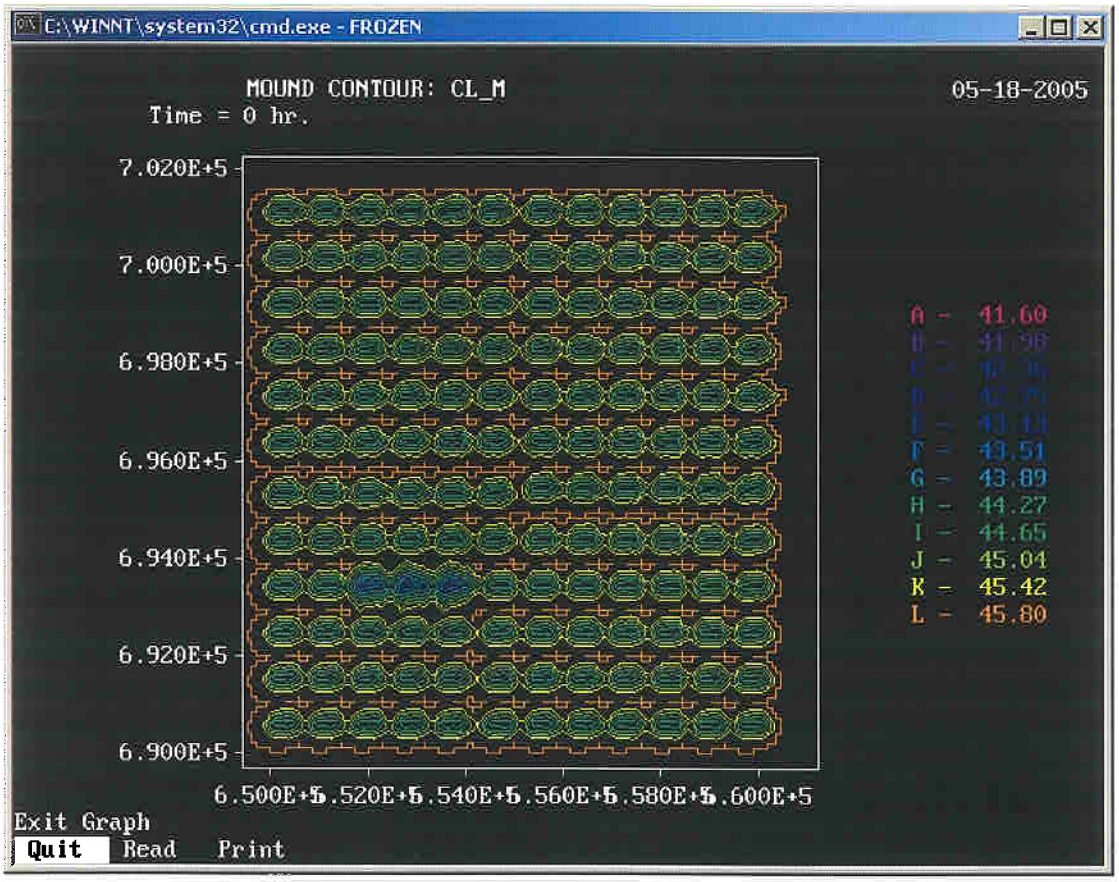


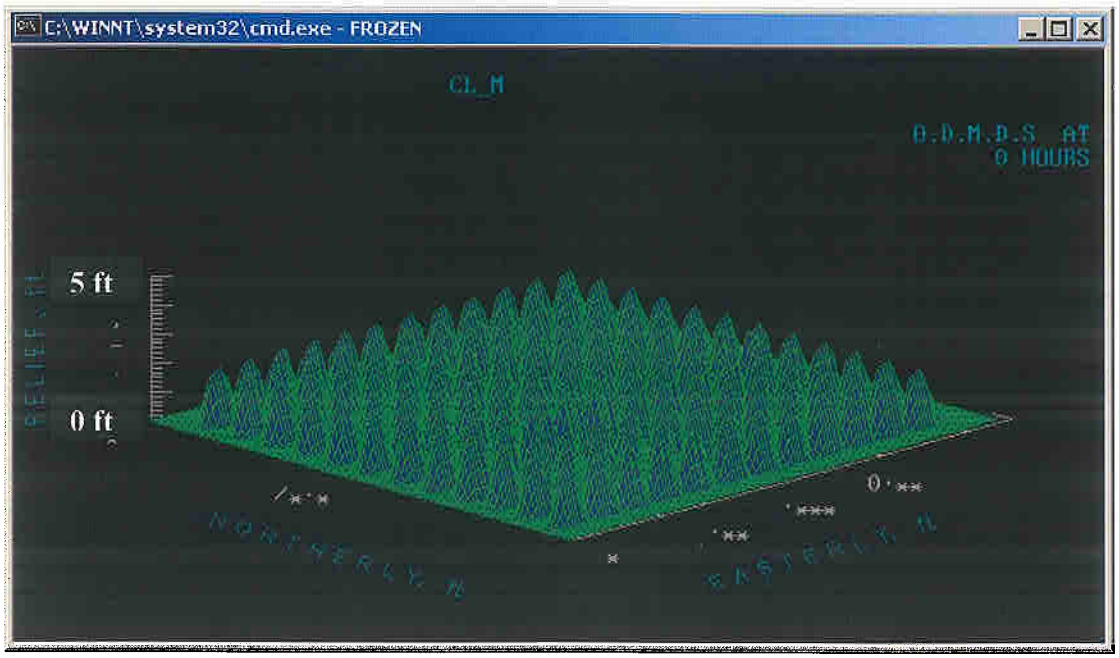
Placement Area C, New Work Material, Small hopper. Max mound height = 2.23 ft.
Dump grid: 19x21 at 500 ft spacing.



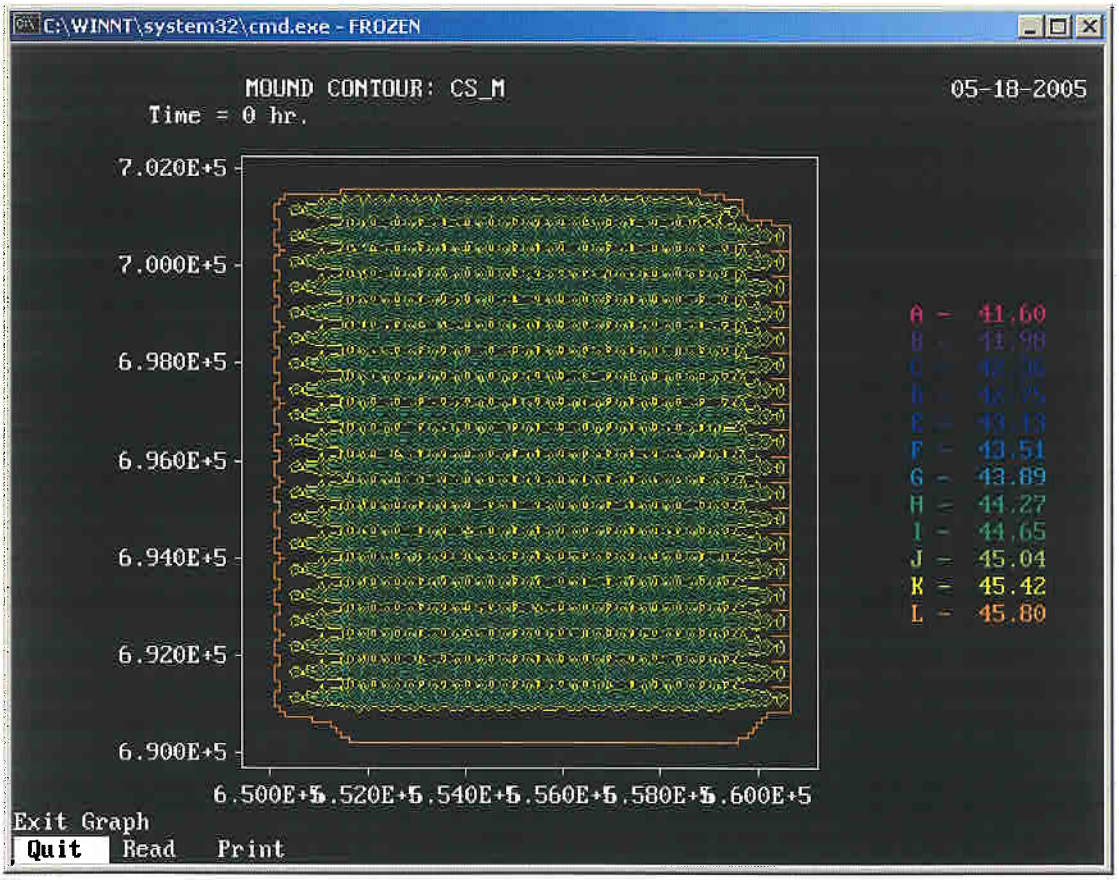


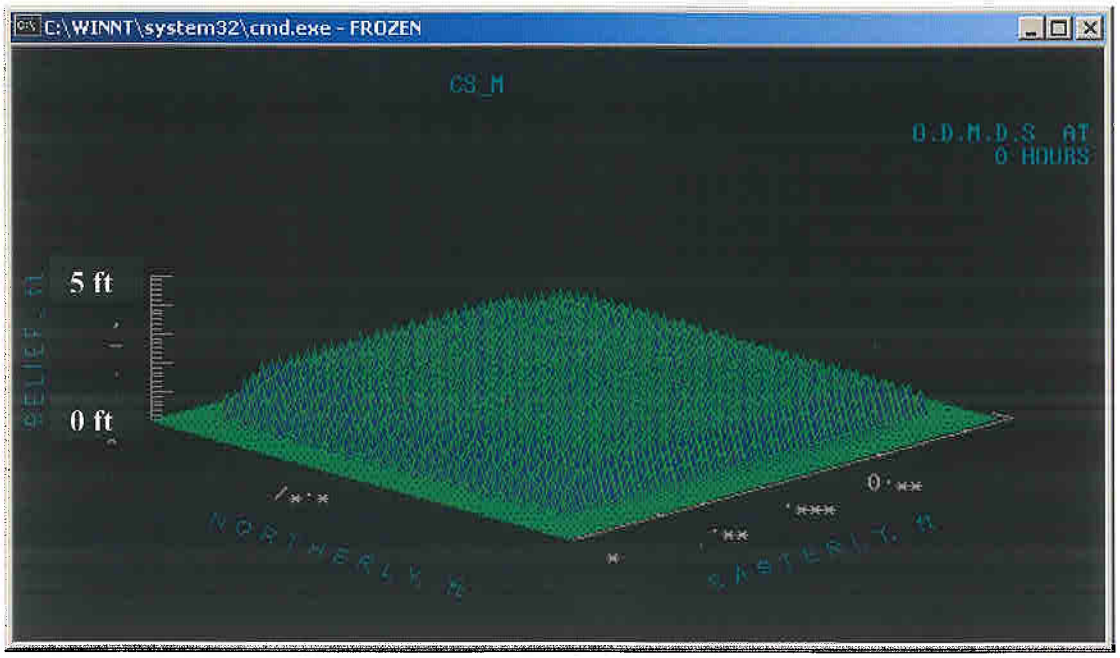
Placement Area C, Maintenance Material, Large hopper. Max mound height = 2.79 ft.
Dump grid: 12x12 at 909 ft spacing.



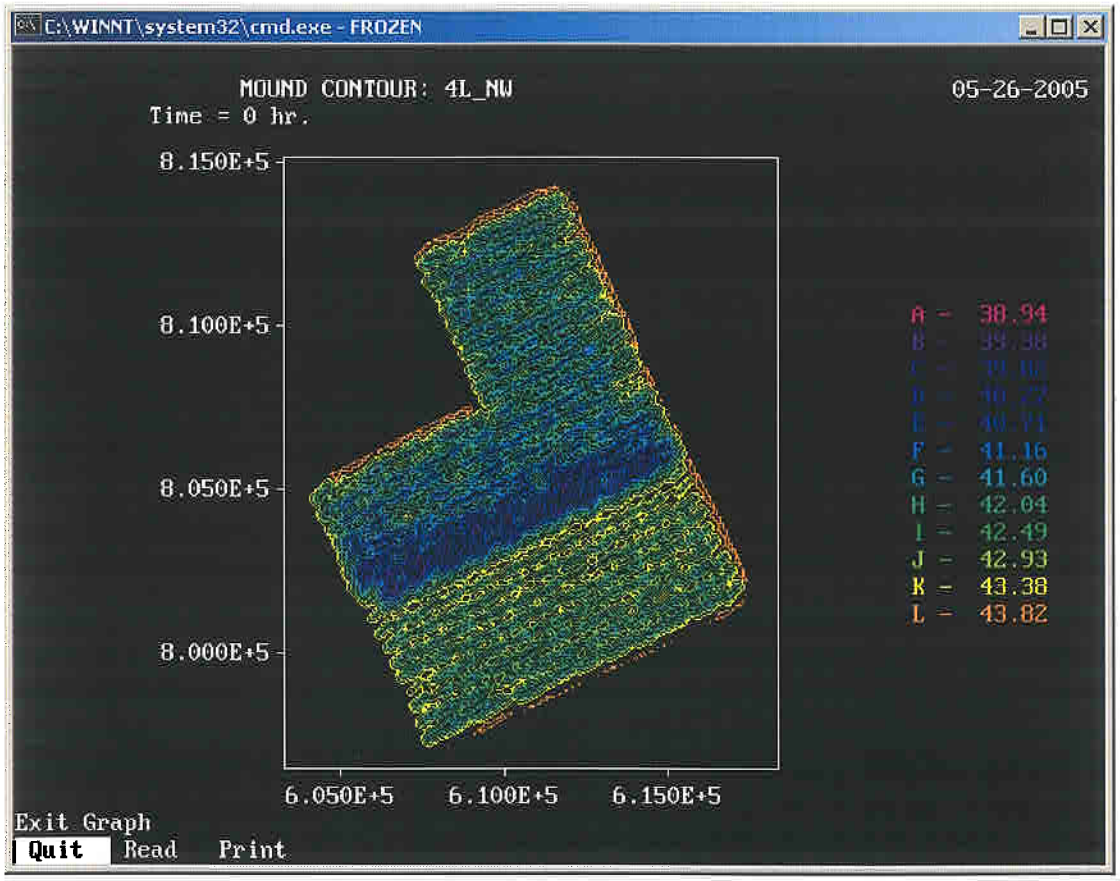


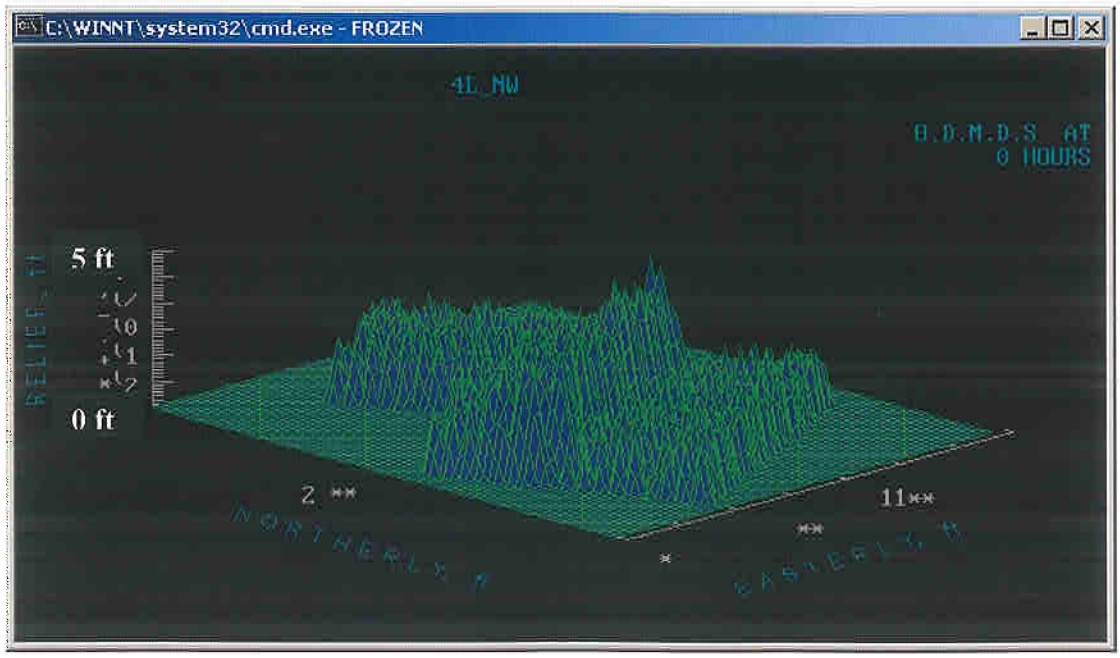
Placement Area C, Maintenance Material, Small hopper. Max mound height = 1.90 ft.
Dump grid: 19x20 at 500 ft spacing.



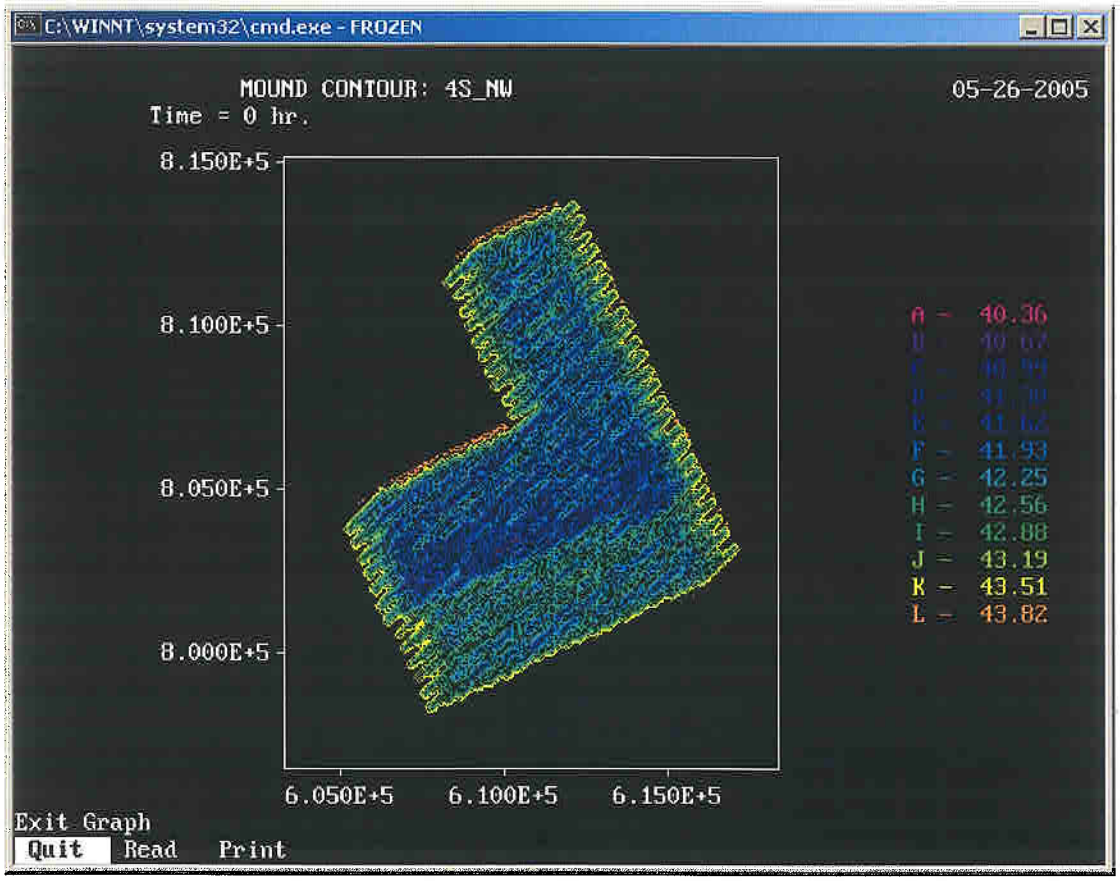


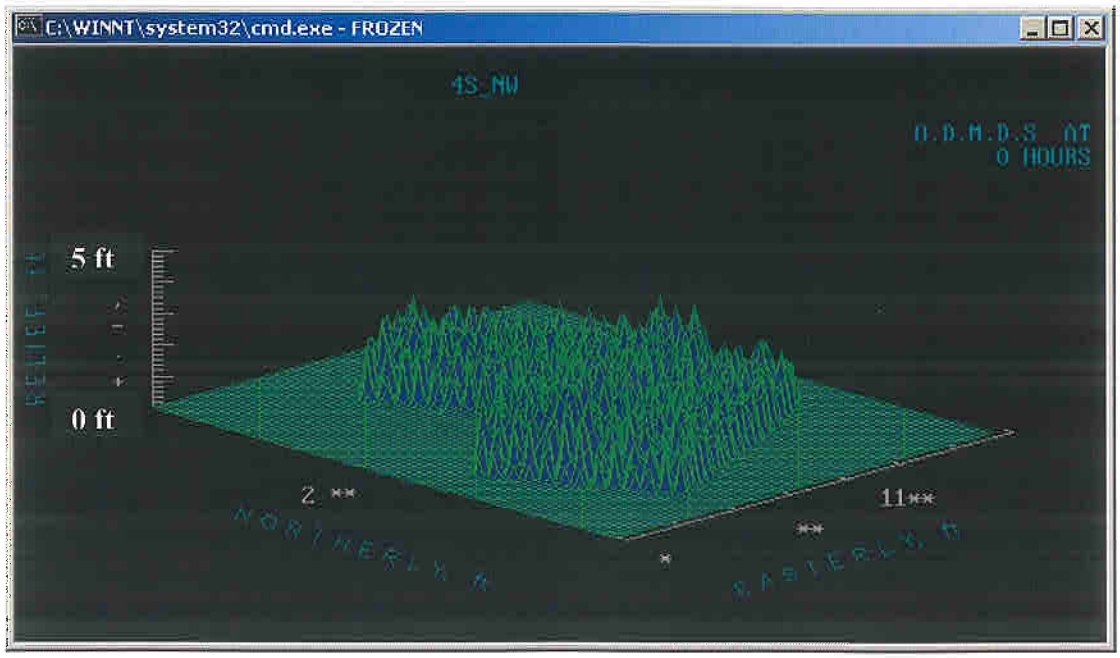
Placement Area 4, New Work Material, Large hopper. Max mound height = 5.36 ft (4.90 ft).
447 dump points at 500 ft spacing.



