Sabine Pass to Galveston Bay, Texas
Coastal Storm Risk Management and Ecosystem Restoration
Final Integrated Feasibility Report and Environmental Impact Study

APPENDIX F

PUBLIC COORDINATION

May 2017

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Sabine Pass to Galveston Bay, Texas
Coastal Storm Risk Reduction and Ecosystem Restoration
Final Integrated Feasibility Report-Environmental Impact Statement
Public Scoping and Comment Summary

1. Public Involvement Activities

Extensive public scoping, stakeholder communication, and resource agency coordination were maintained throughout development of the Recommended Plan. Four scoping meetings were held in early 2012, which resulted in the identification of over 250 ideas addressing Coastal Storm Risk Reduction (CSRM) problems and Ecosystem Restoration (ER) opportunities in the six-county study area. The February 6, 2012, invitation to participate in meetings held in Beaumont, Seabrook, Galveston and Freeport, Texas, was published on the USACE-Galveston District website and sent to an extensive mail list (Attachment 1).

Two stakeholder briefings were held in the spring of 2014 that focused primarily on communicating the goals and progress of the study with local governments and agencies. Continuous contact has been maintained with outside organizations that have been working to address the same problems as those addressed by this study. In particular, close communication has been maintained with the team at Texas A&M Galveston, which has been working to develop the Ike Dike proposal, the Severe Storm Prediction, Education and Evacuation from Disasters Center (a consortium of several universities headquartered at Rice University in Houston), which has been assessing a number of other CSRM, ER, and recreation initiatives for the Galveston Bay region, and the Gulf Coast Community Protection and Restoration District, which is preparing a report evaluating CSRM opportunities in the six-county study area.

2. Summary of Notice of Intent Comments

USACE published the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in the Federal Register on November 24, 2014. Written comments were accepted for a 30-day period following that notice. In total, about 20 written comments were received following the public meetings and NOI. The NOI and comments are presented in Attachments 2 and 3, respectively. Comments made at the public meetings and in the written comments are summarized below.

The majority of the original public and agency comments received pertained to the Galveston Bay Region and to ER opportunities in general. The Audubon Society expressed concerns regarding

Colonial Waterbird rookeries and piping plover critical habitat areas. Several rookery and critical habitat areas are within the project area, which provide nesting and feeding habitat, and are currently subject to erosion from storm damage, ship traffic and sand mining activities. The Port of Houston Authority (PHA) advised that solutions will need to reflect industry participation or sponsorship of projects, considering that public and private interests coexist along the coast. The feasibility of structural solutions on the Houston Ship Channel (HSC) need to be considered prior to implementation, as most of the current transportation systems that serve the HSC cannot appropriately accommodate proposed flood control structures without causing a disruption in the transportation of commerce. The City of Galveston and the general public also expressed interest in public and private partnerships, which can reduce the financial burden on taxpayers. The City of Galveston recommended that a sediment management plan be considered that encourages beneficial use of dredge materials for public and private projects such as beach preservation, beach nourishment, and establishment of a natural sand dune defense system. Local citizens and municipalities would also like to see conservation and enhancement of wetlands, in combination with responsible development, to prevent and mitigate impacts from severe weather and flood damage, specifically on Bolivar Peninsula and west end of Galveston Island. Multiple comments referenced flood control projects, greenspace, and conservation areas as practicable and effective examples.

In the Sabine region, Orange County expressed strong support for an evaluation of surge protection for that county, including protection for Chemical Row and the Entergy Power Plant. USACE was urged to evaluate levee and surge gate alternatives, and to utilize the Orange County Study, which evaluated several potential alternatives. Industrial facilities and the general public emphasized the need to protect petro-chemical facilities in the area, one of which is the largest refinery in the U.S. The general public was also concerned about maintaining or improving evacuation routes during storm emergencies. Jefferson County and Ducks Unlimited supported shoreline erosion control for the GIWW; this would prevent the loss of interior marshes that serve as storm buffers for inland communities. Comments from resource agencies focused on the need for marsh restoration on the lower Neches River and marshes near Sabine Pass, and dune and shoreline restoration of the Jefferson county shoreline, again as a means for buffering surge impacts. GIWW erosion, marsh, dune, and shoreline restoration will be addressed as part of the new USACE Jefferson County ER Feasibility Study being conducted in conjunction with Jefferson County and the Sabine-Neches Navigation District.