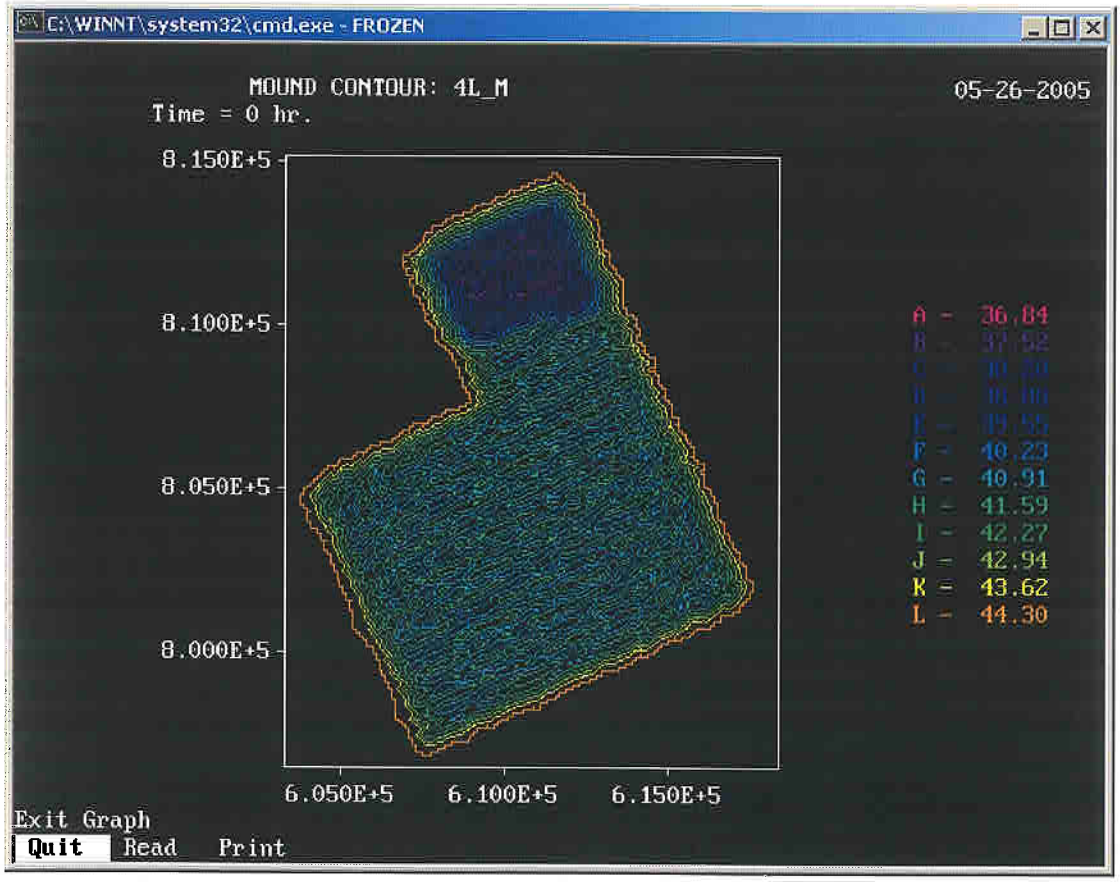


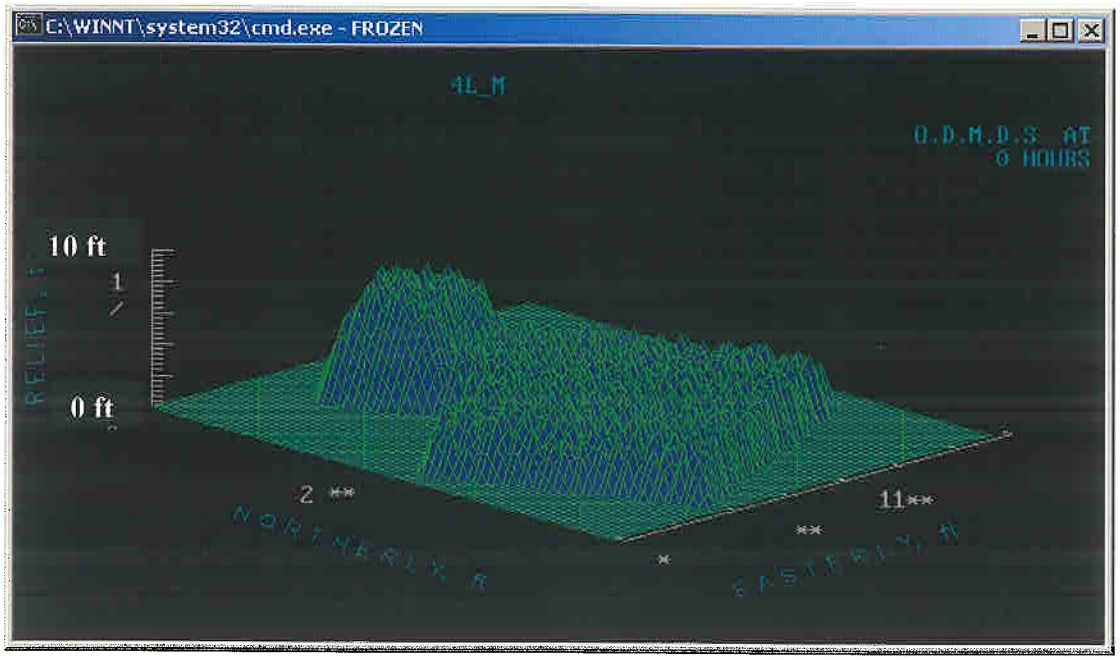
Placement Area 4, New Work Material, Small hopper. Max mound height = 3.94 ft (3.47 ft).
324 dump points at 500 ft spacing.



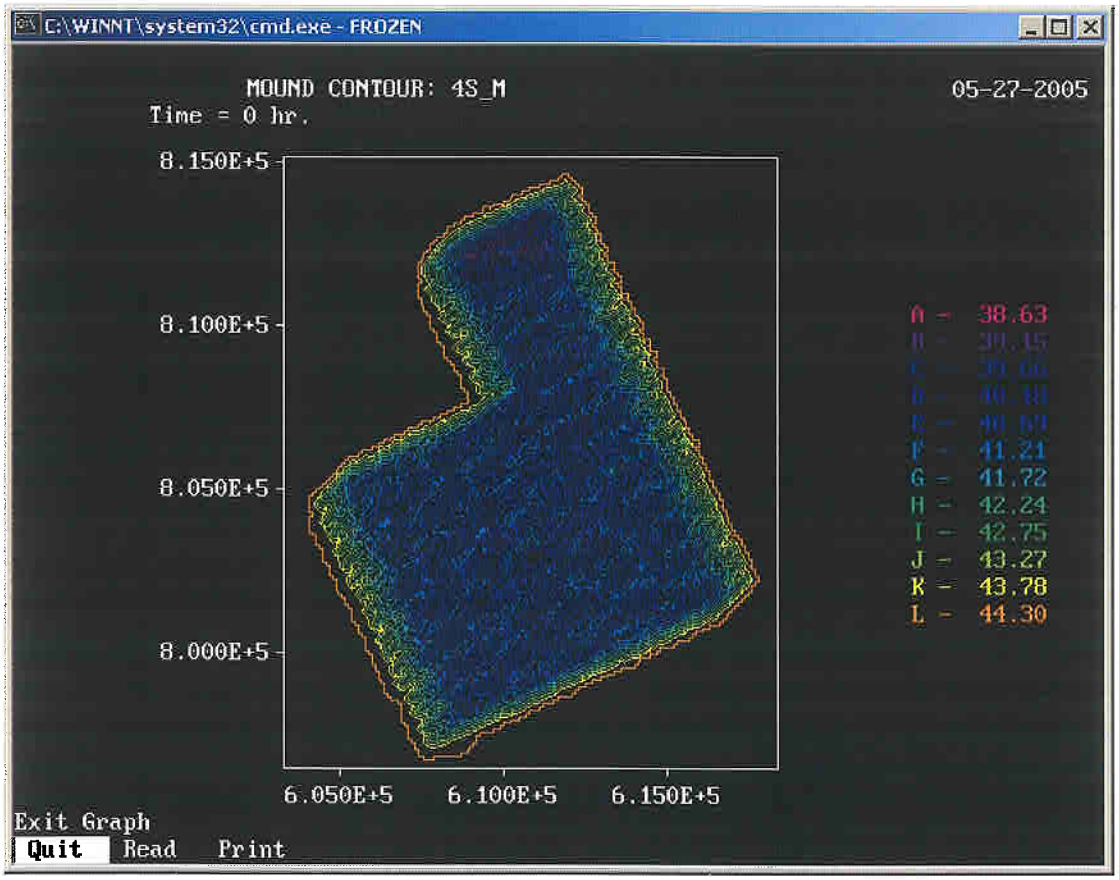


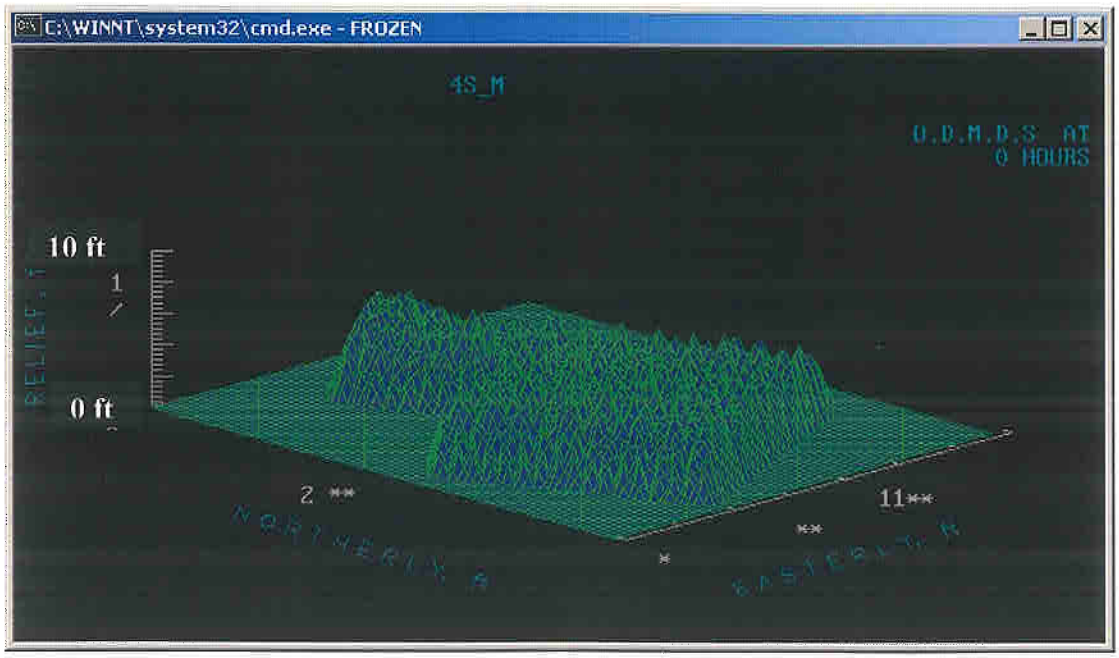
Placement Area 4, Maintenance Material, Large hopper. Max mound height = 7.46 ft.
447 dump points at 500 ft spacing.



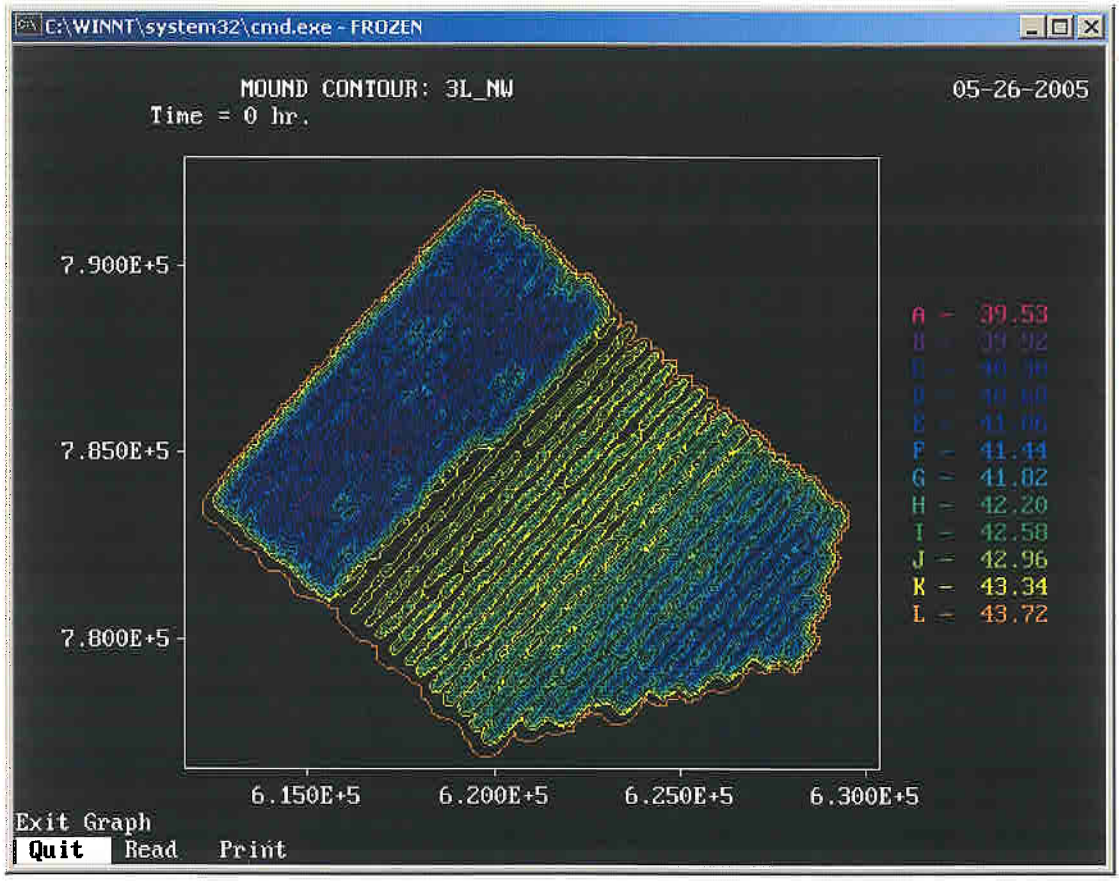


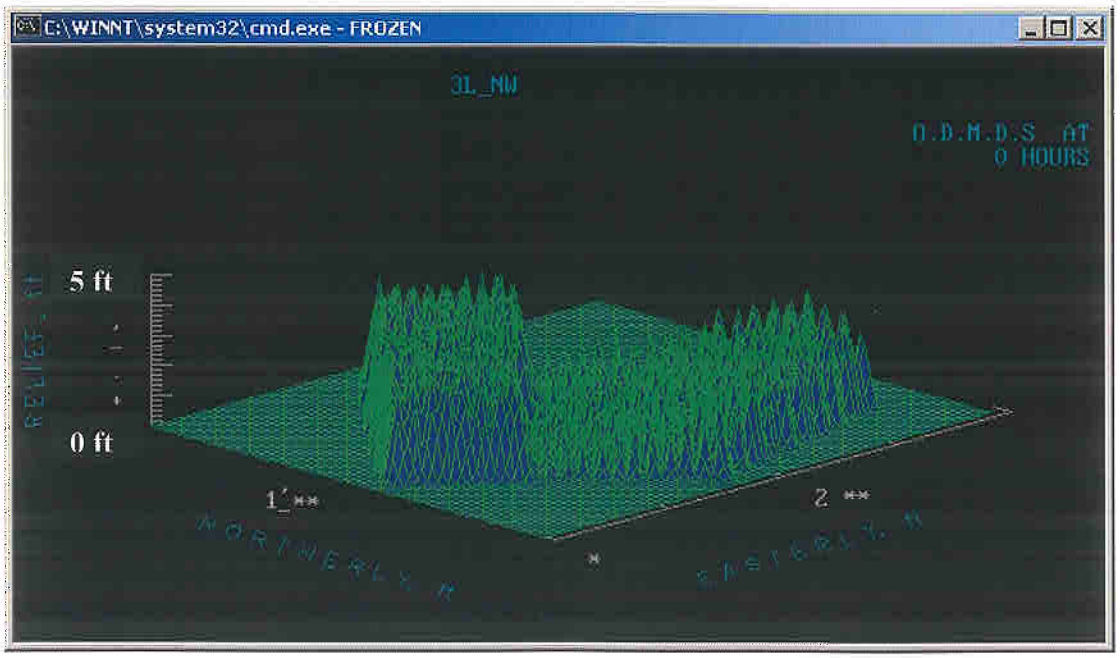
Placement Area 4, Maintenance Material, Small hopper. Max mound height = 5.67 ft.
420 dump points at 500 ft spacing.



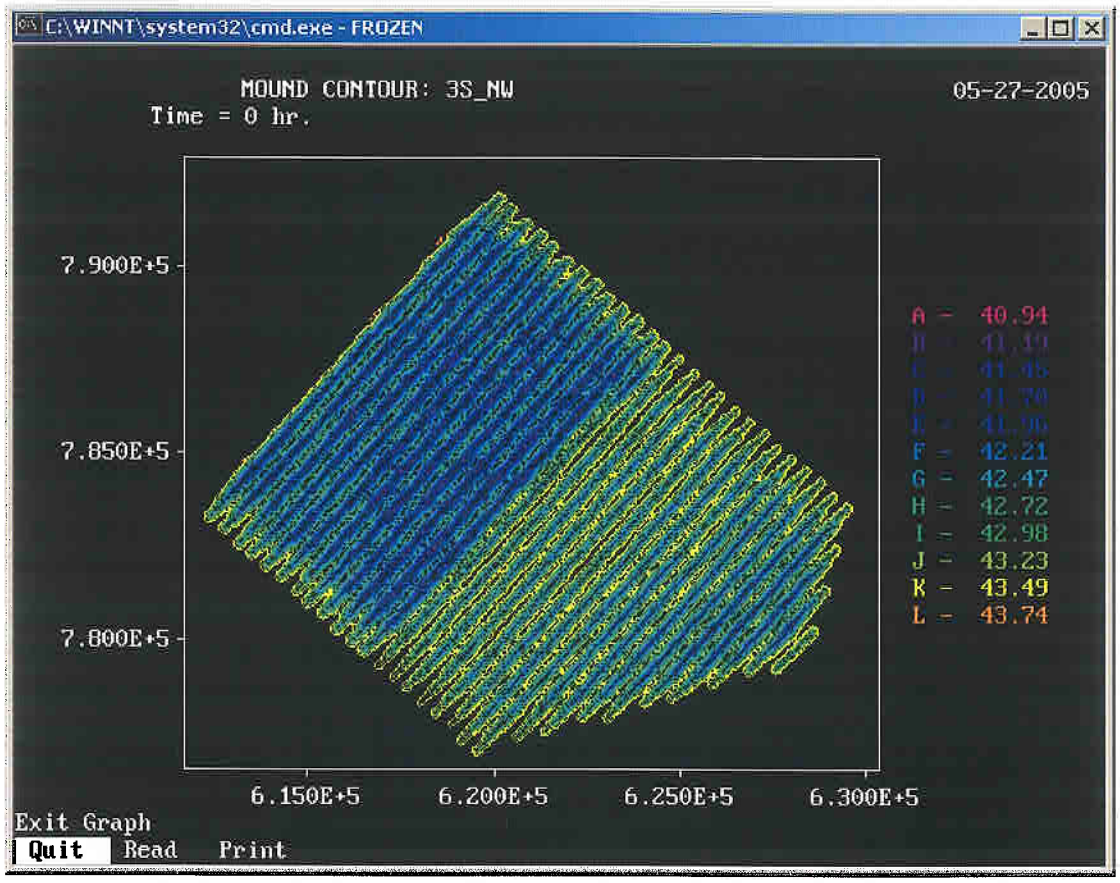


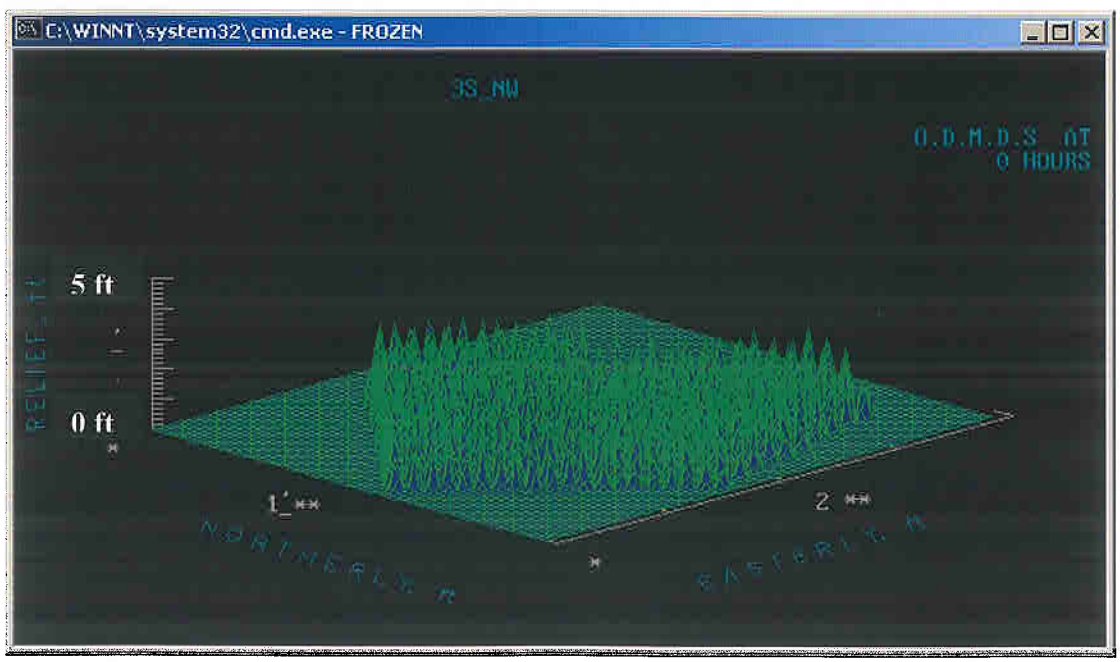
Placement Area 3, New Work Material, Large hopper. Max mound height = 4.67 ft (4.21 ft).
526 dump points at 500 ft spacing.



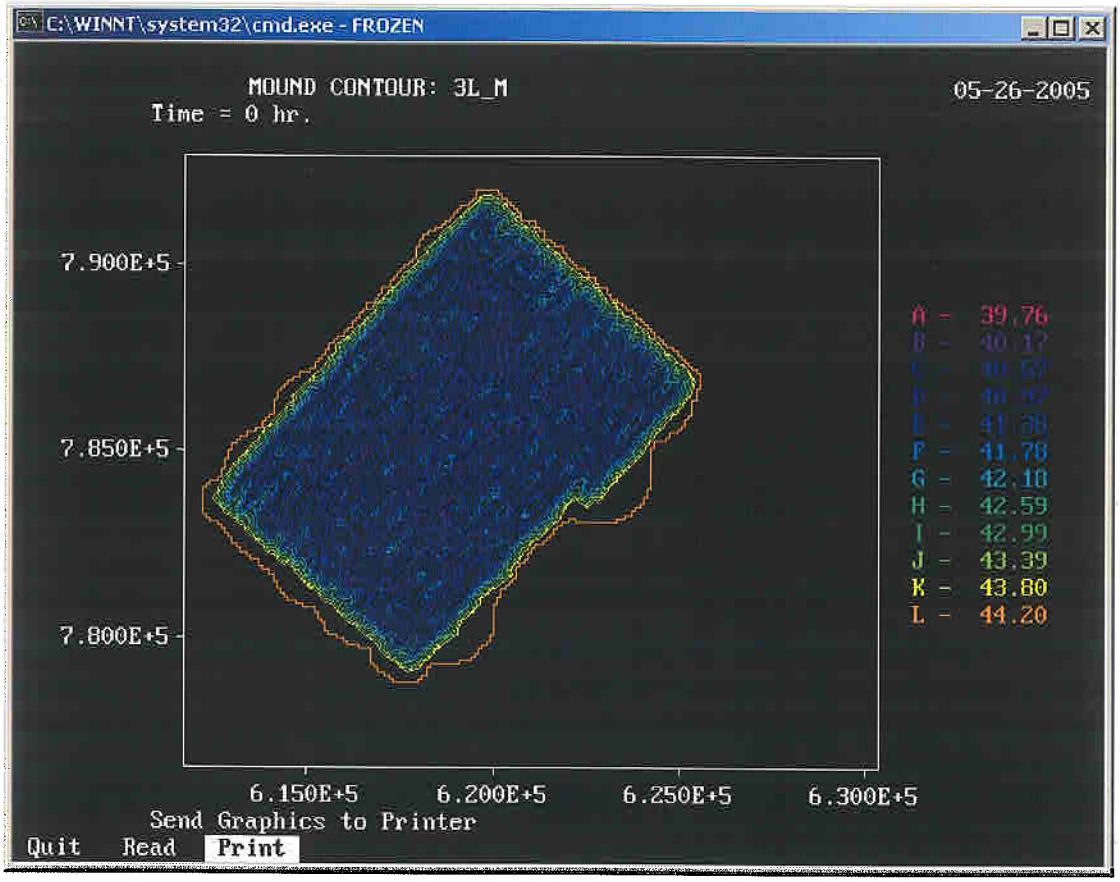


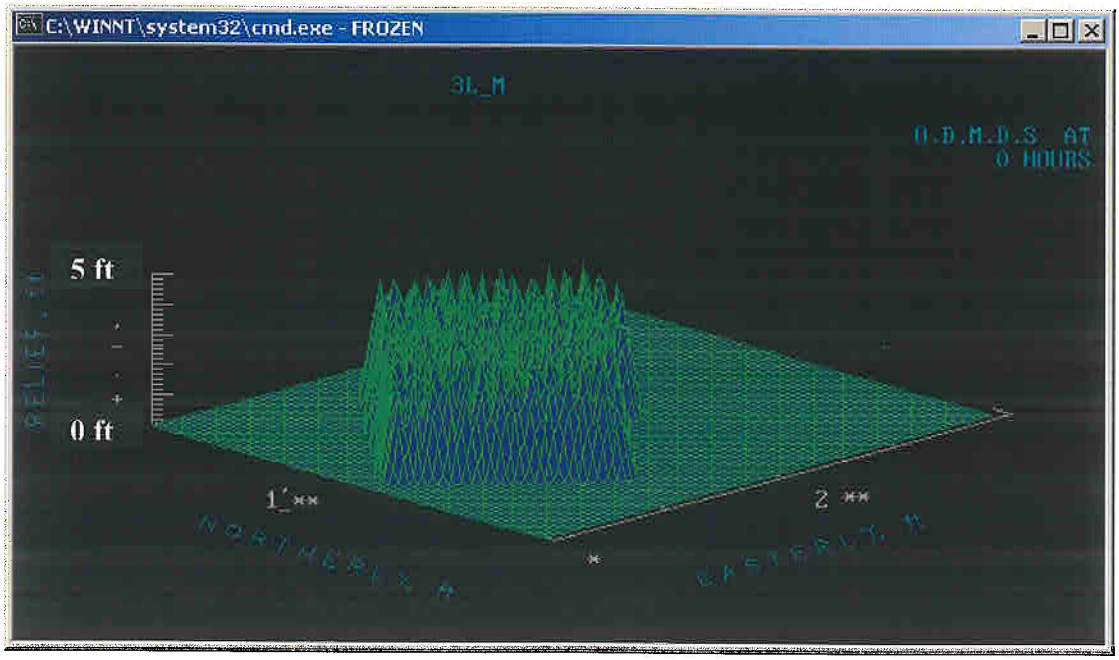
Placement Area 3, New Work Material, Small hopper. Max mound height =3.26 ft (2.81 ft).
526 dump points at 500 ft spacing.



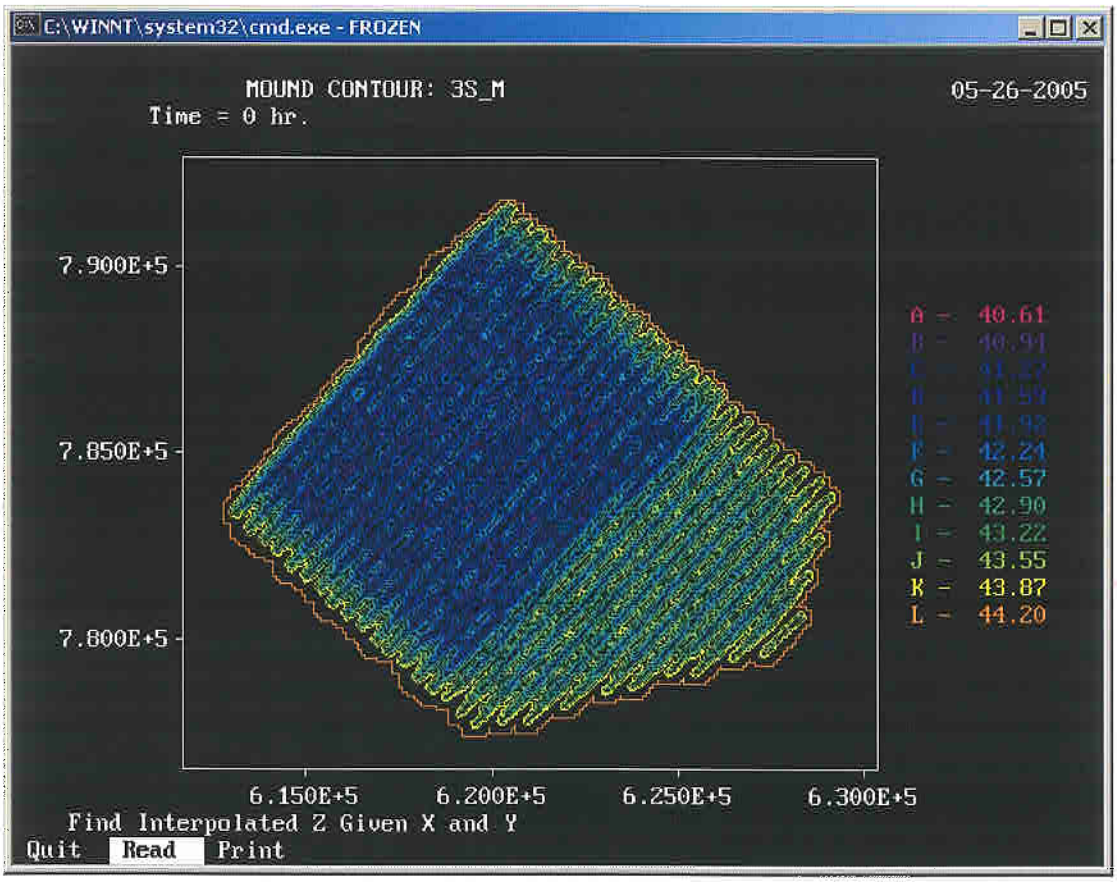


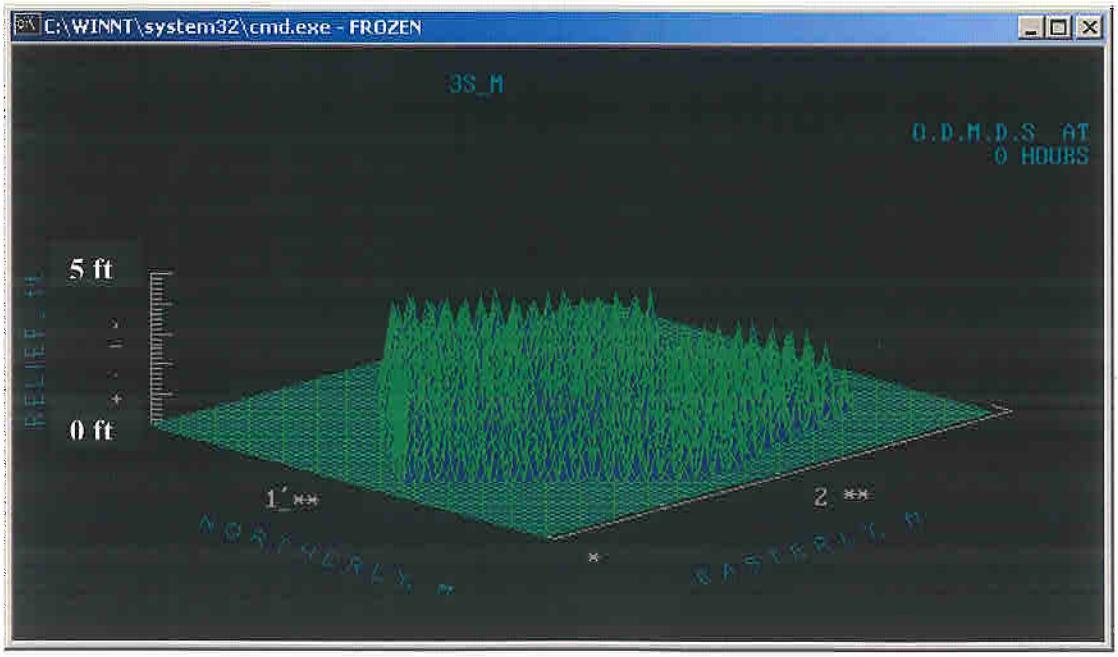
Placement Area 3, Maintenance Material, Large hopper. Max mound height = 4.44 ft.
324 dump points at 500 ft spacing.



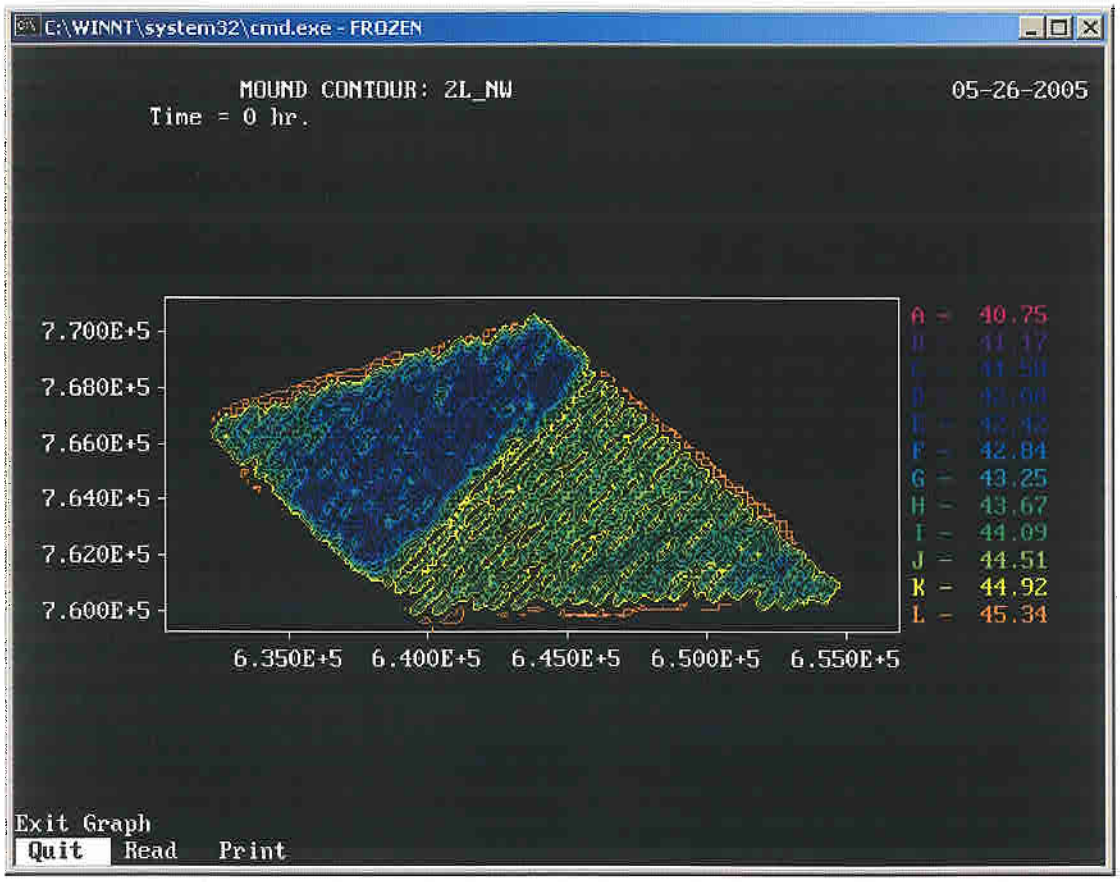


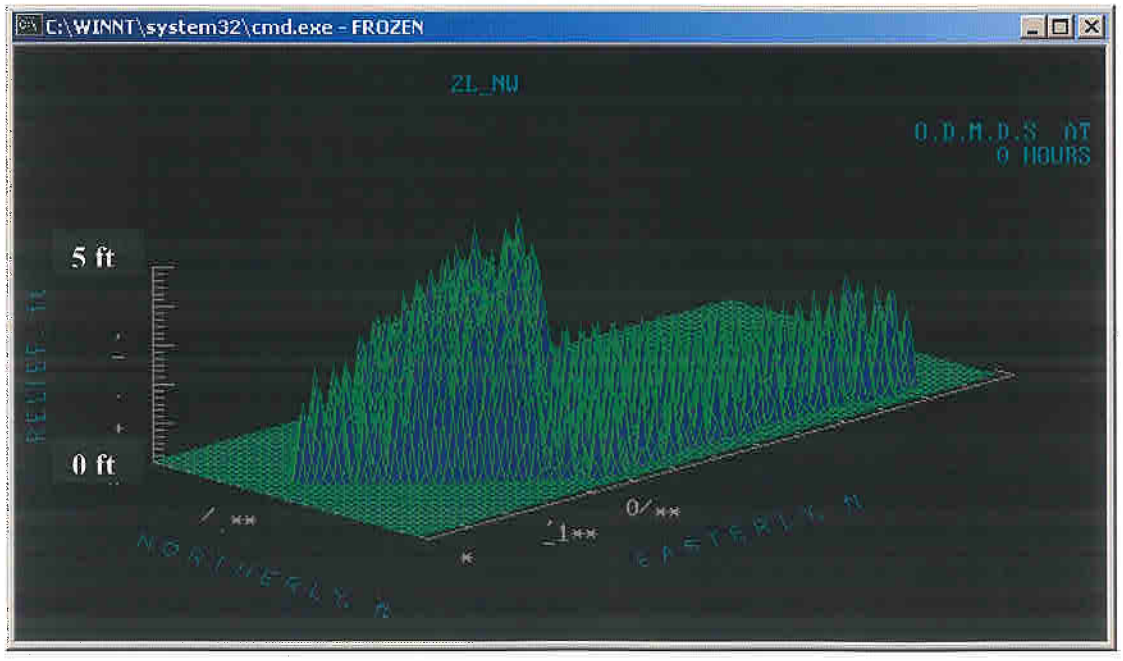
Placement Area 3, Maintenance Material, Small hopper. Max mound height = 3.59 ft.
464 dump points at 500 ft spacing.



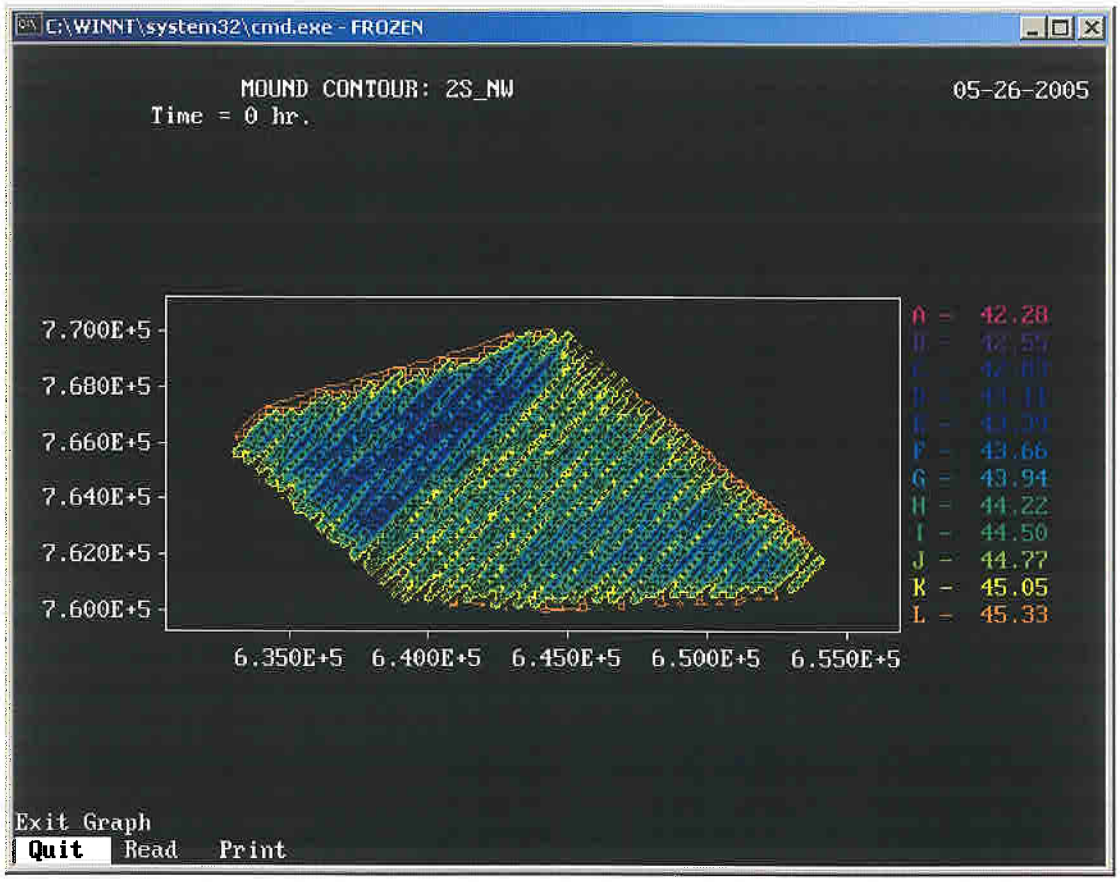


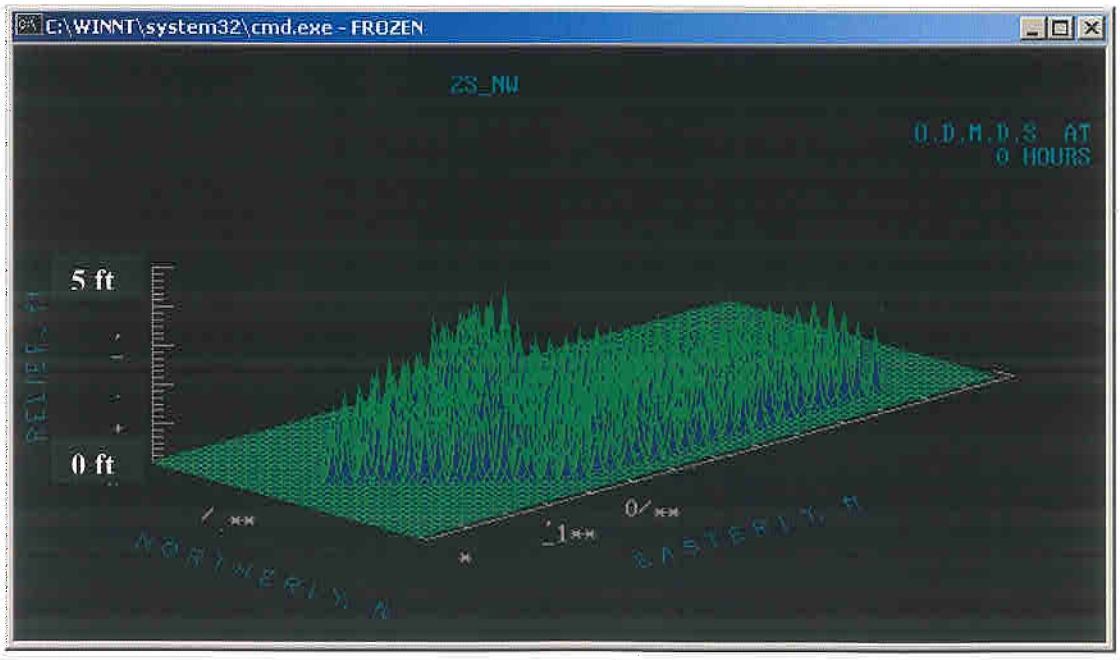
Placement Area 2, New Work Material, Large hopper. Max mound height = 5.05 ft (4.62 ft).
503 dump points at 500 ft spacing.



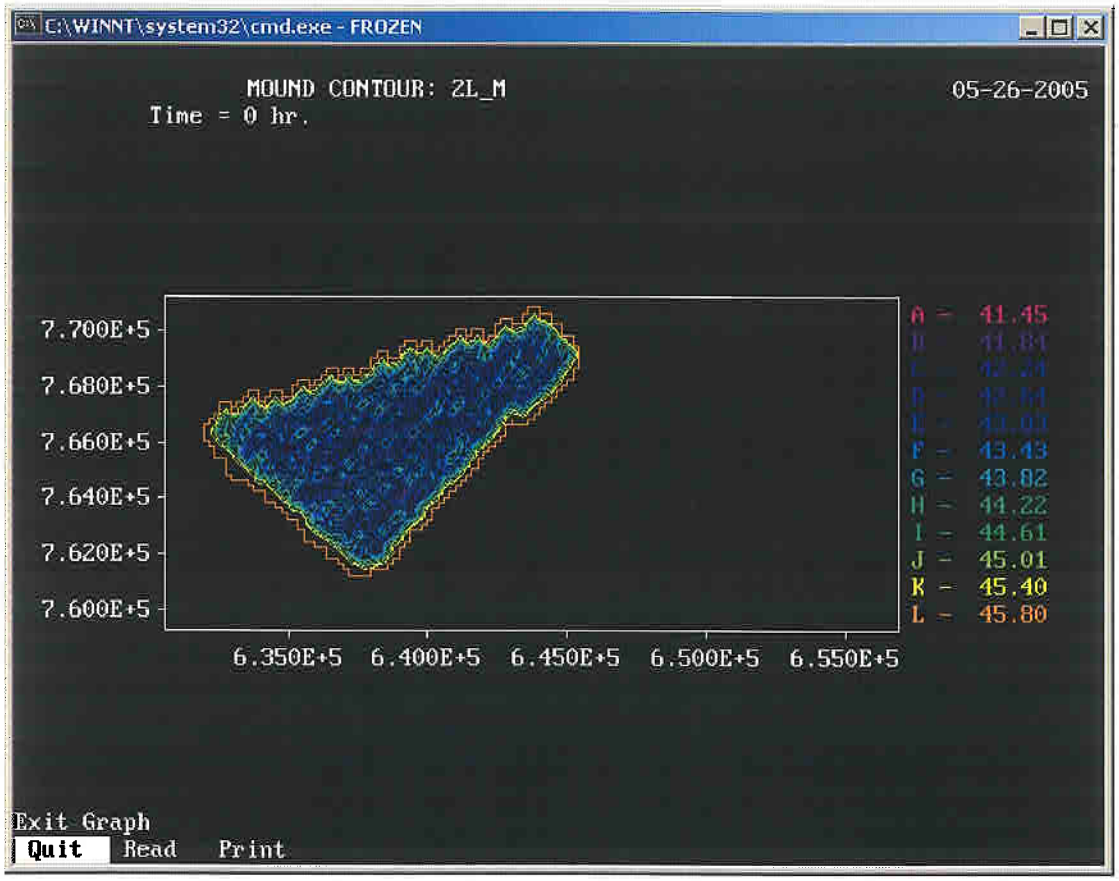


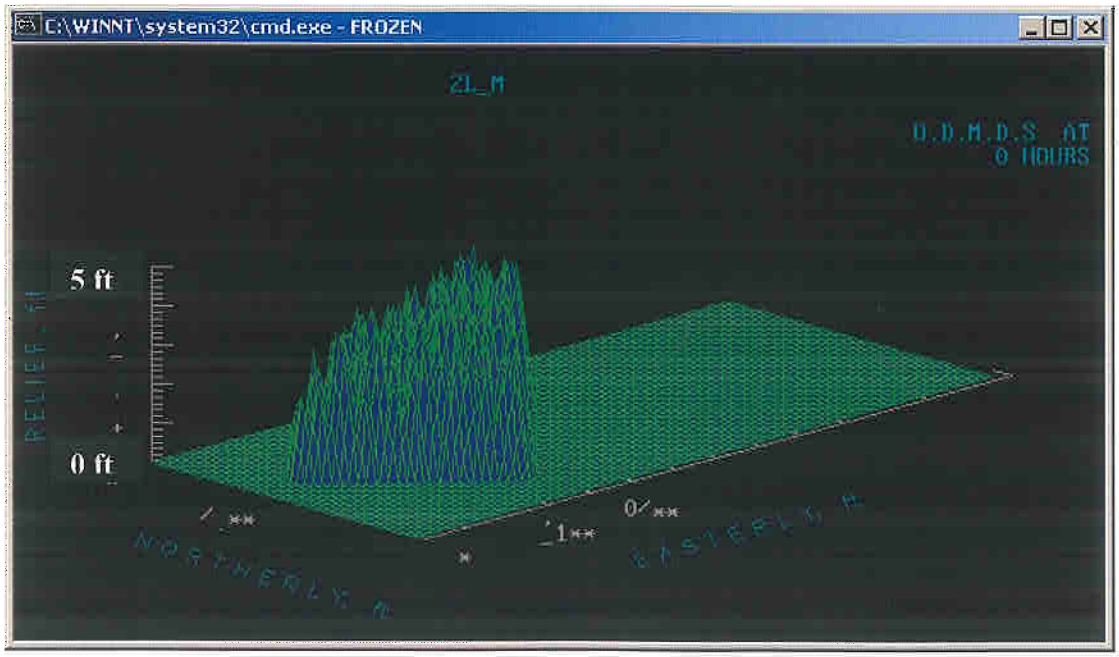
Placement Area 2, New Work Material, Small hopper. Max mound height = 3.53 ft (3.08 ft).
431 dump points at 500 ft spacing.