In the Brazoria region, the local sponsor of the Freeport Hurricane Flood Protection Project (HFPP) supported evaluation of storm surge impacts on the existing system. This would strengthen existing protection of the dense petrochemical and residential development within the Freeport HFPP. Maintaining or improving evacuation routes were important to local citizens. Local interest groups and the general public expressed concern with maintaining a tidal connection with

the Gulf at the San Bernard River, and the effect of altered circulation created by the GIWW intersection with the Brazos River Diversion Channel. Local citizens also expressed concern regarding the effect of the Brazos River Diversion Channel on sediment delivery to the Surfside area. Beach restoration in the Surfside area would protect nearby residences and help attenuate storm surge. Resource agencies recommended restoration of Follets Island, a barrier peninsula, as a means of buffering storm surge impacts on the Freeport mainland. Tidal circulation, sediment supply, and beach and marsh restoration will be addressed as part of the ongoing USACE Coastal Texas CSRM and ER Feasibility study, in conjunction with the Texas GLO

The Sierra Club provided comprehensive comments, which applied to the six-county study area. In general, they urged restoring natural coastal shoreline system features and urged restraint in the construction of structural systems that would encourage more development. They supported structural measures that are limited in size and focused on vulnerable, developed areas, and recommended targeted buyouts rather than structural alternatives in areas such as Surfside in the Brazoria Region. They urged working with nature and natural processes, as well as protecting shoreline features that provide natural erosion protection.

3. Comments on the DIFR-EIS

The DIFR-EIS was released for public review and comment on September 11, 2015. The Notice of Availability is Attachment 4. All comments were due on October 26, 2015. Public meetings on the DIFR-EIS were held on October 6 and 8, 2015, in Beaumont and Freeport, Texas, respectively. The meetings were announced on the USACE S2G webpage and in Orange, Port Arthur and Freeport newspapers. Transcripts of these meetings and all comments received during the public comment period and USACE responses are provided in Attachments 5 and 6, respectively. The comments are summarized below.

Summary of Public Comments

Comments were received from one city, two local governmental agencies, three companies, the Houston Sierra Club, and seven individuals from Bridge City and Freeport. Several individuals and one company asked for close-up maps, which were added to the Galveston District website during the public comment period. While supportive of the project, individuals and companies expressed concerns over impacts to their properties or operations during construction, or maintaining access through the structures after construction. The City of Port Neches asked that the Orange-Jefferson CSRM Plan be revised to exclude city recreational properties along the Neches River waterfront from the risk reduction plan. Port Freeport identified concerns with how the Freeport and Vicinity CSRM Plan design would impact one of their docks. Badische Anilin-

& Sodafabrik (BASF) expressed concerns that the construction and operation of the Dow Barge Canal gate would interrupt their daily operations. The Velasco Drainage District (VDD) and the Sierra Club provided the most extensive comments, which are summarized below.

The VDD suggested that SWG revisit and improve our public notification process. Written notices were sent but not received by some entities; press releases were made but the local press did not respond. The VDD does not concur with USACE's requirement for steady state seepage evaluation and risk assessment of the levees in their system. They maintain that there is insufficient time during a coastal storm to reach a steady state sufficient to cause breeching. Other comments requested clarification for specific sections of the DIFR-EIS, additional information on specific engineering methodologies, and further explanation of specific plan recommendations.

The Sierra Club objected to our denial of their request for a time extension of the public comment period. The comment period opened on 11 Sep 2015 and their request for the extension was made on 21 Sep 2015. We denied their request at that time, but advised that we would reevaluate the need for an extension as the comment period progressed. No other public requests for an extension were received and the comment period was not formally extended. The Sierra Club also expressed concern that the final recommended plan and mitigation were not presented in the DIFR-EIS, and in general, requested that much more information and analyses be presented. Sierra Club comments requested further clarification on numerous topics that were covered in detail in the appendices, such as the programmatic overview of the six counties, unintended consequence, hydrologic impacts of the new levee system and surge gates, historic property impacts, the economic analysis, and the WVA ecological modeling. The comments requested additional explanation regarding screening of structural and non-structural alternatives, cumulative impacts, O&M, and relative sea-level rise.