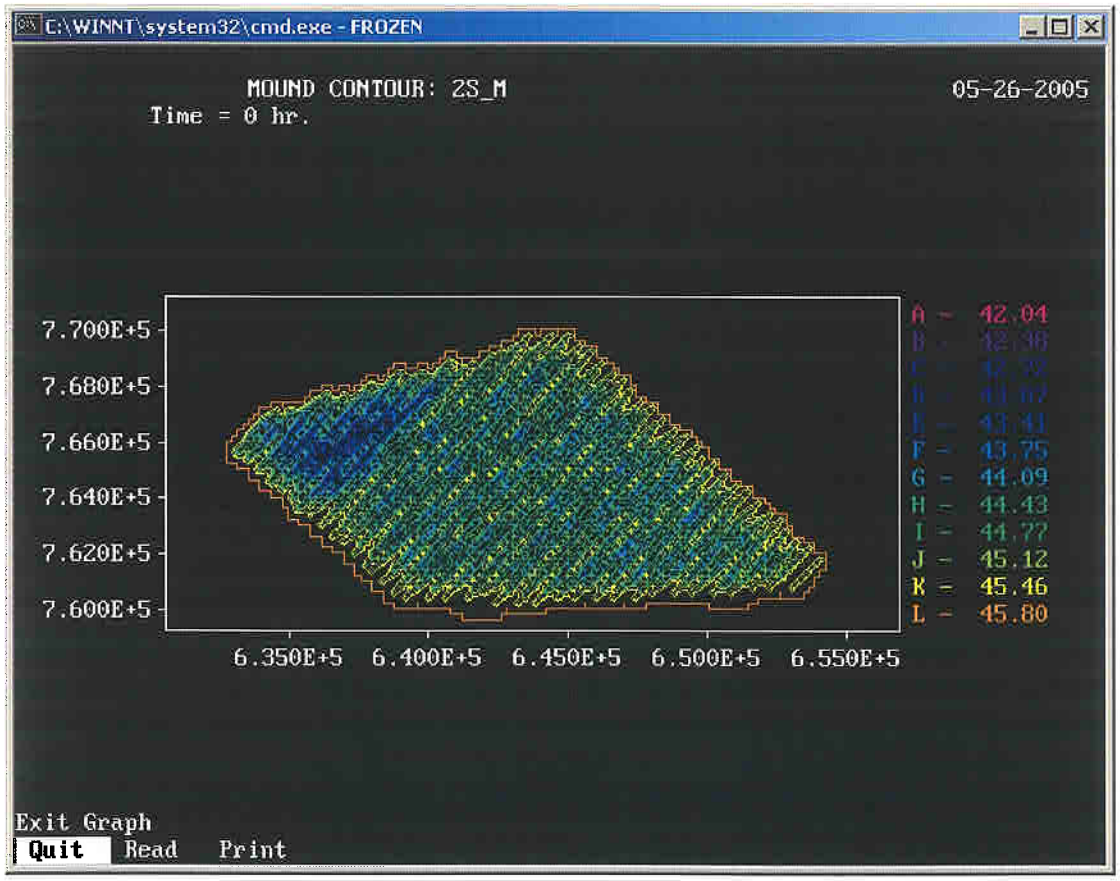


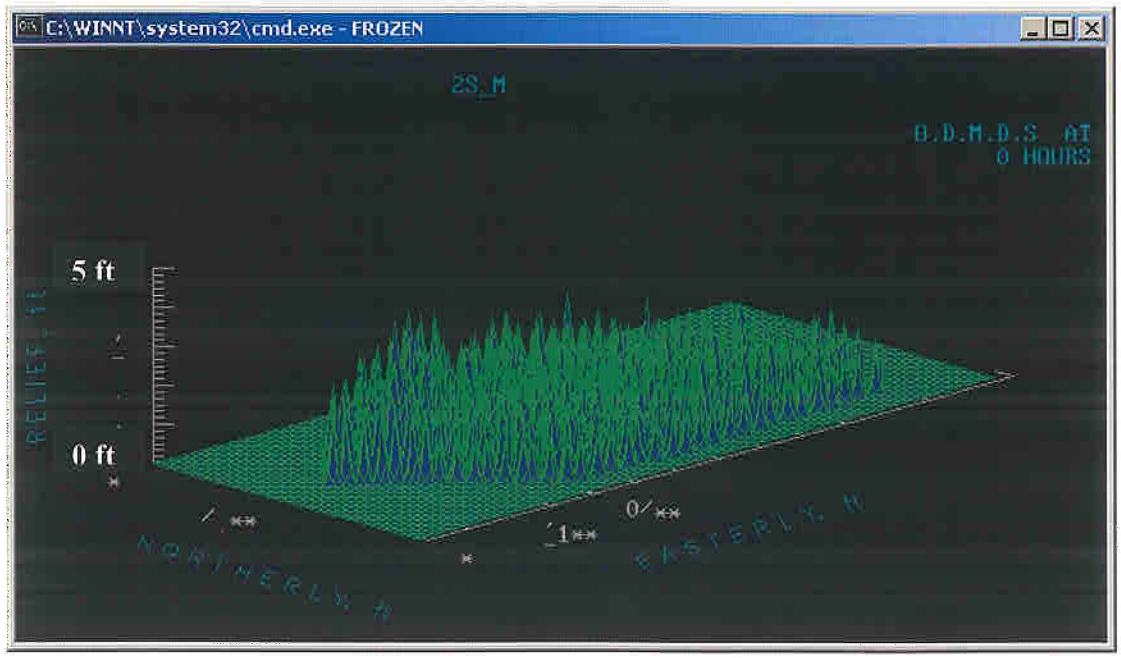
Placement Area 2, Maintenance Material, Large hopper. Max mound height = 4.35 ft.
191 dump points at 500 ft spacing.



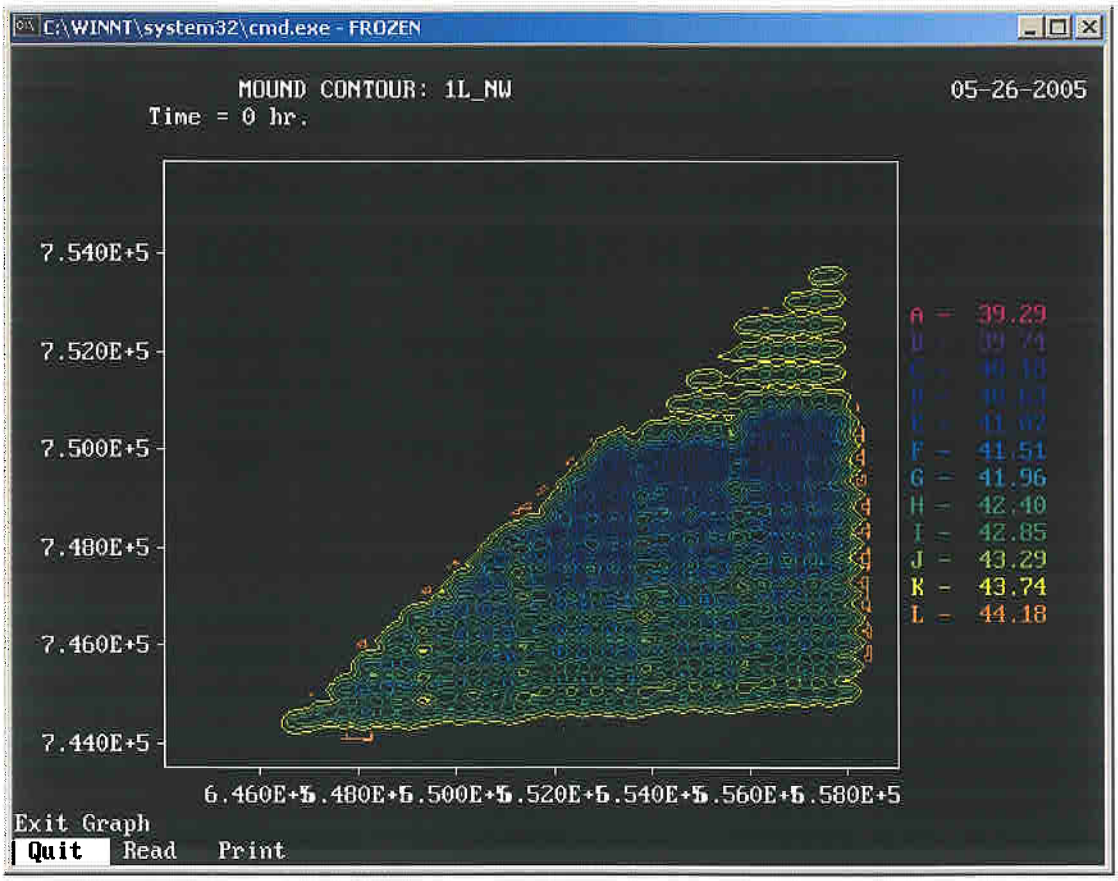


Placement Area 2, Maintenance Material, Small hopper. Max mound height = 3.76 ft.
431 dump points at 500 ft spacing.

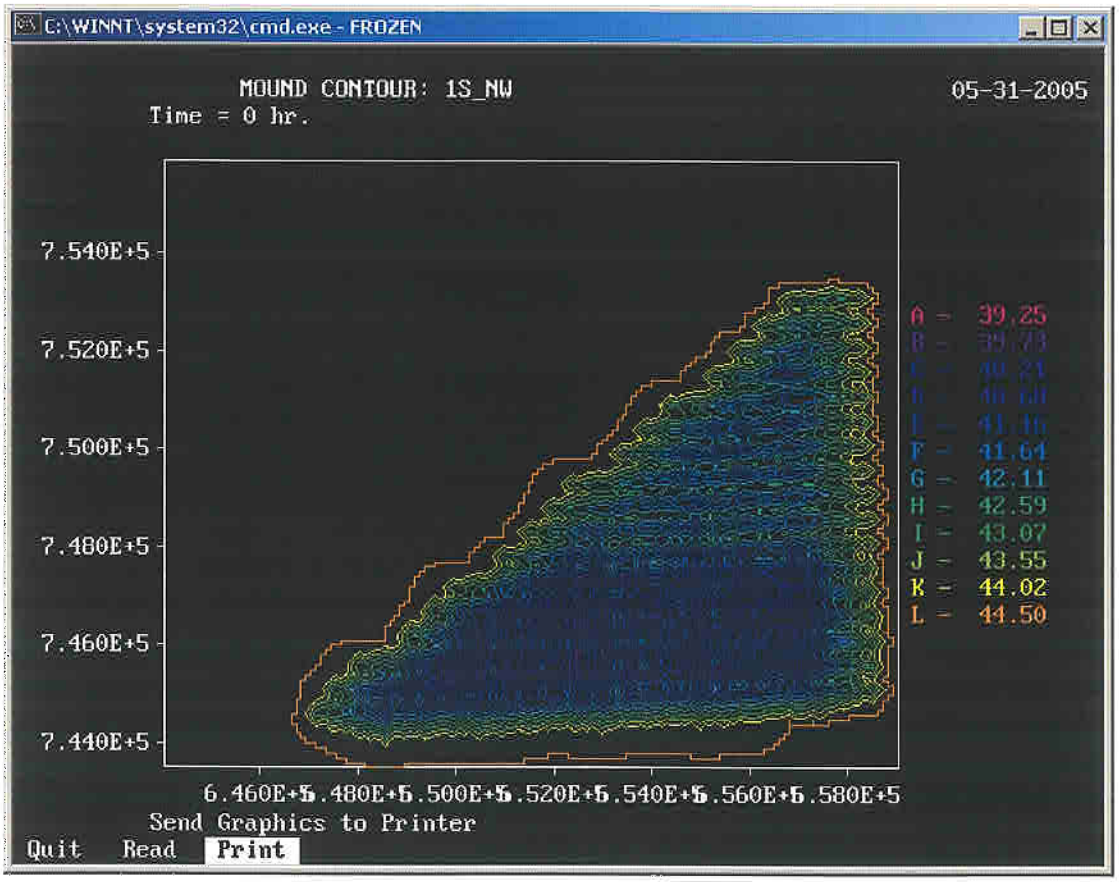




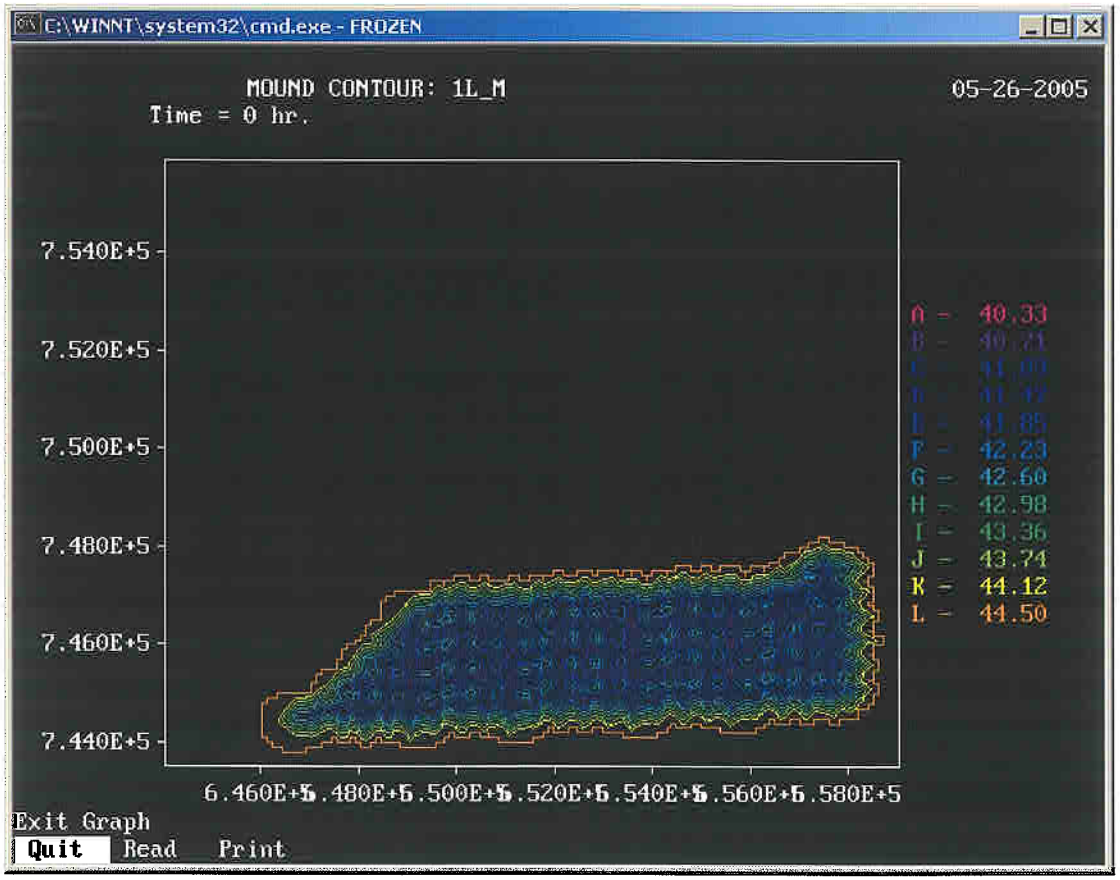
Placement Area 1, New Work Material, Large hopper. Max mound height = 5.21 ft (4.9 ft).
213 dump points at 500 ft spacing.



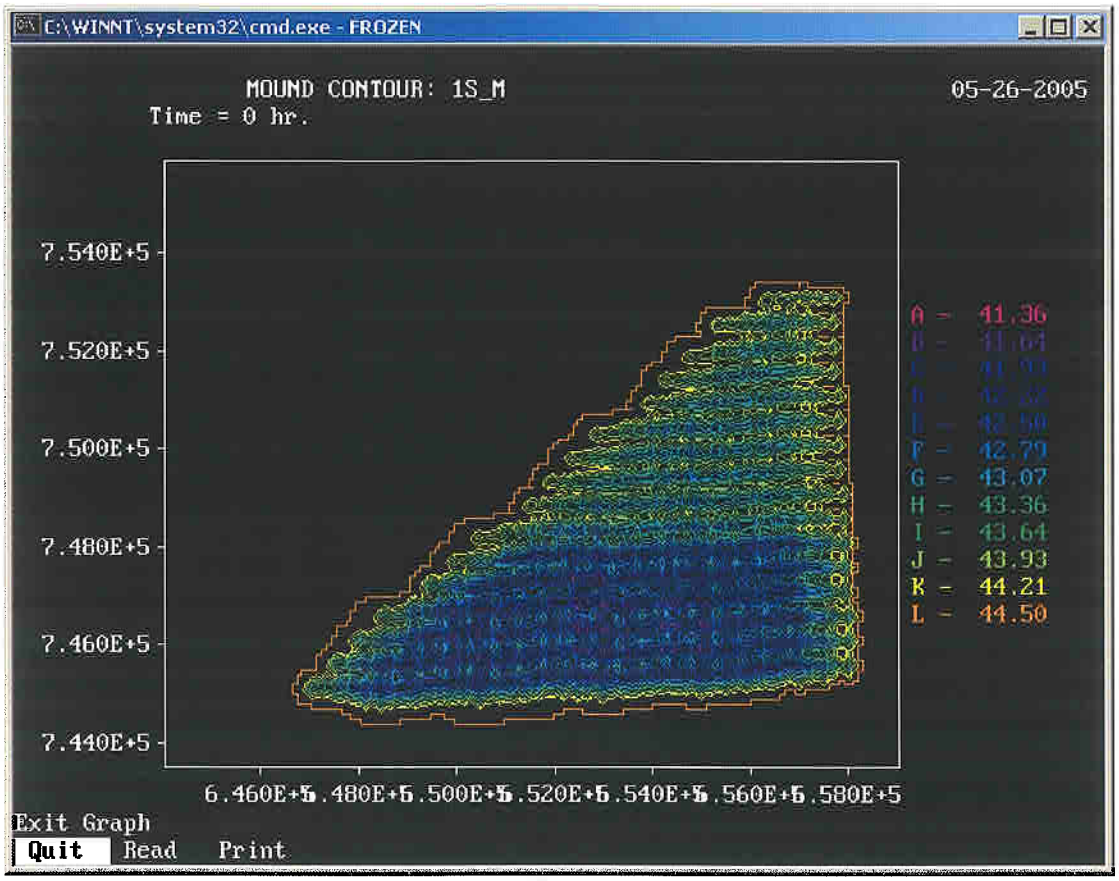
Placement Area 1, New Work Material, Small hopper. Max mound height = 5.25 ft.
185 dump points at 500 ft spacing.



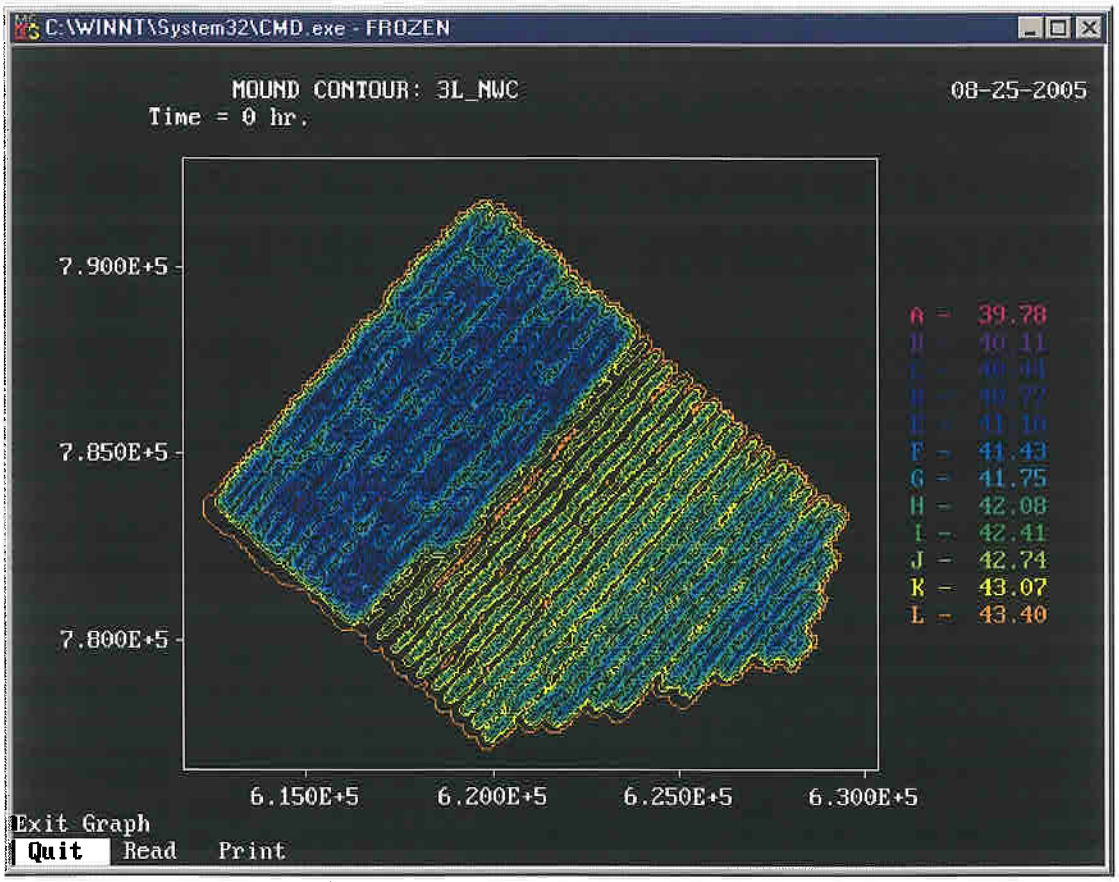
Placement Area 1, Maintenance Material, Large hopper. Max mound height = 4.17 ft.
109 dump points at 500 ft spacing.

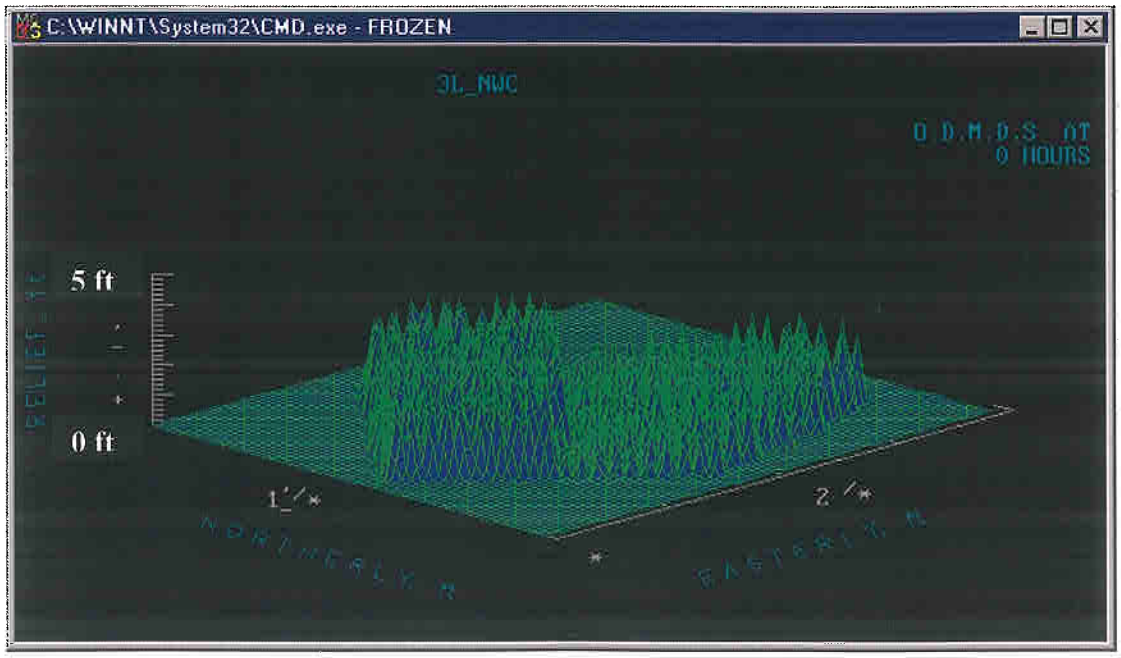


Placement Area 1, Maintenance Material, Small hopper. Max mound height = 3.14 ft.
173 dump points at 500 ft spacing.

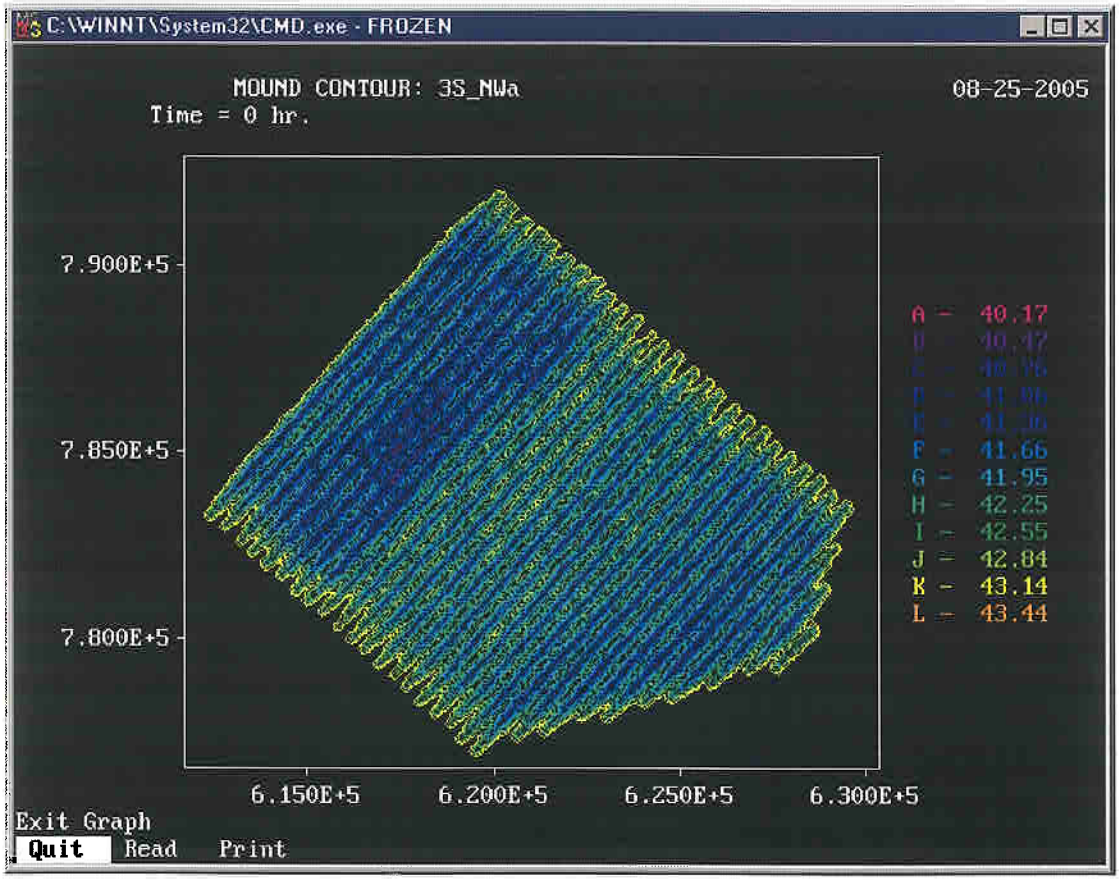


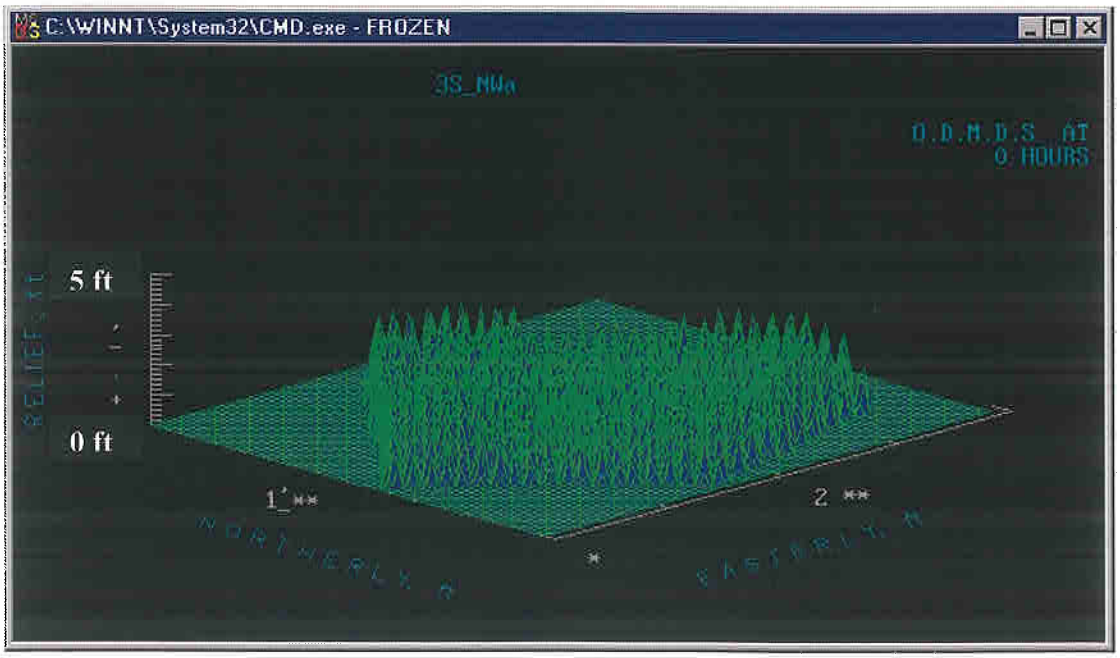
Placement Area 3, New Work Material destined for ODMDS B and PA3 placed into PA3, Large hopper. Max mound height = 4.42 ft (3.66 ft).
1319 dump points at 500 ft spacing.



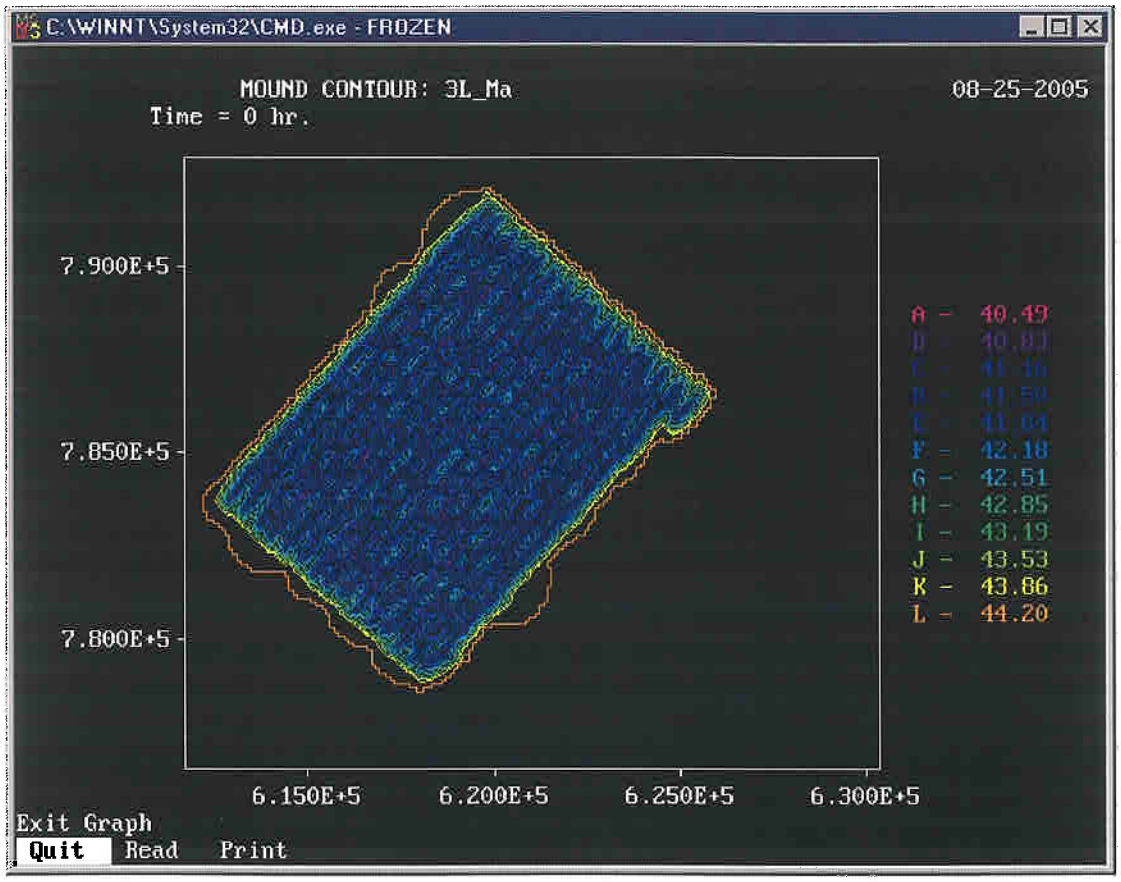


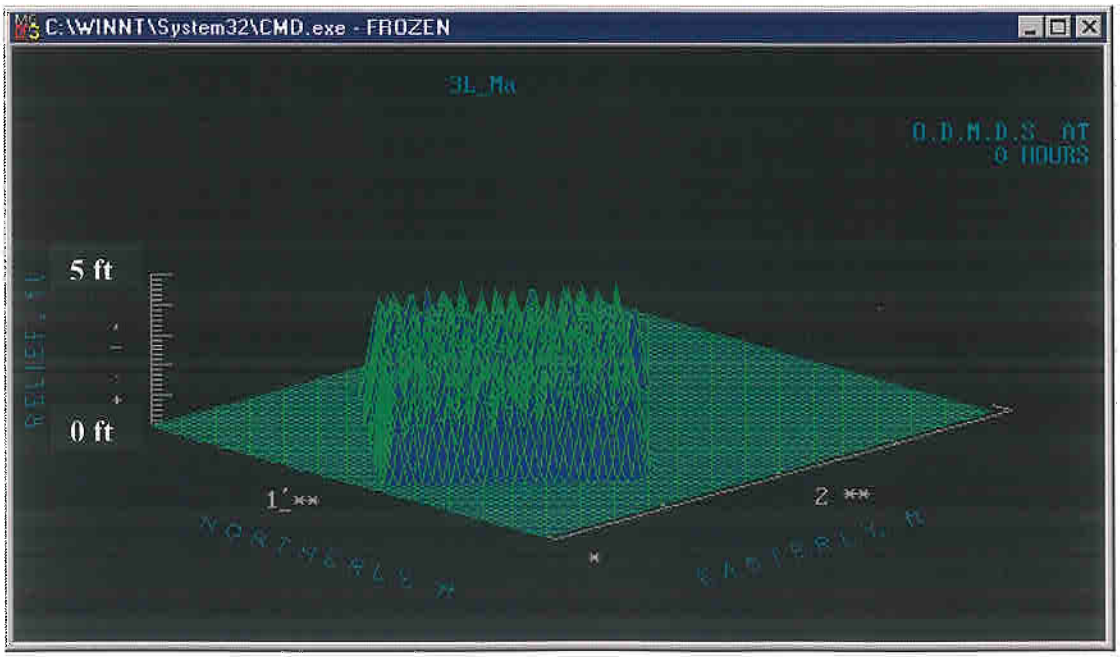
Placement Area 3, New Work Material destined for ODMDS B and PA3 placed into PA3, Small hopper. Max mound height =4.03 ft (3.27 ft).
3364 dump points at 500 ft spacing.



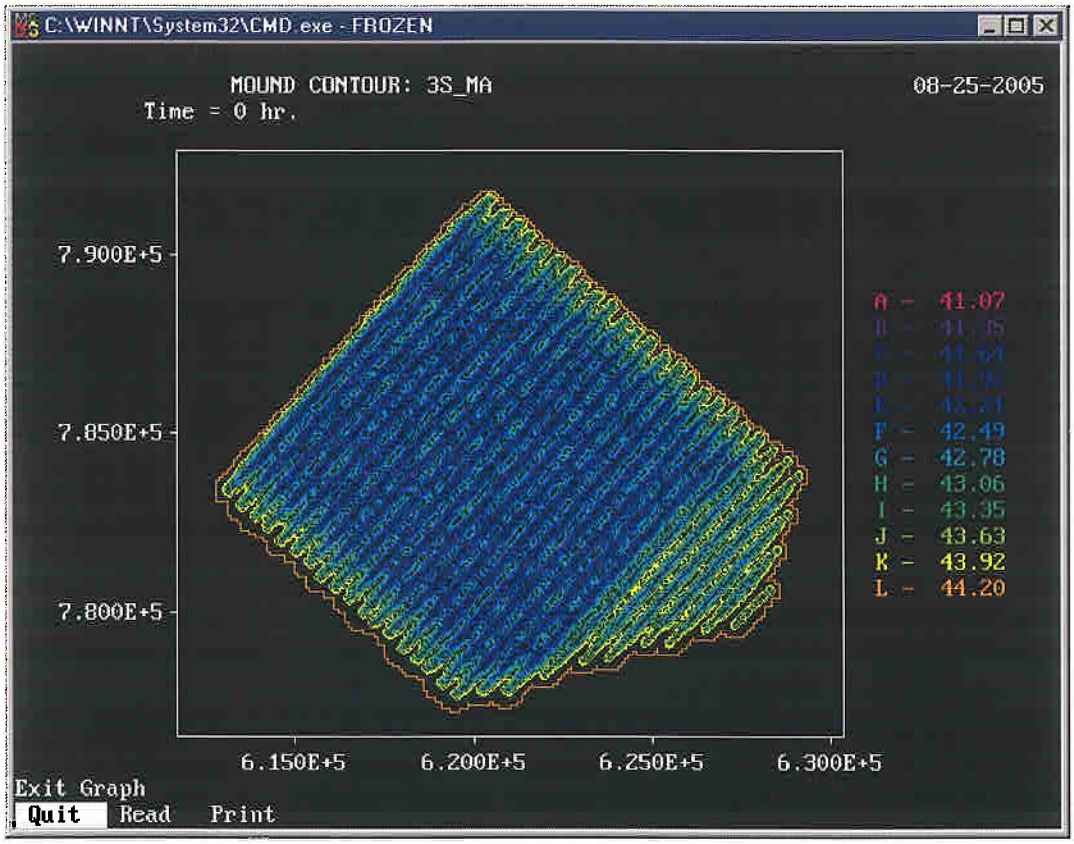


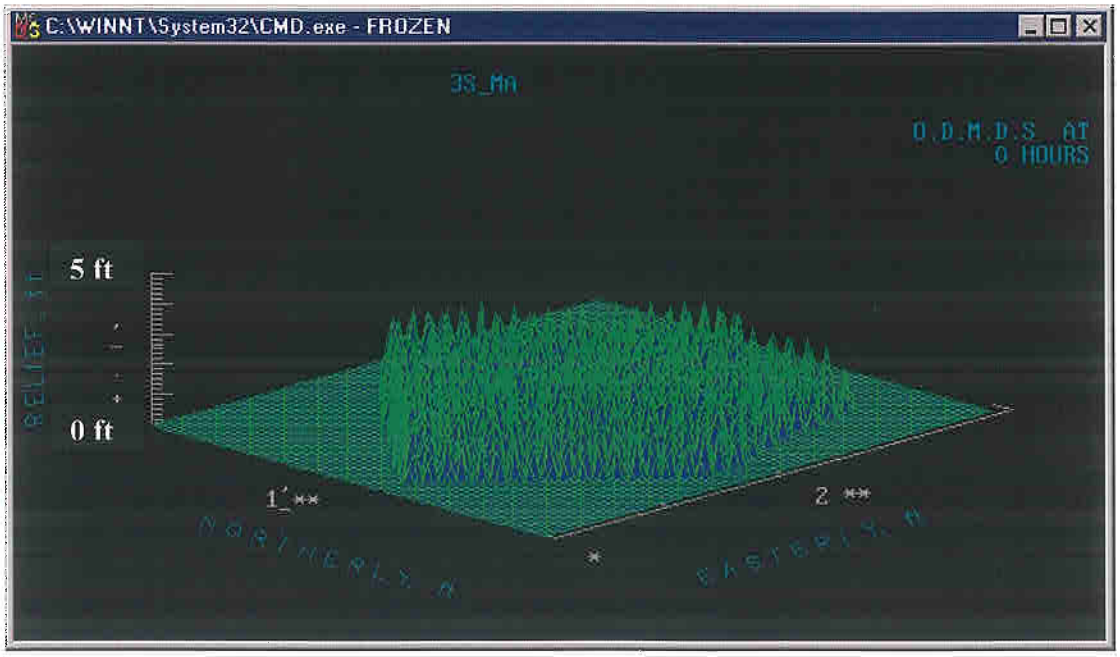
Placement Area 3, Maintenance Material destined for ODMDS B and PA3 placed into PA3, Large hopper. Max mound height = 3.71 ft.
340 dump points at 500 ft spacing.





Placement Area 3, Maintenance Material destined for ODMDS B and PA3 placed into PA3, Small hopper. Max mound height = 3.12 ft.
865 dump points at 500 ft spacing.





Attachment B

Tables from PBS&J (2004)

TABLE 1

STANDARD PARAMETERS
SNWW ENTRANCE CHANNEL EXTENSION

Station	Date	Time	Channel Station	Water Depth (ft)	Dissolved Oxygen (mg/L)	pH	Salinity (‰)	Water Temp (°C)	Air Temp (°C)	Coordinates Latitude (N) Deg.	Min.	Sec.	Longitude (W) Deg.	Min.	Sec.
SN-CH- 100A	3/9/2004	0824	100+000	48.0	9.06	8.05	28.38	16.9	17.4	29	25	24.4	93	40	3.7
SN-CH- 100B	3/9/2004	0940	100+000	48.0	9.01	8.10	24.00	16.9	17.5	29	25	24.4	93	40	0.6
SN-CH- 100C	3/9/2004	1645	100+000	48.0	9.52	8.03	23.27	18.2	19.5	29	25	24.4	93	39	57.5
SN-CH- 130A	3/9/2004	1722	130+000	48.0	9.70	8.04	26.60	17.7	19.5	29	20	26.9	93	40	3.7
SN-CH- 130B	3/9/2004	1740	130+000	48.0	9.76	8.10	26.75	17.8	19.0	29	20	26.9	93	40	0.6
SN-CH- 130C	3/9/2004	1755	130+000	48.0	9.66	8.09	26.72	17.8	18.8	29	20	26.9	93	39	57.5
SN-CH- 160A	3/9/2004	1939	160+000	45.0	9.08	8.00	31.56	17.6	18.5	29	15	30.0	93	40	3.7
SN-CH- 160B	3/9/2004	1950	160+000	45.0	9.08	8.00	31.55	17.6	18.5	29	15	30.0	93	40	0.6
SN-CH- 160C	3/9/2004	2000	160+000	45.0	9.09	8.01	31.56	17.6	18.5	29	15	30.0	93	39	57.5
SN-ZSF- 01	3/9/2004	0745	N/A	48.0	8.77	8.10	28.81	16.9	16.6	29	25	20.8	93	41	13.7
SN-ZSF- 02	3/9/2004	0727	N/A	48.0						29	25	21.6	93	42	10.3
SN-ZSF- 03	3/9/2004	0715	N/A	48.0						29	25	21.6	93	43	6.4
SN-ZSF- 04	3/9/2004	0650	N/A	47.0						29	25	22.3	93	44	3.6
SN-ZSF- 05	3/9/2004	1030	N/A	47.0						29	24	35.0	93	41	13.3
SN-ZSF- 06	3/9/2004	1039	N/A	46.0						29	24	35.0	93	42	10.2
SN-ZSF- 07	3/9/2004	1047	N/A	46.0						29	24	34.5	93	43	6.5
SN-ZSF- 08	3/9/2004	1054	N/A	43.0	9.71	8.13	23.75	16.9	18.5	29	24	34.5	93	44	3.4
SN-ZSF- 09	3/9/2004	1148	N/A	42.0						29	23	45.5	93	41	14.0
SN-ZSF- 10	3/9/2004	1135	N/A	33.0						29	23	45.7	93	42	10.5
SN-ZSF- 11	3/9/2004	1127	N/A	40.0	9.69	8.08	26.40	17.0	18.8	29	23	45.3	93	43	6.4
SN-ZSF- 12	3/9/2004	1111	N/A	40.0						29	23	5.7	93	44	2.9
SN-ZSF- 13	3/9/2004	1205	N/A	46.0						29	22	55.7	93	41	13.3
SN-ZSF- 14	3/9/2004	1220	N/A	41.0	9.69	8.00	25.28	17.4	19.3	29	22	55.7	93	42	10.4
SN-ZSF- 15	3/9/2004	1314	N/A	42.0						29	22	56.1	93	43	6.9
SN-ZSF- 16	2/28/2004	1433	N/A	40.0						29	22	55.8	93	44	3.4
SN-ZSF- 17	2/28/2004	1320	N/A	44.6	8.80	8.15	35.94	14.9	17.0	29	22	6.5	93	41	12.0
SN-ZSF- 18	2/28/2004	1336	N/A	44.5						29	22	6.2	93	42	10.3
SN-ZSF- 19	2/28/2004	1355	N/A	44.5						29	22	6.1	93	43	6.5
SN-ZSF- 20	2/28/2004	1416	N/A	43.5						29	22	6.2	93	44	3.0
SN-ZSF- 21	2/28/2004	1256	N/A	43.7						29	21	17.1	93	41	12.6
SN-ZSF- 22	2/28/2004	1237	N/A	43.0						29	21	16.8	93	42	10.2
SN-ZSF- 23	2/28/2004	1220	N/A	45.0						29	21	16.6	93	43	6.7
SN-ZSF- 24	2/28/2004	1201	N/A	45.5	9.05	8.14	35.41	14.7	17.0	29	21	16.7	93	44	3.4
SN-ZSF- 25	2/28/2004	1045	N/A	44.0						29	20	27.2	93	41	12.7
SN-ZSF- 26	2/28/2004	1055	N/A	45.0						29	20	26.8	93	42	10.4
SN-ZSF- 27	2/28/2004	1119	N/A	44.3	8.74	8.14	35.56	14.7	16.7	29	20	27.2	93	43	6.5
SN-ZSF- 28	2/28/2004	1130	N/A	46.0						29	20	26.7	93	44	3.0
SN-ZSF- 29	2/28/2004	0930	N/A	45.9						29	19	38.0	93	41	12.8
SN-ZSF- 30	2/28/2004	0915	N/A	44.3	8.65	8.15	35.65	14.8	16.0	29	19	37.9	93	42	9.9
SN-ZSF- 31	2/28/2004	0900	N/A	45.2						29	19	37.7	93	43	6.6
SN-ZSF- 32	2/28/2004	0825	N/A	45.3						29	19	37.8	93	44	3.4
SN-ZSF- 33	2/27/2004	1945	N/A	44.8	8.92	8.18	34.84	14.5	10.9	29	18	47.7	93	41	12.7
SN-ZSF- 34	2/27/2004	2004	N/A	46.0						29	18	47.9	93	42	10.4
SN-ZSF- 35	2/27/2004	2015	N/A	46.0						29	18	48.0	93	43	6.5
SN-ZSF- 36	2/28/2004	0800	N/A	48.8						29	18	48.3	93	44	2.9
SN-ZSF- 37	2/27/2004	1726	N/A	44.5						29	17	58.8	93	41	13.1
SN-ZSF- 38	2/27/2004	1915	N/A	46.0						29	17	58.7	93	42	10.8
SN-ZSF- 39	2/27/2004	1902	N/A	46.5						29	17	59.1	93	43	6.6
SN-ZSF- 40	2/27/2004	1849	N/A	46.5	8.92	8.18	35.04	14.6	10.7	29	17	58.6	93	44	3.3
SN-ZSF- 41	2/27/2004	1752	N/A	44.9						29	17	9.1	93	41	13.3
SN-ZSF- 42	2/27/2004	1802	N/A	43.9						29	17	9.3	93	42	10.6
SN-ZSF- 43	2/27/2004	1817	N/A	43.3	8.92	8.18	35.26	14.9	11.5	29	17	9.4	93	43	7.0
SN-ZSF- 44	2/27/2004	1827	N/A	44.5						29	17	9.2	93	44	2.8
SN-ZSF- 45	2/27/2004	1742	N/A	43.0						29	16	21.5	93	41	12.7
SN-ZSF- 46	2/27/2004	1730	N/A	42.5	8.86	8.17	35.88	15.0	13.0	29	16	20.9	93	42	10.4
SN-ZSF- 47	2/27/2004	1718	N/A	43.0						29	16	20.4	93	43	6.0
SN-ZSF- 48	2/27/2004	1707	N/A	44.2						29	16	19.7	93	44	2.9
SN-ZSF- 49	2/27/2004	1602	N/A	45.2	8.88	8.15	36.71	15.4	13.2	29	15	30.4	93	41	12.6
SN-ZSF- 50	2/27/2004	1621	N/A	44.0						29	15	30.3	93	42	10.6
SN-ZSF- 51	2/27/2004	1630	N/A	43.8	8.86	8.16	36.48	15.2	13.2	29	15	30.4	93	43	6.4
SN-ZSF- 52	2/27/2004	1655	N/A	44.0						29	15	30.8	93	44	3.0
SN-ZSF- 53	2/27/2004	1346	N/A	48.3						29	14	41.0	93	41	13.7
SN-ZSF- 54	2/27/2004	1329	N/A	46.4						29	14	40.9	93	42	10.4
SN-ZSF- 55	2/27/2004	1317	N/A	45.8						29	14	41.0	93	43	6.8
SN-ZSF- 56	2/27/2004	1305	N/A	44.6	9.05	8.11	36.82	15.3	17.7	29	14	40.8	93	44	3.2

TABLE 3

CONCENTRATIONS OF DETECTED COMPOUNDS (µg/L)
WATER
SNWW ENTRANCE CHANNEL EXTENSION

Date Sampled: February 28, 2004

Parameter	WQC** Acute	WQC** Chronic	Detection Limit	SN-03- CH-100	SN-03- CH-130	SN-03- CH-130 Dup	SN-03- CH-160	SN-03- ZSF-REF	Field Blank
Arsenic	69	36	1.00	2.17	3.24	3.63	3.67	2.21	BDL
Chromium, Total	N/A	N/A	1.00	BDL	BDL	BDL	BDL	BDL	BDL
Chromium, III	N/A	N/A	1.00	BDL	BDL	BDL	BDL	BDL	BDL
Copper	4.8	3.10	1.00	2.28	2.29	2.47	1.69	**5.10**	BDL
Mercury	1.8	0.94	0.20	BDL	BDL	0.83	1.21	BDL	BDL
Nickel	74	8.2	1.00	1.02	BDL	BDL	BDL	BDL	BDL
Selenium	290	71.0	2.00	BDL	BDL	2.62	BDL	BDL	BDL
Zinc	90.0	81.0	1.00	2.70	BDL	1.71	BDL	2.34	2.12
Ammonia*	N/A	N/A	0.03	0.04	0.06	0.05	0.05	0.04	N/A
TOC*	N/A	N/A	0.10	3.65	2.26	1.86	2.46	3.64	N/A
Dibutylphthalate	2,944***	3.4***	1.00	BDL	BDL	1.10	BDL	BDL	N/A
Cyanide*	1.0	1.0	0.10	BDL	BDL	BDL	BDL	BDL	N/A