PART I

SCOPING COMMENTS

ATTACHMENT 1
SCOPING WORKSHOP ANNOUNCEMENT

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

February 6, 2012

INVITATION TO PARTICIPATE IN PUBLIC WORKSHOP AND NEPA SCOPING MEETING FOR

IDENTIFICATION OF STORM DAMAGE REDUCTION, ECOSYSTEM RESTORATION, AND FLOOD RISK MANAGEMENT OPPORTUNITIES IN ORANGE, JEFFERSON, CHAMBERS, HARRIS, GALVESTON, BRAZORIA COUNTIES

The U.S. Army Corps of Engineers, Galveston District and the Texas General Land Office along with their Regional County partners, are seeking individuals, groups or organizations interested in participating in public workshops for the purpose of gathering ideas for hurricane / tropical storm damage reduction, ecosystem restoration, and flood risk management opportunities in Orange, Jefferson, Chambers, Galveston, Harris, and Brazoria Counties. This outreach effort is being conducted in conjunction with the Sabine Pass to Galveston Bay, Texas Study. The meeting will also serve as a scoping meeting for the purposes of identifying significant issues to be addressed in accordance with requirements of the National Environmental Policy Act (NEPA).

The workshops will take place at the following locations:

February 28, 6:30 to 8:30 PM - Seabrook Community House, 1210 Anders Ave, Seabrook, TX

February 29, 6:30 to 8:30 PM - Jefferson County Agri-Life Auditorium, 1225 Pearl Street, Beaumont, TX (Enter on Franklin St., north side of bldg.)

March 6, 6:30 to 8:30 PM - Freeport Riverplace, 420 N. Brazosport Blvd., Freeport, TX

March 7, 6:30 to 8:30 PM - Galveston County Courthouse, 722 Moody Ave., Galveston, TX

If you would like to receive information or submit comments please notify us in writing at: SabinePassToGalvestonBay@usace.army.mil or at the following address:

U.S. ARMY ENGINEER DISTRICT, GALVESTON
ATTENTION: Sabine Pass to Galveston Bay, TX, Study
CESWG-PE-PL
P.O. BOX 1229
GALVESTON, TEXAS 77553-1229

For additional information please visit the project website at:
http://www.swg.usace.army.mil/sabinepasstogalvestonbay/

ATTACHMENT 2
NOTICE OF INTENT TO FILE AN EIS

to the location listed (see **ADDRESSES**). In order to be considered, each application must include:

1. The name of the applicant and the primary stakeholder interest category that person is qualified to represent;

2. A written statement describing the applicant's area of expertise and why the applicant believes he or she should be appointed to represent that area of expertise on the MRRIC;

3. A written statement describing how the applicant's participation as a Stakeholder Representative will fulfill the roles and responsibilities of MRRIC;

4. A written description of the applicant's past experience(s) working collaboratively with a group of individuals representing varied interests towards achieving a mutual goal, and the outcome of the effort(s);

5. A written description of the communication network that the applicant plans to use to inform his or her constituents and to gather their feedback, and

6. A written endorsement letter from an organization, local government body, or formal constituency, which demonstrates that the applicant represents an interest group(s) in the Missouri River basin.

To be considered, the application must be complete and received by the close of business on December 29, 2014, at the location indicated (see **ADDRESSES**). Applications must include an endorsement letter to be considered complete. Full consideration will be given to all complete applications received by the specified due date.

Application Review Process. Committee stakeholder applications will be forwarded to the current members of the MRRIC. The MRRIC will provide membership recommendations to the Corps as described in Attachment A of the *Process for Filling MRRIC Stakeholder Vacancies* document (*www.MRRIC.org*). The Corps is responsible for appointing stakeholder members. The Corps will consider applications using the following criteria:

- Ability to commit the time required.
- Commitment to make a good faith (as defined in the Charter) effort to seek balanced solutions that address multiple interests and concerns.
- Agreement to support and adhere to the approved MRRIC Charter and Operating Procedures.
- Demonstration of a formal designation or endorsement by an organization, local government, or constituency as its preferred representative.
- Demonstration of an established communication network to keep constituents informed and efficiently seek their input when needed.
- Agreement to participate in collaboration training as a condition of membership.