Dup = Duplicate Sample
BDL = Below Detection Limits
* mg/L
** For Saltwater
*** Lowest Observable Effect Level for this class of compounds, not a chemical specific WQC

TABLE 4

CONCENTRATIONS OF DETECTED COMPOUNDS (µg/L)
ELUTRIATE
SNWW ENTRANCE CHANNEL EXTENSION

Date Sampled: February 28, 2004

Parameter	WQC** Acute	WQC** Chronic	Detection Limit	SN-03- CH-100	SN-03- CH-130	SN-03- CH-130 Dup	SN-03- CH-160	SN-03- ZSF-REF
Arsenic	69	36	1.00	3.98	3.08	3.94	4.40	2.73
Chromium, Total	N/A	N/A	1.00	BDL	BDL	BDL	BDL	9.70
Chromium, III	N/A	N/A	1.00	BDL	BDL	BDL	BDL	9.70
Copper	4.8	3.10	1.00	1.70	1.47	1.24	1.76	**7.02**
Mercury	1.8	0.94	0.20	BDL	0.32	0.44	0.31	BDL
Nickel	74	8.2	1.00	1.67	1.49	1.38	1.58	**16.9**
Selenium	290	71.0	2.00	BDL	BDL	BDL	BDL	BDL
Zinc	90.0	81.0	1.00	2.45	10.5	2.00	1.76	**84.1**
Ammonia*	N/A	N/A	0.03	0.06	0.07	0.07	0.08	0.07
TOC*	N/A	N/A	0.10	3.22	4.92	2.51	3.13	3.64
Dibutylphthalate	2,944***	3.4***	2.00	BDL	BDL	BDL	BDL	BDL
Cyanide*	1.0	1.0	0.10	BDL	BDL	0.19	BDL	BDL

Dup = Duplicate Sample
BDL = Below Detection Limits
* mg/L
** For Saltwater

TABLE 5

CONCENTRATIONS OF DETECTED COMPOUNDS (dry weight)
SEDIMENT
SNWW ENTRANCE CHANNEL EXTENSION

Date Sampled: February 28, 2004

				SN-03-									
Parameter	Units	Detection Limit	NOAA ERL	CH-100	CH-130	CH-130 Dup	CH-160	ZSF-REF	ZSF-01	ZSF-02	ZSF-03	ZSF-04	ZSF-05
Arsenic	mg/kg	0.30	8.2	3.88	3.96	2.12	2.79	1.99					
Chromium, Total	mg/kg	1.00	81.0	12.8	14.0	5.34	5.81	8.02					
Chromium III	mg/kg	1.00	N/A	12.8	14.0	5.34	5.81	8.02					
Copper	mg/kg	1.00	34.0	3.52	27.4	2.00	2.44	BDL					
Lead	mg/kg	0.30	46.7	5.82	4.62	3.96	5.79	2.24					
Nickel	mg/kg	0.50	20.9	6.26	13.8	4.49	5.39	3.22					
Selenium	mg/kg	0.50	N/A	BDL	BDL	BDL	BDL	BDL					
Thallium	mg/kg	0.20	N/A	0.29	0.44	BDL	0.44	0.27					
Zinc	mg/kg	2.00	150	35.0	18.0	9.68	9.42	18.2					
Ammonia	mg/kg	0.10	N/A	44.1	11.1	22.1	23.9	8.11					
TOC	%	0.1	N/A	0.42	0.12	0.26	0.25	0.15					
Percent Solids	%	0.10	N/A	73.4	79.0	78.1	78.2	81.5					
Gravel	%	N/A		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sand	%	N/A		63.9	90.1	89.4	74.8	97.6	59.4	53.5	58.4	56.8	46.3
Silt	%	N/A		21.0	8.3	7.7	7.8	0.3	26.8	39.0	35.8	17.4	37.9
Clay	%	N/A		7.0	1.6	2.9	8.0	1.2	7.2	6.5	4.9	6.5	6.4
D50	mm	N/A		0.25	0.20	0.19	0.25	0.29	0.18	0.12	0.17	0.23	0.16

TABLE 5 (Cont'd)

Parameter	Units	Detection Limit	NOAA ERL	SN-03-									
				ZSF-06	ZSF-07	ZSF-08	ZSF-09	ZSF-10	ZSF-11	ZSF-12	ZSF-13	ZSF-14	ZSF-15
Gravel	%	N/A		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sand	%	N/A		56.8	38.9	82.6	89.7	95.3	98.1	92.7	64.5	99.7	97.8
Silt	%	N/A		31.2	53.2	12.4	6.6	0.0	0.7	0.1	22.7	0.0	0.0
Clay	%	N/A		5.8	4.0	5.0	2.2	2.9	1.2	6.6	5.9	1.2	3.6
D50	mm	N/A		0.22	0.07	0.23	0.25	0.50	0.21	0.23	0.23	0.27	0.22

Parameter	Units	Detection Limit	NOAA ERL	SN-03-									
				ZSF-16	ZSF-17	ZSF-18	ZSF-19	ZSF-20	ZSF-21	ZSF-22	ZSF-23	ZSF-24	ZSF-25
Gravel	%	N/A		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sand	%	N/A		92.0	81.9	58.1	90.6	87.6	93.3	73.1	67.8	78.9	73.9
Silt	%	N/A		5.2	10.0	39.1	4.5	12.0	2.0	24.7	25.3	18.0	21.4
Clay	%	N/A		2.8	6.1	1.5	4.0	0.4	4.2	1.6	4.2	3.1	4.4
D50	mm	N/A		0.22	0.19	0.15	0.23	0.18	0.23	0.17	0.20	0.18	0.20

TABLE 5 (Cont'd)

Parameter	Units	Detection Limit	NOAA ERL	SN-03- ZSF-26	ZSF-27	ZSF-28	ZSF-29	ZSF-30	ZSF-31	ZSF-32	ZSF-33	ZSF-34	ZSF-35
Gravel	%	N/A		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand	%	N/A		67.8	63.6	72.0	59.4	63.5	68.1	68.4	74.4	73.1	70.3
Silt	%	N/A		27.8	28.0	21.7	34.3	30.2	24.4	24.6	19.7	20.2	23.8
Clay	%	N/A		4.4	8.4	5.4	6.3	6.3	7.0	4.4	5.6	5.7	5.9
D50	mm	N/A		0.16	0.14	0.21	0.14	0.15	0.17	0.21	0.18	0.22	0.18

Parameter	Units	Detection Limit	NOAA ERL	SN-03- ZSF-36	ZSF-37	ZSF-38	ZSF-39	ZSF-40	ZSF-41	ZSF-42	ZSF-43	ZSF-44	ZSF-45
Gravel	%	N/A		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sand	%	N/A		62.5	87.1	75.8	62.3	57.3	86.1	94.7	93.3	77.0	74.1
Silt	%	N/A		28.7	7.0	15.3	30.4	35.9	9.1	3.5	1.3	16.3	15.7
Clay	%	N/A		7.4	5.9	8.1	6.4	6.8	4.5	1.8	5.4	6.7	4.2
D50	mm	N/A		0.22	0.20	0.22	0.22	0.17	0.21	0.24	0.22	0.22	0.24

TABLE 5 (Cont'd)

Parameter	Units	Detection Limit	NOAA ERL	SN-03- ZSF-46	ZSF-47	ZSF-48	ZSF-49	ZSF-50	ZSF-51	ZSF-52	ZSF-53	ZSF-54	ZSF-55
Gravel	%	N/A		0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0
Sand	%	N/A		70.2	96.8	83.5	62.0	81.9	78.5	66.8	58.0	94.2	99.1
Silt	%	N/A		20.1	0.2	10.6	29.3	16.2	0.7	22.9	36.7	3.9	0.0
Clay	%	N/A		5.1	3.0	5.9	6.6	1.9	4.3	10.3	4.9	1.9	3.2
D50	mm	N/A		0.23	0.21	0.23	0.18	0.23	0.32	0.18	0.14	0.22	0.24

Parameter	Units	Detection Limit	ZSF-56
Gravel	%	N/A	0.0
Sand	%	N/A	98.3
Silt	%	N/A	0.0
Clay	%	N/A	1.7
D50	mm	N/A	0.21

Dup = Duplicate Sample
BDL = Below Detection Limit
N/A = Not Applicable.

TABLE 6
THE NUMBER AND PERCENTAGES OF SURVIVING ORGANISMS
SUSPENDED PARTICULATE PHASE BIOASSAYS
100% TEST SOLUTION
March 2004

		Number of Survivors							
	Replicate	Dilution Control	Reference Control	Dilution Control	SN-CH-100	Dilution Control	SN-CH-130	Dilution Control	SN-CH-160
A. bahia	1	10	9	10	10	10	9	10	9
juveniles	2	10	10	10	10	10	10	10	10
10/replicate	3	10	10	10	10	10	10	9	10
	4	10	10	10	10	10	10	10	10
	5	10	10	10	10	10	9	10	10
	Average	10.0	9.8	10.0	10.0	10.0	9.6	9.8	9.8
	(%)	100.0%	98.0%	100.0%	100.0%	100.0%	96.0%	98.0%	98.0%
A. bahia	1	9	9	9	10	9	10	9	10
adults	2	10	10	10	10	10	10	10	10
10/replicate	3	10	10	10	10	10	10	10	10
	4	9	10	9	9	9	10	9	10
	5	10	9	10	10	10	10	10	10
	Average	9.6	9.6	9.6	9.8	9.6	10.0	9.6	10.0
	(%)	96.0%	96.0%	96.0%	98.0%	96.0%	100.0%	96.0%	100.0%
M. beryllina	1	10	9	10	10	10	10	10	9
10/replicate	2	9	10	9	8	9	10	9	7
	3	9	10	9	10	9	10	9	10
	4	10	9	10	10	10	9	10	10
	5	9	10	9	10	9	10	9	9
	Average	9.4	9.6	9.4	9.6	9.4	9.8	9.4	9.0
	(%)	94.0%	96.0%	94.0%	96.0%	94.0%	98.0%	94.0%	90.0%

TABLE 7
THE NUMBER AND PERCENTAGES OF SURVIVING ORGANISMS
10-DAY SOLID PHASE BIOASSAYS & 28-DAY BIOACCUMULATION STUDY
SNWW ENTRANCE CHANNEL EXTENSION

		Number of Survivors				
	Replicate (n=5)	True Control	Reference Control	SN-CH-100	SN-CH-130	SN-CH-160
10-DAY	1	12	11	11	17	17
L. plumulosis	2	16	16	16	19	18
20/replicate	3	18	18	15	17	16
	4	16	11	15	13	17
	5	19	15	14	9	15
	Average	16.2	14.2	14.2	15.0	16.6
	(%)	81.0%	71.0%	71.0%	75.0%	83.0%
A. bahia	1	19	19	20	18	19
20/replicate	2	20	20	19	20	20
	3	20	20	20	20	18
	4	20	20	20	20	19
	5	19	19	19	20	19
	Average	19.6	19.6	19.6	19.6	19.0
	(%)	98.0%	98.0%	98.0%	98.0%	95.0%
Total Organisms	1	31	30	31	35	36
30/replicate	2	36	36	35	39	38
	3	38	38	35	37	34
	4	36	31	35	33	36
	5	38	34	33	29	34
	Average	35.8	33.8	33.8	34.6	35.6
	(%)	89.5%	84.5%	84.5%	86.5%	89.0%
28-DAY	1	15	15	16	18	19
N. virens	2	18	16	17	15	17
20/replicate	3	20	14	12	17	15
	4	17	16	12	18	17
	5	16	20	13	17	17
	Average	17.2	16.2	14.0	17.0	17.0
	(%)	86.0%	81.0%	70.0%	85.0%	85.0%
	1	20	19	20	19	19
M. mercenaria	2	20	20	20	19	20
15/replicate	3	20	19	20	19	20
	4	20	20	20	20	20
	5	19	20	19	20	20
	Average	19.8	19.6	19.8	19.4	19.8
	(%)	99.0%	98.0%	99.0%	97.0%	99.0%

TABLE 8
CONCENTRATIONS OF DETECTED COMPOUNDS
IN TISSUE SAMPLES OF
N. virens
SNWW ENTRANCE CHANNEL EXTENSION

		STATION				
Parameter	Replicate	True Control	Reference Control	SN-CH-100	SN-CH-130	SN-CH-160
Metals (mg/kg)						
Arsenic	1	3.53	2.21	2.54	2.74	2.84
	2	3.43	2.48	2.81	2.51	2.69
	3	3.76	2.46	2.37	2.70	2.71
	4	3.30	2.81	2.23	2.51	3.08
	5	3.68	3.44	2.41	2.83	2.76
	Total	17.70	13.40	12.36	13.29	14.08
	Average	3.54	2.68	2.47	2.66	2.82
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Chromium	1	0.14	0.15	0.12	0.27	0.20
	2	0.14	0.12	0.12	0.32	0.12
	3	0.14	0.21	0.12	0.23	0.15
	4	0.16	0.27	0.13	0.25	0.12
	5	0.15	0.19	0.29	0.25	0.13
	Total	0.73	0.94	0.78	1.32	0.72
	Average	0.15	0.19	0.16	0.26	0.14
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Copper	1	1.37	1.25	1.31	1.33	1.42
	2	1.31	1.39	1.30	1.46	1.30
	3	1.19	1.27	1.36	1.32	1.34
	4	1.38	1.56	1.24	1.40	1.28
	5	1.33	1.26	1.29	1.32	1.38
	Total	6.58	6.73	6.50	6.83	6.72
	Average	1.32	1.35	1.30	1.37	1.34
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Lead	1	< 0.10	< 0.10	< 0.10	0.12	< 0.10
	2	< 0.10	< 0.10	< 0.10	0.11	< 0.10
	3	< 0.10	0.12	< 0.10	< 0.10	< 0.10
	4	< 0.10	0.13	0.11	0.12	< 0.10
	5	0.13	< 0.10	0.16	< 0.10	< 0.10
	Total	0.53	0.55	0.57	0.55	0.10
	Average	0.11	0.11	0.11	0.11	0.10
		Parameter concentration in test tissues are not greater than in reference tissues, therefore, no statistical analyses of the data are required.				
Mercury	1	0.03	0.02	0.03	0.04	0.04
	2	0.03	0.03	0.03	0.03	0.03
	3	0.03	0.04	0.03	0.03	0.03
	4	0.03	0.04	0.03	0.03	0.04

TABLE 8 (Concluded)

Parameter	Replicate	STATION True Control	Reference Control	SN-CH-100	SN-CH-130	SN-CH-160
Metals (mg/kg)						
Nickel	1	0.27	0.33	0.31	0.28	0.31
	2	0.24	0.34	0.29	0.30	0.29
	3	0.28	0.41	0.29	0.28	0.29
	4	0.29	0.28	0.29	0.33	0.32
	5	0.31	0.29	0.28	0.30	0.30
	Total	1.39	1.65	1.46	1.49	1.51
	Average	0.28	0.33	0.29	0.30	0.30
		Parameter concentration in test tissues are not greater than in reference tissues, therefore, no statistical analyses of the data are required.				
Selenium	1	0.29	0.30	0.30	0.30	0.35
	2	0.29	0.30	0.29	0.26	0.29
	3	0.26	0.29	0.30	0.29	0.30
	4	0.27	0.30	0.27	0.30	0.29
	5	0.29	0.26	0.29	0.29	0.28
	Total	1.40	1.45	1.45	1.44	1.51
	Average	0.28	0.29	0.29	0.29	0.30
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Zinc	1	32.0	9.58	26.5	41.2	10.0
	2	39.1	33.4	33.2	25.4	28.6
	3	9.90	37.1	30.3	33.8	22.0
	4	10.1	24.9	9.88	36.2	28.9
	5	27.3	13.6	42.7	9.49	26.2
	Total	118.4	118.6	142.6	146.1	115.7
	Average	23.7	23.7	28.5	29.2	23.1
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Cyanide	1	< 1.00	< 1.00	2.30	< 1.00	< 1.00
	2	< 1.00	< 1.00	2.51	< 1.00	3.09
	3	< 1.00	< 1.00	2.01	< 1.00	< 1.00
	4	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
	5	< 1.00	< 1.00	1.13	< 1.00	2.43
	Total	5.00	5.00	8.95	5.00	8.52
	Average	1.00	1.00	1.79	1.00	1.70
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				

TABLE 9
CONCENTRATIONS OF DETECTED COMPOUNDS
IN TISSUE SAMPLES OF
M. mercenaria
SNWW ENTRANCE CHANNEL EXTENSION

		Station				
Parameter	Replicate	True Control	Reference Control	SN-CH-100	SN-CH-130	SN-CH-160
Metals (mg/kg)						
Arsenic	1	1.91	2.29	1.68	2.20	2.12
	2	2.46	2.66	2.51	2.03	2.14
	3	2.37	2.42	2.26	2.47	2.40
	4	2.26	2.31	2.51	2.31	2.13
	5	2.26	2.13	2.37	2.43	1.96
	Total	11.26	11.81	11.33	11.44	10.75
	Average	2.25	2.36	2.27	2.29	2.15
		Parameter concentration in test tissues are not greater than in reference tissues, therefore, no statistical analyses of the data are required.				
Chromium	1	0.18	0.10	0.13	0.15	0.13
	2	0.08	0.12	0.07	0.13	0.37
	3	0.13	0.15	0.09	0.10	0.11
	4	0.11	0.11	0.08	0.12	0.08
	5	0.18	0.12	0.08	0.14	0.56
	Total	0.68	0.60	0.45	0.64	1.25
	Average	0.14	0.12	0.09	0.13	0.25
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Copper	1	1.64	1.48	1.56	1.87	1.71
	2	1.57	1.88	1.06	1.53	1.69
	3	1.67	1.68	1.21	1.65	1.82
	4	1.67	1.54	1.25	1.56	1.41
	5	1.79	1.31	1.18	1.43	1.30
	Total	8.34	7.89	6.26	8.04	7.93
	Average	1.67	1.58	1.25	1.61	1.59
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Lead	1	< 0.10	< 0.10	< 0.10	0.13	0.17
	2	0.11	0.16	< 0.10	0.18	0.18
	3	0.15	0.17	< 0.10	0.11	0.15
	4	0.12	0.12	< 0.10	0.17	0.13
	5	0.16	< 0.10	< 0.10	< 0.10	0.12
	Total	0.64	0.65	0.50	0.69	0.75
	Average	0.13	0.13	0.10	0.14	0.15
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Mercury	1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

TABLE 9 (Concluded)

Parameter	Replicate	Station: True Control	Reference Control	SN-CH-100	SN-CH-130	SN-CH-160
Metals (mg/kg)						
Nickel	1	0.49	0.47	0.49	0.47	0.60
	2	0.49	0.61	0.31	0.43	0.78
	3	0.69	0.67	0.37	0.52	0.57
	4	0.52	0.50	0.36	0.47	0.42
	5	0.73	0.46	0.41	0.47	0.64
	Total	2.92	2.71	1.94	2.36	3.01
	Average	0.58	0.54	0.39	0.47	0.60
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Selenium	1	0.19	0.18	0.18	0.17	0.21
	2	0.21	0.21	0.15	0.17	0.22
	3	0.22	0.21	0.14	0.17	0.21
	4	0.22	0.18	0.15	0.19	0.18
	5	0.21	0.16	0.14	0.17	0.21
	Total	1.05	0.94	0.76	0.87	1.03
	Average	0.21	0.19	0.15	0.17	0.21
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Silver	1	0.11	0.17	0.12	0.11	0.16
	2	0.15	0.23	0.08	0.18	0.21
	3	0.18	0.21	0.07	0.13	0.18
	4	0.11	0.09	0.06	0.19	0.12
	5	0.19	0.12	0.06	0.16	0.18
	Total	0.74	0.82	0.39	0.77	0.85
	Average	0.15	0.16	0.08	0.15	0.17
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Zinc	1	10.8	9.53	11.2	11.6	13.4
	2	10.1	12.7	7.00	10.5	14.1
	3	17.3	13.7	7.51	11.0	12.4
	4	12.5	12.1	7.67	11.6	9.60
	5	14.7	10.5	8.66	10.5	13.1
	Total	65.4	58.5	42.0	55.2	62.6
	Average	13.1	11.7	8.41	11.0	12.5
		Parameter concentration in test tissues are greater than in reference tissues, therefore, statistical analyses of the data are required.				
Cyanide	1	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
	2	< 1.00	< 1.00	< 1.00	1.05	1.06
	3	< 1.00	1.34	< 1.00	1.08	1.73
	4	< 1.00	1.22	< 1.00	< 1.00	< 1.00
	5	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
	Total	5.00	5.56	5.00	5.13	5.79
	Average	1.00	1.11	1.00	1.03	1.16

Attachment C

Site Management and Monitoring Plan

ATTACHMENT C
SITE MANAGEMENT AND MONITORING PLAN
SABINE-NECHES WATERWAY, TEXAS
OCEAN DREDGED MATERIAL DISPOSAL SITES

I. GENERAL

The Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 USC Section 1401, et seq.) is the legislative authority regulating the disposal of dredged material into ocean waters, including the territorial sea. The transportation of dredged material for the purpose of placement into ocean waters is permitted by the U.S. Army Corps of Engineers (USACE) or in the case of Federal projects, authorized for disposal under MPRSA Section 103(e), applying environmental criteria established by the U.S. Environmental Protection Agency (EPA) in the Ocean Dumping Regulations (40 CFR Parts 220–229).

Section 102(c) of the MPRSA and 40 CFR 228.4(e)(l) authorize the EPA to designate Ocean Dredged Material Disposal Sites (ODMDS) in accordance with requirements at 40 CFR 228.5 and 228.6. Section 103(b) of MPRSA requires that the USACE use dredged material sites designated by EPA to the maximum extent feasible. Where use of an EPA-designated site is not feasible, the USACE may, with concurrence of EPA, select an alternative site in accordance with MPRSA 103(b).

Section 228.3 of the Ocean Dumping Regulations established disposal site management responsibilities; however, the Water Resources Development Act of 1992 (WRDA 92; Public Law 102-580) included a number of amendments to the MPRSA specific to ODMDS management. Section 102(c) of MPRSA as amended by Section 506 of WRDA 92 provides that:

1. Site management plans shall be developed for each ODMDS designated pursuant to Section 102(c) of MPRSA.
2. After January 1, 1995, no ODMDS shall receive a final designation unless a Site Management Plan has been developed.
3. For ODMDSs that received a final designation prior to January 1, 1995, Site Management Plans shall be developed as expeditiously as practicable, but no later than January 1, 1997, giving priority to sites with the greatest potential impact on the environment.
4. Beginning on January 1, 1997, no permit or authorization for dumping shall be issued for a site unless it has received a final designation pursuant to Section 102(c) MPRSA or it is an alternate site selected by the USACE under Section 103(b) of MPRSA.

This Site Management Plan for the Sabine-Neches Waterway, Texas (SNWW) ODMDSs was developed jointly by EPA Region 6 and USACE, Galveston District (USACE-SWG). In accordance with Section 102(c)(3) of the MPRSA, as amended by WRDA 92, the plan includes the following:

1. A baseline assessment of conditions at the sites;

2. A program for monitoring the sites;
3. Special management conditions or practices to be implemented at the sites that are necessary for protection of the environment;
4. Consideration of the quantity of dredged material to be discharged at the sites, and the presence, nature, and bioavailability of the contaminants in the material;
5. Consideration of the anticipated use of the sites over the long term, including the anticipated closure date for the sites, if applicable, and any need for management of the sites after the closure; and
6. A schedule for review and revision of the plan.

II. SITE MANAGEMENT OBJECTIVES

The purpose of ODMDS management is to ensure that placement activities do not unreasonably degrade the marine environment or interfere with other beneficial uses (e.g., navigation) of the ocean. The specific objectives of management of the SNWW ODMDSs are as follows:

1. Ocean discharge of only that dredged material that satisfies the criteria set forth in 40 CFR Part 227 Subparts B, C, D, E, and G and Part 228.4(e) and is suitable for unrestricted placement at the ODMDS; and
2. Avoidance of excessive mounding, either within the site boundaries or in areas adjacent to the sites, as a direct result of placement operations.

These objectives will be achieved through the following measures:

1. Regulation and administration of ocean dumping permits;
2. Development and maintenance of a site monitoring program; and
3. Evaluation of permit compliance and monitoring results.

III. ROLES AND RESPONSIBILITIES

In accordance with Section 102(c) of the MPRSA and with the Regional Memorandum of Understanding (MOU) between USACE-SWG and EPA Region 6 on Management of ODMDSs signed August 13, 1993, EPA is responsible for designation of ODMDSs. Where use of an EPA-designated site is not feasible, the USACE-SWG may, with concurrence with EPA Region 6, select an alternative site in accordance with Section 103(b) of the MPRSA as amended by Section 506 of WRDA 92.

Development of Site Management Plans for ODMDSs within USACE-SWG's area of operation is the joint responsibility of EPA Region 6 and the USACE-SWG. Both agencies are responsible for assuring that all components of the Site Management Plans are implementable, practicable, and applicable to site management decision-making.

IV. FUNDING

Physical, chemical, and biological effects–based testing of dredged material prior to placement at the ODMDS shall be undertaken and funded by the Permittee, if the project is permitted, or USACE-SWG, for Federal projects. The permittee or USACE-SWG, as appropriate, shall also be responsible for costs associated with placement site hydrographic monitoring. Should monitoring indicate that additional studies and/or tests are needed at the ODMDSs, the cost for such work would be shared by the Permittee or USACE-SWG and EPA Region 6. Physical, chemical, and biological effects-based testing at the ODMDS, or in the site environs after discharge, which is not required as a result of hydrographic monitoring, shall be funded by EPA Region 6. Federal funding of all aspects of this Site Management Plan is contingent on availability of appropriated funds.

V. BASELINE ASSESSMENT

A. Site Characterization (Existing Maintenance ODMDSs)

Four ODMDSs have been designated for maintenance of the SNWW (Figure 1). Following is a brief description of each site.

ODMDS No. 1 is located approximately 16 nautical miles from shore, about 6,000 feet west of the Sabine Bank Channel. This site occupies an area of approximately 2.4 square nautical miles, with depths ranging from 36 to 43 feet. The site is triangular in shape, with vertices at the following coordinates:

29°28′03″N, 93°41′14″W

29°26′11″N, 93°41′14″W

29°26′11″N, 93°44′11″W

ODMDS No. 2 is located approximately 11.8 nautical miles from shore, about 6,000 feet southwest of the Sabine Bank Channel. This site occupies an area of approximately 4.2 square nautical miles, with depths ranging from 30 to 43 feet. The site is trapezoidal in shape, with vertices at the following coordinates:

29°30′41″N, 93°43′49″W

29°28′42″N, 93°41′33″W

29°28′42″N, 93°44′49″W

29°30′08″N, 93°46′27″W

ODMDS No. 3 is located approximately 6.8 nautical miles from shore, about 6,000 feet southwest of the Sabine Bank Channel. This site occupies an area of approximately 4.7 square nautical miles, with a depth of about 33 feet. The site is a pentagon, with vertices at the following coordinates:

29°34′24″N, 93°48′13″W

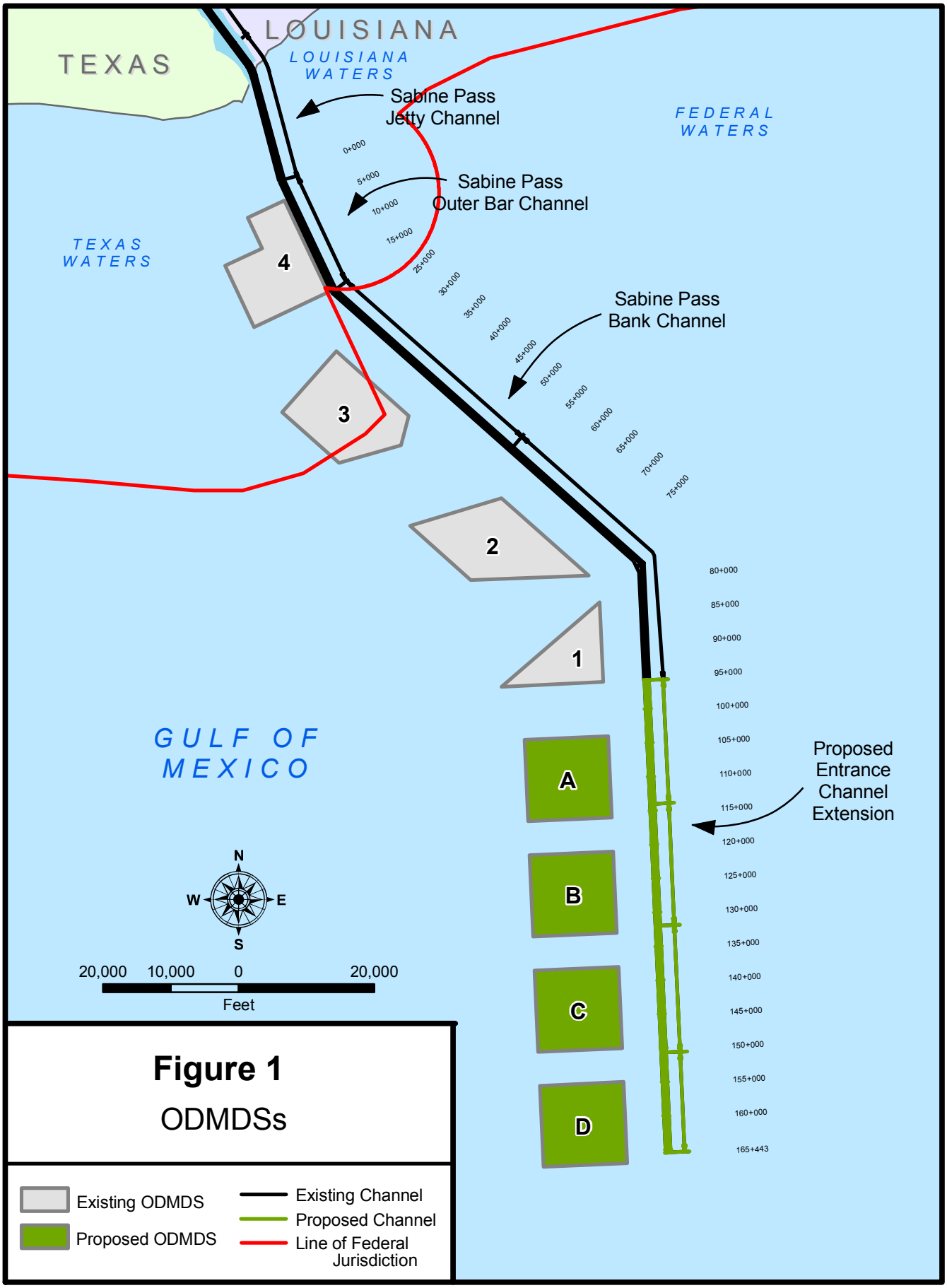


Figure 1

ODMDSs

N:441206/post_HU_projects/Projects/Original_Revised_Figure_Numbers/Figure_2_3_Vr2.mxd (A.P. 3/08/07)

29°32′47″N, 93°46′16″W

29°32′06″N, 93°46′29″W

29°31′42″N, 93°48′16″W

29°32′59″N, 93°49′48″W

ODMDS No. 4 is located approximately 2.7 nautical miles from shore, about 500 feet southwest of the Sabine Pass Outer Bar Channel. This site occupies an area of approximately 4.2 square nautical miles, with depths ranging from 16 to 30 feet. The site is L-shaped, with vertices at the following coordinates:

29°38′09″N, 93°49′23″W

29°35′53″N, 93°48′18″W

29°35′06″N, 93°50′24″W

29°36′37″N, 93°51′09″W

29°37′00″N, 93°50′06″W

29°37′46″N, 93°50′26″W

Two sediment reference areas have been established for this project. Reference Site 1 and 2 is located east of the Sabine Bank Channel with vertices at the following coordinates:

29°27′30″N, 93°37′00″W

29°27′30″N, 93°36′45″W

29°26′38″N, 93°36′45″W

29°26′38″N, 93°37′00″W

Reference Site 3 and 4 is located northeast of the Sabine Bank Channel with vertices at the following coordinates:

29°35′52″N, 93°41′45″W

29°35′52″N, 93°41′30″W

29°35′00″N, 93°41′30″W

29°35′00″N, 93°41′45″W

Baseline conditions at the SNWW Maintenance ODMDSs were assessed during the site designation process. Details of baseline conditions, including descriptions of the marine environment in the site vicinity and the physical, chemical and biological characteristics of the sediments and the water column at the site, are contained in the "Final Environmental Impact Statement (EIS) for the Sabine-Neches, Texas Dredged Material Disposal Site Designation" prepared by EPA, Criteria and Standards Division, in March 1983. An update of the general area of the existing ODMDSs is presented in PBS&J (2009).

B. Site Characterization (Proposed Extension Channel ODMDSs)

The proposed ODMDSs A–D are anticipated to receive both virgin material from project construction and future maintenance material from the Extension Channel (see Figure 1). They are located 21 to 30 miles offshore, with vertices at the following coordinates:

ODMDS A

29° 24′ 47″ N, 93° 43′ 29″ W

29° 24′ 47″ N, 93° 41′ 08″ W

29° 22′ 48″ N, 93° 41′ 09″ W

29° 22′ 49″ N, 93° 43′ 29″ W

ODMDS B

29° 21′ 59″ N, 93° 43′ 29″ W

29° 21′ 59″ N, 93° 41′ 08″ W

29° 20′ 00″ N, 93° 41′ 09″ W

29° 20′ 00″ N, 93° 43′ 29″ W

ODMDS C

29° 19′ 11″ N, 93° 43′ 29″ W

29° 19′ 11″ N, 93° 41′ 09″ W

29° 17′ 12″ N, 93° 41′ 09″ W

29° 17′ 12″ N, 93° 43′ 29″ W

ODMDS D

29° 16′ 22″ N, 93° 43′ 29″ W

29° 16′ 22″ N, 93° 41′ 10″ W

29° 14′ 24″ N, 93° 44′ 10″ W

29° 14′ 24″ N, 93° 43′ 29″ W

These ODMDSs occupy areas of approximately 5.3 square miles each with depths ranging from 44 to 46 feet. One sediment reference area is proposed for the proposed ODMDSs, since the ODMDS EIS found that the offshore area is very constant, both in depth and grain-size characteristics. Reference Site A–D is located east of the Extension Channel with vertices at the following coordinates:

29° 20′ 00″ N, 93° 37′ 00″ W

29° 20′ 00″ N, 93° 36′ 45″ W

29° 19′ 08″ N, 93° 36′ 45″ W

29° 19′ 08″ N, 93° 37′ 00″ W

Baseline conditions at the proposed ODMDSs A–D were assessed during the site designation process. Details of baseline conditions, including descriptions of the marine environment in the site vicinity and the physical, chemical, and biological characteristics of the sediments and the water column at the site, are contained in the ODMDS Site Designation EIS to which this Attachment is appended.

C. Historical Use of Sites

ODMDS Nos. 1, 2, 3, and 4 received final designation on September 10, 1987 (52 FR 175). The present configurations of these sites were established in 1971. They received interim designation in 1977 (42 FR 7), and were historically used for placement of dredged material throughout this period. A description of dredged volumes from 1960 through 1979 is contained within the designation EIS. Dredged quantities between 1979 and 2009 are depicted in Table 1.

TABLE 1

DREDGED QUANTITIES, 1979 TO 2009

Dredging Interval	Quantity of Dredged Material (cubic yards)
October 1– 4, 1979	58,080
March 19–May 30, 1981	3,589,486
April 27–May 20, 1982	1,693,264
July 24–August 7, 1983	200,000
July 22–September 30, 1984	5,835,135
June 13–September 7, 1985	5,353,000
May 12–July 13, 1986	5,626,837
July 11–September 21, 1987	3,972,320
September 4–October 16, 1988	3,002,319
April 5–July 20, 1991	5,251,477
August 22–October 21, 1991	5,566,950
September 11–November 7, 1992	2,363,981
December 10, 1993–January 10, 1994	1,911,311
August 12–September 12, 1994	1,337,096
September 1 –October 30, 1994	2,899,203
January 23–April 26, 1996	3,723,835
March 12–September 25, 1997	4,742,465
August 13–October 7, 1998	4,398,064
January 11–May 2, 2000	4,782,702
May 12–June 18, 2001	4,063,603
July 27 –August 13, 2002	2,877,918
August 6–September 27, 2003	3,544,956
December 17, 2004–January 8, 2005	2,922,465
July 28–August 26, 2006	1,524,203
December 28, 2007–April 24, 2008	2,646,462
2009	Maintenance Dredging-Ongoing
Total	83,887,132
Average	3,355,485

The material is dredged from the SNWW: Sabine Bank, Sabine Pass Outer Bar, and Sabine Pass Jetty channels, and transported to the ODMDS by hopper dredge or scow. The dredge, either a conventional bottom-opening hopper or a split-hulled hopper, travels from the dredging site with its doors closed. Upon reaching the designated ODMDS, the hoppers are opened and the material is released as the dredge travels through the site. The hoppers are closed before the dredge leaves the site. The disposal operations occur 24 hours a day, 7 days a week until the dredging is completed. Historically, dredged material release points were not specified; however, a 500-foot-wide no-discharge zone immediately inside the boundaries of each ODMDS was observed to prevent short-term transport of the material out of the sites.

D. Proposed ODMDSs

The proposed ODMDSs have not previously received any dredged material from the existing SNWW project.

VI. QUANTITY OF MATERIAL AND LEVEL OF CONTAMINATION

A. Summary of Information Used to Determine Size of the Site

Historically, the dredging frequency for this navigation project ranges from 1 year for the Outer Bar Channel to 5 years for the Jetty Channel, with an average of about 3,355,485 cubic yards (cy) of material excavated per dredging contract. The excavated channel sediments can be characterized as clayey-sandy-silts. Average particle-size distributions are described in Table 2.

TABLE 2

EXCAVATED CHANNEL SEDIMENT AVERAGE PARTICLE-SIZE DISTRIBUTION

Location	% Sand	% Silt	% Clay
Channel	14.6	45.8	39.6
ODMDS No. 1	95.3	2.3	2.4
ODMDS No. 2	60.0	24.3	15.8
ODMDS No. 3	49.4	28.6	22.1
ODMDS No. 4	9.1	45.8	45.1
Reference Area 1 and 2	48.8	35.4	15.9
Reference Area 3 and 4	49.1	33.5	17.4

As described in the site designation EIS, the existing interim designated ODMDSs were evaluated as an alternative for final designation, as were other mid-shelf and deepwater areas. Although no specific analyses were conducted to determine optimal size for each placement area, the existing sites were determined to be the preferred alternative for final designation. However, the sizes of the sites have been re-examined by the use of the MDFATE model from USACE Engineering Research and Design Center (ERDC) (PBS&J, 2009) to ensure the sites were large enough to handle the expected maintenance material from the SNWW Channel Improvement Project (CIP). Primary considerations in EPA (1983) for selecting these sites were as follows:

1. Benthic sampling data indicated that despite more than 20 years of disposal, no significant changes had occurred in the faunal communities as a result of disposal operations, and that future changes in the benthic community were not anticipated to occur from continued disposal into these sites.
2. The sites are situated in a high-energy erosional zone and can generally accept large volumes of dredged material with little apparent net change to the bottom.
3. The sites are within the inlet zone and are adjacent to the channel, providing easy access for dredged material placement operations and reduce costs.
4. Studies have shown that there are no unique fisheries in the area.
5. Regulations require that, wherever feasible, historically used sites be designated.

The irregular shapes of the areas are a result of their locations. ODMDS No. 1 is situated adjacent to the safety fairway and Sabine Bank, whereas ODMDS No. 2 is located between the intersection of two safety fairways, and Sabine Bank. Similarly, ODMDS No. 3 is located at the intersection of two safety fairways.

B. Summary of Testing Requirements per Regional Implementation Agreement and Summary of Past Dredged Material Evaluations

On September 24, 1992, a Regional Implementation Agreement (RIA) was executed between EPA Region 6, and SWG. The RIA was revised and updated, and a new RIA issued November 3, 2003. This RIA described protocols for evaluating the quality of the dredged material and implementation of the *Green Book* (EPA/USACE, 1991). These protocols describe chemical parameters to be analyzed, as well as required detection limits. It also specifies how toxicity testing and bioaccumulation assessments are to be conducted, as well as organisms to be utilized. Since that time, all sediment evaluations have been conducted in accordance with the RIA. Since the mid-1970s before development of the RIA, dredged material from the SNWW had been evaluated numerous times to determine suitability for offshore placement. This testing was performed to determine levels of metals and organic constituents, as well as toxicity and bioaccumulation assessments. Testing performed for this project is summarized in Table 3. The testing indicated that the material was suitable for offshore placement without special management conditions.

VII. ANTICIPATED SITE USE

As previously discussed, the dredging frequency for this project ranges from 1 to 5 years with an average of approximately 3,355,000 cy of material excavated per dredging contract. It is anticipated that, with the SNWW CIP, the existing maintenance ODMDSs would receive a total of 10.5 million cubic yards (mcy) of dredged material per maintenance cycle, and the proposed channel extension ODMDSs would receive a total of 3.0 mcy of dredged material per maintenance cycle. Presently, the ODMDSs are coordinated to receive dredged material from the federally maintained SNWW CIP. Material from other sources is not presently placed at these sites, and none is expected in the foreseeable future, except the construction material from the SNWW CIP.

TABLE 3

DREDGED MATERIALS TIMETABLE

Date	Type of Testing
February 22 and March 1, 1977	Pre-dredging Bulk Analyses
June 1978	Toxicity and Bioaccumulation Assessment
October 1978	Toxicity and Bioaccumulation Assessment
September 1979	Toxicity and Bioaccumulation Assessment
December 1, 1981	Pre-dredging Bulk Analyses
November 30, 1982	Pre-dredging Bulk Analyses
November 1983	Toxicity and Bioaccumulation Assessment
December 1983	Toxicity and Bioaccumulation Assessment
May 14, 1984	Pre-dredging Bulk Analyses
February 24, 1986	Pre-dredging Bulk Analyses
January 29, 1987	Pre-dredging Bulk Analyses
May 22, 1992	Pre-dredging Bulk Analyses
November 1993	Toxicity and Bioaccumulation Assessment
December 8, 1993	Pre-dredging Bulk Analyses
November 16, 1995	Pre-dredging Bulk Analyses
February 4, 1998	Pre-dredging Bulk Analyses
June 10, 1999	Toxicity and Bioaccumulation Assessment
July 12, 2004	Toxicity and Bioaccumulation Assessment

Currently, no beneficial use of the material dredged from the offshore segments of the SNWW is practiced. It is the policy of the USACE-SWG to implement beneficial uses of dredged material, wherever practicable. However, beneficial uses of the material from this project have not yet been identified.

VIII. SPECIAL MANAGEMENT CONDITIONS OR PRACTICES

Currently, no special management conditions or practices related to placement of dredged material into the designated ODMDSs have been required. As previously discussed, evaluations of sediment quality have indicated that the material from the channel is suitable for offshore placement without such requirements. However, all operations shall be conducted such that the dredged material remains within the bounds of the ODMDS immediately following descent to the ocean floor.

A seasonal restriction has been recommended by the National Marine Fisheries Service (NMFS), during formal consultation undertaken pursuant to the Endangered Species Act (NMFS, 2007). This restriction was based on potential impacts of hopper dredging operations on several species of threatened and endangered sea turtles. The recommendation is to restrict hopper dredging to the period from December 1 through March 31, during which turtle abundance is at a minimum. This recommendation pertains, however, only to actual dredging operations, and not placement of the material into the ODMDSs. While it may not be practical to observe this restriction for all dredging cycles, it will be practiced when feasible.

IX. MONITORING PROGRAM

The primary purpose of the Site Monitoring Program is to evaluate the impact of the placement of dredged material on the marine environment. The evaluations will be used for making decisions, preventing unacceptable adverse effects beyond the site boundary, and ensuring regulatory compliance over the life of the ODMDS. Emphasis will be placed on determining physical impacts since, to date, dredged material from the SNWW has been determined to be acceptable for ocean placement without special conditions; however, consideration of contaminants will also be included. Testing of dredged material is conducted based on *Green Book* and RIA procedures; however, it is necessary to verify that the decisions made regarding the suitability of the dredged material are correct and that the material is not having an adverse impact to the environment. In the event that the material persists in the ODMDS, there may be potential for long-term contaminant effects on the benthos.

The size and location of the SNWW ODMDSs were determined pursuant to the General Criteria as listed in 40 CFR 228.5 and the Specific Criteria at 40 CFR 228.6(a). There are no significant environmental resources delineated within or immediately outside of the designated ODMDSs. Since these sites are dispersive in nature, the primary concern of the use of the sites is the potential short-term build-up of dredged material, such that a hazard to navigation is presented. Another concern is whether there is significant short-term movement of the dredged material beyond the ODMDS boundaries; specifically, the benthic community can be impacted if significant rapid movement of material off the sites occurs, resulting in burial of benthic populations outside the sites. Studies have shown that benthic organisms can burrow through 6 to 9 inches of dredged material without significant impacts on the community (EPA/USACE, 1996).

The Site Monitoring Program is designed as a tiered program. If initial tier results fail predetermined limits, then a more complex set of tests is invoked at the next tier to determine the extent of impact. The tiers are used to facilitate rapid, accurate, and economical collection of information for use by the EPA Region 6, and the USACE-SWG. The tiered testing for these factors is described below.

A. Construction Material

While the literature on maintenance material disposal on the Gulf Coast indicates only minor short-term and negligible long-term mounding from placement activities, little information is available for virgin material ODMDSs. Mounding from the construction material, while acceptable, is higher and of firmer material than is true for the maintenance material. Additionally, construction placement is expected to last for only a period of 2 years or less, and more-frequent monitoring would be expected than would be necessary for the periodic but short-term placement that occurs with maintenance dredging. The following monitoring and surveillance program is proposed for the SNWW CIP ODMDSs during construction. The monitoring is discussed in detail below. ODMDS 1 and ODMDS C are the existing and proposed ODMDSs, respectively, expected to receive the most construction material and are selected as worst cases for the monitoring described below.

A major consideration in the acceptability of the size of the ODMDSs was the location of the dredge when each discharge occurs. To prevent excessive mounding, it is necessary that a method be utilized to record the location of each discharge to ensure that the dredge distributes material uniformly over the ODMDS, while it avoids approaching the edges of the ODMDS too closely. The following is the scheme used in the modeling to avoid excessive mounding and dispersal of material outside the ODMDS: two discharges at all exterior placement points (one should a larger dredge be used), followed by one discharge at each of the interior placement points in a given sequence until each has been utilized (figures 2a and 2b, ODMDS C and ODMDS 1, respectively). Continue repeating the sequence with one discharge at each interior placement point until construction is complete.

Tier CI

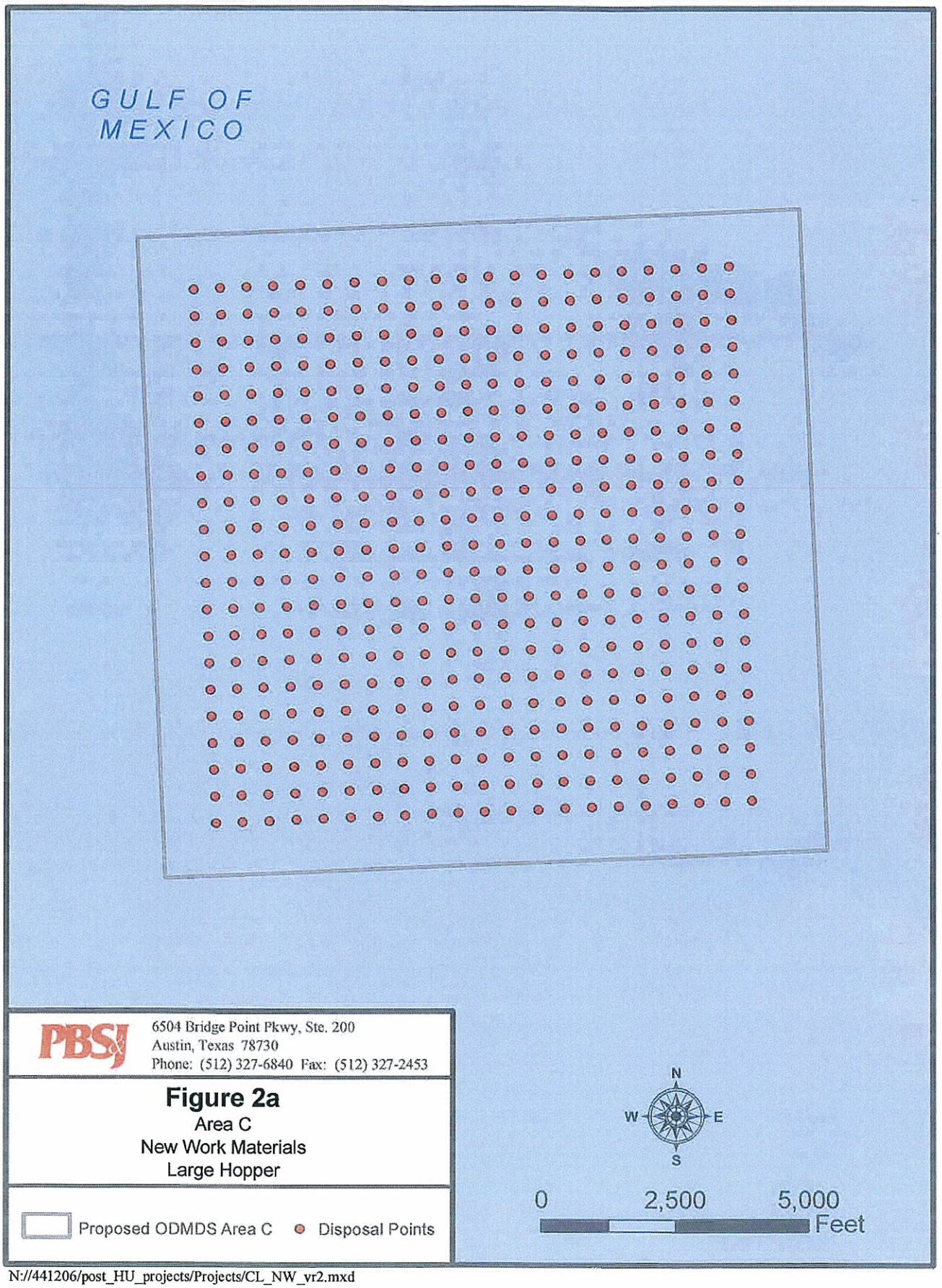
Bathymetric Surveys

Routine bathymetric scans shall be conducted for the ODMDSs to determine that there is no excessive mounding, e.g., to elevations greater than 10 feet above the existing bottom elevation (unless an alternate height is determined in agreement between the EPA and USACE on a case-by-case basis), and that there is no short-term transport of material beyond the limits of the ODMDS. Therefore, an accumulation of 1 foot of sedimentation along the ODMDS boundary will be considered the threshold level for movement of material outside of the designated ODMDSs. These determinations will be based on a comparison of the results with predisposal surveys.

Bathymetric surveys shall be obtained before the start of disposal operations and monthly thereafter until operations are complete. Additional surveys shall then be performed after 6 months and 1 year.

Hydrographic surveys shall be conducted along transects within the ODMDSs. These transects shall be oriented perpendicular to the channel in the direction of sediment transport (i.e., southwest). Transect intervals shall be every 1,000 feet extending 1,000 feet outside each boundary. In addition, a depth profile shall be obtained along the boundary.

Surveys shall be obtained using a USACE or contract survey vessel equipped with electronic surveying capabilities. The vessel must be equipped with positioning equipment with a horizontal precision of 1 foot. The fathometer, which shall display real-time depth on real-time location, must have a precision of 0.5 foot. All data shall be collected using methodology described in Engineer Manual (EM) 1110-2-1003, dated January 1, 2002.



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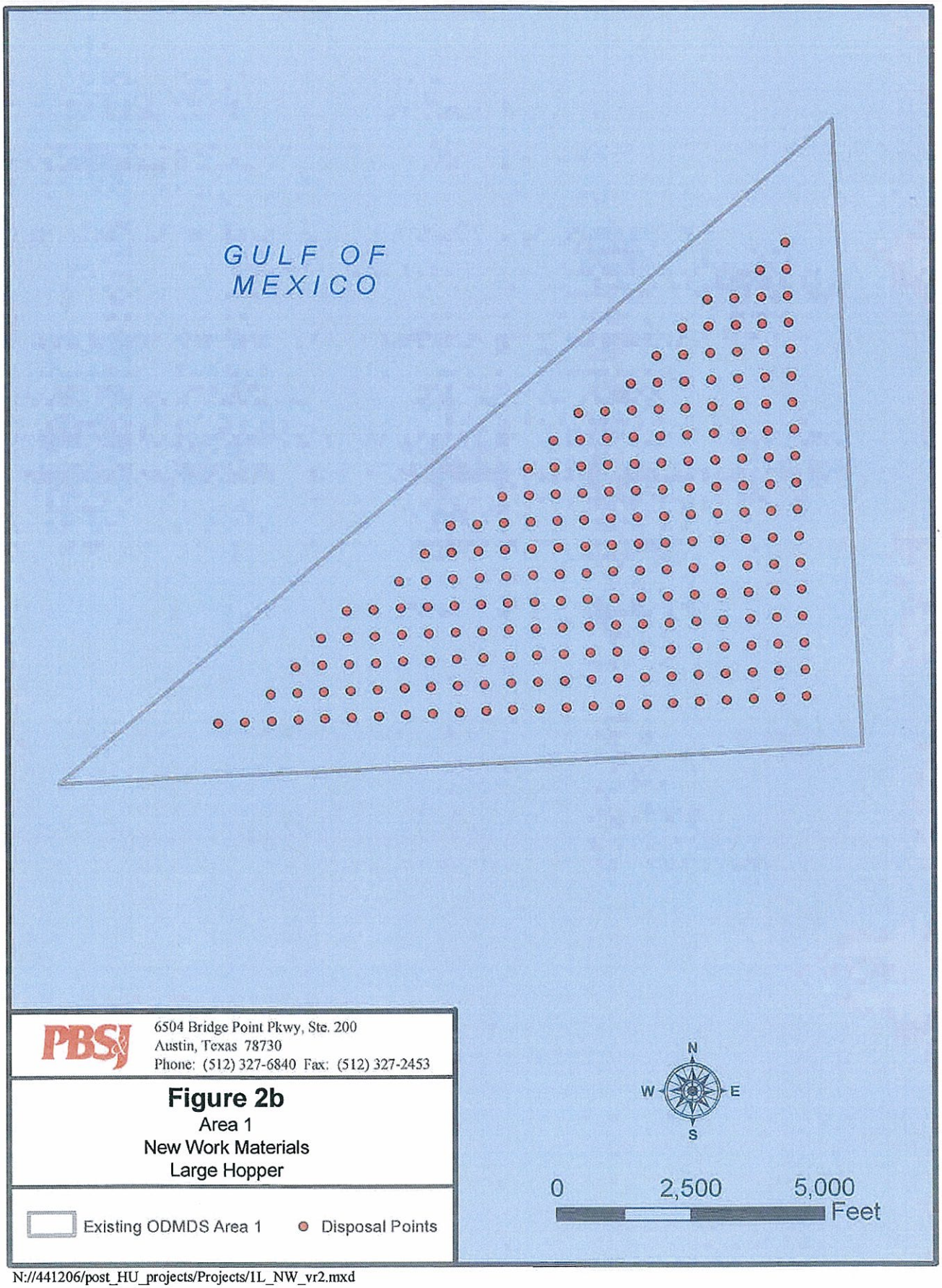

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Data Analysis

If the surveys indicate deposited dredged material is not mounding to elevations greater than the threshold elevation above the existing bottom elevation, and there is no short-term movement of material beyond the limits of the ODMDS, then the management objectives are being met. Further monitoring shall be conducted as scheduled.

If the monthly surveys indicate movement of material outside of the designated limits, then the disposal operation will be reviewed to determine whether the disposal sequence is being properly followed. The disposal sequence shall be adjusted as necessary to compensate for the movement.

If the after-disposal surveys indicate mounding to elevations greater than the threshold elevation and/or movement of material out of the ODMDS has occurred, then the monitoring program shall proceed to Tier C2.

Sediment Chemistry

Monitoring stations, which consist of a control station, stations located immediately outside the ODMDS, and stations located some distance downcurrent from the site should be sampled for the items noted in the following paragraph to determine whether impacts are occurring outside of the ODMDS. Monitoring stations will entail two stations on each side of the ODMDS, roughly 300 feet from the ODMDS edges, a control site located upcurrent of the ODMDS, and two stations located 10,000 feet downcurrent (southwest) of the downcurrent edge of the ODMDS. This program is duplicated for ODMDS 1 and C (Figure 3). One additional monitoring site is added on the northwest side of ODMDS 1 to accommodate the irregular shape. Substrate elevation should also be determined at each sampling station during each sampling event.

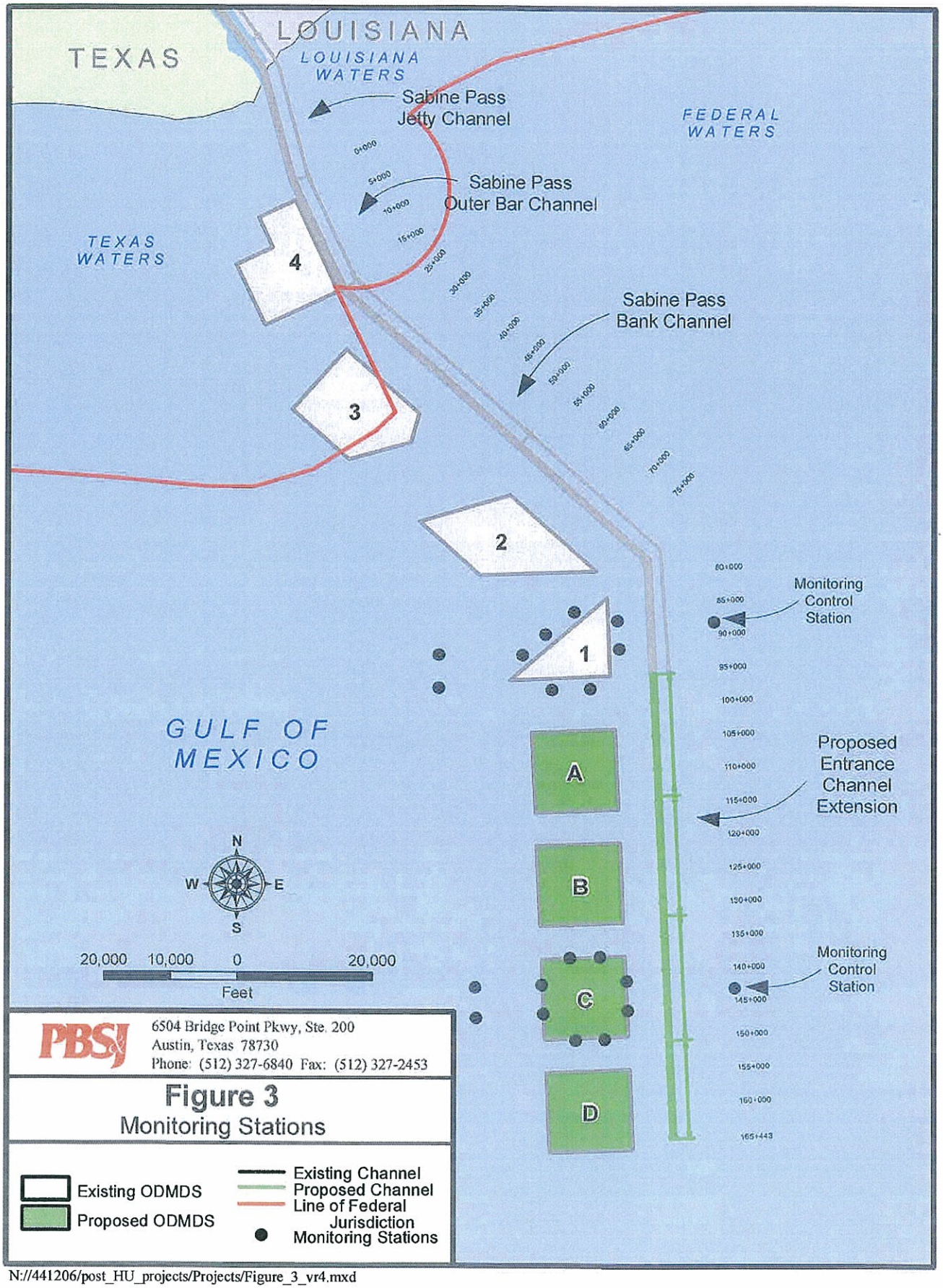
These stations shall be sampled before and at the completion of disposal operations. Postdisposal sampling shall occur 6 months and 1 year after the cessation of discharge of virgin material at the site. Samples shall be collected for (1) grain-size analysis, and (2) chemical characterization of sediments.

Data Analysis

If contaminant concentrations are not significantly different from before-disposal data, then the management objectives are being met. Further monitoring shall be conducted as scheduled.

- If significant increases in levels of contaminants are observed but bathymetric monitoring indicates that there is no short-term transport of material beyond the limits of the ODMDS, as determined in Bathymetric Surveys Tier C1, then this is an indication that the increase is not a result of dredged material placement. Further monitoring shall be conducted as scheduled.

  If significant increases in levels of contaminants are observed and bathymetric monitoring indicates that there is short-term transport of material beyond the limits of the ODMDS, as determined in Bathymetric Surveys Tier C1, then a determination will be made whether a



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bioassay/bioaccumulation study is warranted to determine effects to the benthic community. The studies are described below as Biological Testing under Tier C2.

Benthos

Monitoring stations, which consist of a control station, stations located immediately outside the ODMDS, and stations located some distance downcurrent from the site should be sampled for the items noted in the following paragraph to determine whether impacts are occurring outside of the ODMDS. Monitoring stations will entail two stations on each side of the ODMDS, roughly 300 feet from the ODMDS edges (stations B1 through B8), a control site located upcurrent of the ODMDS, and two stations located 10,000 feet downcurrent (southwest) of the downcurrent edge of the ODMDS. These should be the same stations used for sediment chemistry (see Figure 3). Substrate elevation should also be determined at each sampling station during each sampling event.

These stations shall be sampled before and at the completion of disposal operations. Postdisposal sampling shall occur 6 months and 1 year after the cessation of discharge of virgin material at the site. Samples shall be collected for macrobenthic invertebrates (in triplicate). Macrobenthic community structure during each sampling event shall be compared to the control sample to eliminate effects of potential seasonal variation. Significant changes are defined as statistically significant differences in community structure or population density.

Data Analysis

If macrobenthic community structure is not significantly different than the control, then the management objectives are being met. Further monitoring shall be conducted as scheduled.

If significant changes are observed, then further analysis shall be conducted under Tier C2.

Tier C2

Bathymetric Surveys

If deposited dredged material mounds to elevations above the threshold value, then monitoring shall continue as scheduled and could possibly be extended. A Notice to Mariners shall be posted as appropriate.

If transport of material from the site is occurring, hydrographic surveys shall be expanded to include the impacted areas to determine the changes in dispersion of the material. An accumulation of more than 1 foot of sedimentation along the ODMDS boundary will be considered the threshold level for significant movement of material outside of the designated ODMDS.

Data Analysis

During Dredging:

If deposited dredged material is mounding to elevations above the threshold value but less than 15 feet above the existing bottom elevation, and there is no significant short-term transport of material beyond the limits of the ODMDS, then monitoring shall continue as scheduled. A Notice to Mariners shall be issued as appropriate.

If deposited dredged material is mounding to elevations greater than 15 feet above the existing bottom elevation, and there is no significant short-term transport of material beyond the limits of the ODMDS, then bathymetric monitoring shall continue as scheduled. A Notice to Mariners shall be posted as appropriate. If mounding is considered to be excessive, alterations to the placement operations may be warranted.

If significant movement of material out of the ODMDS is occurring, bathymetric monitoring shall be expanded to include the impacted areas to determine the changes in dispersion of the material. Following completion of disposal operations, surveys shall continue on a quarterly basis for 1 year or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring. Findings shall be documented for future reference.

After Dredging:

If deposited dredged material has mounded to elevations above the threshold value but less than 15 feet above the existing bottom elevation, and there is no significant short-term transport of material beyond the limits of the ODMDS, then bathymetric monitoring shall continue at predetermined 6-month intervals for 1 year or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring. Findings shall be documented for future reference, and a Notice to Mariners shall be issued as appropriate.

If deposited dredged material is mounding to elevations greater than 15 feet above the existing bottom elevation, and there is no significant short-term transport of material beyond the limits of the ODMDS, then bathymetric monitoring shall continue at predetermined 6-month intervals for 1 year or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring. Findings shall be documented for future reference, and a Notice to Mariners shall be issued as appropriate.

If significant movement of material out of the ODMDS has occurred, bathymetric monitoring shall be expanded to include the impacted areas to determine the changes in dispersion of the material and shall continue on a quarterly basis for a 1-year period or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring. Findings shall be documented for future reference.

Sediment Chemistry

If the results of the Tier C1 sediment chemistry evaluation suggest the need for additional testing, then solid-phase bioassay and bioaccumulation testing shall be conducted in accordance with the procedures described in the RIA. If the sediment can be attributable to recent dredging, funding for testing under this Tier will be provided by USACE-SWG or the Permittee, as appropriate; otherwise funding will be provided by EPA, Region 6. Any such testing is contingent on availability of appropriated funds.

Data Analysis

If significant toxicity is not found, testing shall continue as described in Tier C1. However, subsequent sampling shall continue on a quarterly basis for the 1-year period following completion of disposal operations or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring. Findings shall be documented for future reference.

If significant toxicity is found, the USACE-SWG together with EPA Region 6 will consider various management options to rectify the situation. Because the ODMDS is a dispersive site, potential sources of toxicity other than dredged material must also be considered. A decision must also be made whether to allow continued use of this site. Findings shall be documented for future reference.

Benthos

A significant change in community structure or population density may be an indication that the substrate has changed. This could be a result of natural redistribution of sediments or the dredged material may be moving beyond the ODMDS at a faster rate than anticipated. A change in community structure could also indicate that toxicity has occurred. Monitoring the macrobenthic community shall continue on a quarterly basis until 1 year following completion of discharge operations has elapsed or until agreement is reached between the EPA and USACE-SWG to discontinue monitoring.

Data Analysis

If significant changes are observed but bathymetric monitoring indicates that there is no short-term transport of material beyond the limits of the ODMDS, as determined in Bathymetric Surveys Tier C1, then this is an indication that the changes are not a result of dredged material placement. Further monitoring shall be conducted as scheduled.

If significant changes are observed and bathymetric monitoring indicates that there is short-term transport of material beyond the limits of the ODMDS, as determined in Bathymetric Surveys Tier C1, then this is an indication that the changes may be a result of dredged material placement. Further monitoring shall be conducted as scheduled.

- If significant changes are observed 1 year following completion of disposal operations, then the monitoring shall continue on a quarterly basis for 1 additional year. If significant changes are

observed after the second year, further monitoring plans will be developed based on the degree of impact.

If significant changes are observed and there is an indication that the sediments are toxic, as determined in Sediment Chemistry Tier C2, then this is an indication that the changes may be a result of dredged material placement. Further monitoring shall be conducted as scheduled.

- If significant changes are observed 1 year following completion of disposal operations, then the monitoring shall continue on a quarterly basis for 1 additional year. If significant changes are observed after the second year, further monitoring plans will be developed based on the degree of impact.

B. Maintenance Material

Tier MI

Physical and chemical evaluations of the ODMDS material shall be conducted to characterize possible effects from the placement of dredged material occurring at the site(s). Physical analyses of the sediment can assist in assessing the impact of disposal practices on the benthic environment at the disposal site and determine if dredged material is migrating offsite. Chemical analyses of the sediment shall be conducted to establish whether contaminants of concern are suspected to be affecting the benthic environment at the disposal site(s).

Bathymetric Surveys

The ODMDSs are located outside of the safety fairway for large vessel traffic; therefore, the mounding will be considered in regard to shallow-draft vessels only. Considering the grain-size characteristics of typical maintenance dredged material from this channel, significant mounding is not expected subsequent to discharge operations. The threshold elevation for mounding of dredged material within the ODMDS will be 10 feet, or other mutually agreed-upon elevation, above the existing bottom elevation.

Since the sites are dispersive, movement of material from the sites is expected to occur after disposal operations cease. In order to detect if short-term movement of the material out of the designated ODMDS is occurring at a significant rate, hydrographic surveys of the ODMDS shall be obtained before the start of disposal operations and soon after completion of disposal operations. An accumulation of 1 foot of sedimentation along the ODMDS boundary will be considered the threshold level for movement of material outside of the designated ODMDS. This determination shall be based on a comparison of the results of these before and after surveys.

Hydrographic surveys shall be conducted along transects within the ODMDS. These transects shall be oriented perpendicular to the channel in the direction of sediment transport (i.e., southwest). Transect intervals shall be every 1,000 feet extending 1,000 feet outside each boundary. In addition a depth profile shall be obtained along the boundary.

Surveys shall be obtained using a USACE or contract survey vessel equipped with electronic surveying capabilities. The vessel must be equipped with positioning equipment with a horizontal precision of 1 foot. The fathometer, which shall display real-time depth on real-time location, must have a precision of 0.5 foot. All data shall be collected using methodology described in EM 1110-2-1003, dated January 1, 2002.

Data Analysis

If deposited dredged material is not mounding to elevations greater than the threshold elevation above the existing bottom elevation, and there is no short-term movement of material beyond the limits of the ODMDS, then the management objectives are met. No further postdisposal monitoring will be required.

If mounding to elevations greater than the threshold elevation and/or movement of material out of the ODMDS has occurred, as determined by the postdredging survey, then the monitoring program shall proceed to Tier M2.

Sediment Chemistry

Sediment chemistry analyses shall be conducted in conjunction with the dredged material evaluations from samples collected in the navigation channel. Collecting samples from both the navigation channel and ODMDS during the same sampling event has been determined to be the most efficient use of resources. Because most ODMDSs lie directly adjacent to the navigation channels, there are relatively short distances between the two areas. As described in the RIA, sediment testing in the navigation channels generally occurs on a 5-year cycle. Sediment chemistry results from the ODMDSs should be compared to the results collected from the navigation channel. Significantly elevated sediment concentrations are defined as concentrations above the range of contaminant levels in dredged sediments that the Regional Administrator and the District Engineer found to be suitable for disposal at the ODMDS.

Data Analysis

If contaminant concentrations are not significantly different than navigation channel concentrations, then no further testing is needed.

If significant increases in levels of contaminants are observed at the ODMDS, then a determination will be made whether a bioassay/bioaccumulation study is warranted to determine effects to the benthic community. The studies are described below as Biological Testing under Tier M2.

Tier M2

Bathymetric Surveys

If transport of material from the sites is occurring, hydrographic surveys shall be expanded to include the impacted areas and shall be performed on a semiannual basis to determine the changes in dispersion of the material until the impacts are no longer observed. An accumulation of more than 1 foot of sedimentation along the ODMDS boundary will be considered the threshold level for significant movement of material outside of the designated ODMDS.

Data Analysis

If deposited dredged material is mounding to elevations above the threshold value, but less than 15 feet above the existing bottom elevation, and there is no significant short-term transport of material beyond the limits of the ODMDS, then semiannual postdisposal monitoring shall occur as described.

If at 6 months after disposal, deposited dredged material remains mounded to elevations greater than half the postdisposal elevations, then bathymetric surveys shall be continued.

If deposited dredged material is mounding to elevations greater than 15 feet and/or significant movement of material out of the ODMDS has occurred, the Galveston District, together with EPA Region 6, will consider various management options to rectify the situation. Such options could include, but are not limited to, expansion of the ODMDS or relocation of the ODMDS within the zone of siting feasibility described in the designation EIS.

Biological Testing

If the results of the Tier M1 sediment chemistry evaluation suggest the need for additional testing, then solid-phase bioassay and bioaccumulation testing shall be conducted in accordance with the procedures described in the RIA. If the sediment can be attributable to recent dredging, funding for testing under this Tier will be provided by USACE-SWG or the permittee, as appropriate; otherwise funding will be provided by EPA, Region 6. Any such testing is contingent on availability of appropriated funds.

Data Analysis

If toxicity is not indicated, then no further testing is needed, and disposal activities can continue at the ODMDS.

If toxicity is indicated at the ODMDS, the Galveston District, together with EPA Region 6, will consider various management options to rectify the situation. Because the ODMDS is a dispersive site, potential sources of toxicity other than dredged material must also be considered. If planned use of the ODMDS is imminent, a decision must also be made whether to allow continued use of this site.

X. SITE MANAGEMENT PLAN REVIEW AND REVISION

Pursuant to Section 102(c) of the MPRSA, as amended by WRDA 92, the Site Management Plan for the SNWW ODMDSs will be reviewed and revised, if necessary, not less frequently than 10 years after adoption and every 10 years, thereafter.

Modifications or updates to the Site Management Plan may be necessary, based on specific needs identified for specific authorized projects. Modifications or updates to the Site Management Plan may be proposed by the USACE-SWG or EPA Region 6. Following a 30-day review period of the changes(s), the modifications may be incorporated into the plan by mutual consent of both agencies.

XI. REFERENCES

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This Site Management and Monitoring Plan complies with Section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 USC Sections 1401, et seq.) as amended by Section 506 of the Water Resources Development Act of 1992 (WRDA 92; Public Law 102-580) and has been approved by the following officials of Region 6 of the U.S. Environmental Protection Agency, and Galveston District of the U.S. Army Corps of Engineers. This plan goes into effect upon the date of the last signature:

5/7/10

Al Armendariz
Regional Administrator
Region 6
U.S. Environmental Protection Agency

Date

29 APRIL 2010

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

Date