All applicants will be notified in writing as to the final decision about their application.

Certification. I hereby certify that the establishment of the MRRIC is necessary and in the public interest in connection with the performance of duties imposed on the Corps by the Endangered Species Act and other statutes.

Dated: November 13, 2014.

Brad Thompson,

Chief of Planning, Omaha District.

[FR Doc. 2014–27718 Filed 11–21–14; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare a Draft Environmental Impact Statement for the Sabine Pass to Galveston Bay, TX, Coastal Storm Risk Management and Ecosystem Restoration Feasibility Study

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of Intent.

SUMMARY: The Sabine Pass to Galveston Bay, Texas, study area encompasses six coastal counties on the upper Texas Gulf coast—Orange, Jefferson, Chambers, Harris, Galveston and Brazoria. The Draft Integrated Feasibility Report and Environmental Impact Statement (DIFR–EIS) will evaluate structural and non-structural alternatives which address coastal storm risk management (CSRM) and ecosystem restoration (ER) impacts in the study area. The environmental impact study will focus on environmental and social conditions currently present and those likely to be affected by potential future impacts of storm surge and ecosystem restoration opportunities. Several major historical surge events have occurred in the study area in the past 120 years. The most notable is perhaps the 1900 Storm, which inundated most of the island city of Galveston, TX, and adjacent areas on the mainland. The storm was responsible for over eight thousand deaths and up to $30 million in property damage. Hurricane Rita in 2005 resulted in storm surge of 9.2 feet in Port Arthur, TX, and just over 8 feet in Sabine Pass. Most recently, Hurricane Ike in 2008 produced storm surges of 14 feet near Sabine Pass and 11 to 12 feet across Sabine Lake. The City of Port Arthur was spared from the impacts of storm surge thanks to its existing 14- to 17-foot hurricane flood protection system. However, the remaining southern half of Jefferson County was inundated, with estimated high water marks reaching 18 to19 feet to the south and east of High Island. The City of Galveston was protected from Hurricane Ike's high energy surge impacts by the Galveston Seawall, but much of the City of Galveston was later flooded by about 6 to 10 feet of surge coming from the bay. The City of Texas City was protected from Ike's surge impacts by its existing hurricane flood protection system. At risk within the study area are approximately 2.26 million people living within the storm-surge inundation zone, three of the nine largest oil refineries in the world, 40 percent of the nation's petrochemical industry, 25 percent of the nation's petroleum-refining capacity, and three of the ten largest U.S. seaports.

DATES: Comments on proposed DIFR–EIS will be accepted through December 24, 2014.

ADDRESSES: U.S. Army Corps of Engineers, Galveston District, P.O. Box 1229, Galveston, TX 77553–1229. Emails may be sent to *Janelle.S.Stokes@usace.army.mil.*

FOR FURTHER INFORMATION CONTACT: Ms. Sheridan Willey, (409) 766–3917, Planning Lead, Plan Formulation Section, Regional Planning and Environmental Center; or Ms. Janelle Stokes, (409) 766–3039, Environmental Lead, NEPA/Cultural Resources Section, Regional Planning and Environmental Center.

SUPPLEMENTARY INFORMATION:

(1) *Background.* In 2011, the Corps of Engineers and non-Federal sponsor, the Texas General Land Office, agreed to rescope an earlier study to evaluate plans to develop CSRM and ER features over the entire six-county region covering the upper Texas coast. The study is authorized under Section 4091, Water Resources Development Act of 2007 Public Law 110–114.

(2) *Alternatives.* Structural alternatives that will be evaluated are: (1) A new surge protection system in Orange and Jefferson Counties, including small, navigable surge gates on Cow and Adams Bayous; (2) a large navigable surge gate in the Neches River near the Rainbow Bridge; and (3) reevaluation of the existing Port Arthur and Freeport Hurricane Flood Protection Systems. Non-structural measures such as targeted buy-outs, will also be evaluated. Structural and non-structural alternatives to address storm

surge impacts in the Galveston Bay system, as well as ER measures throughout the six-county study area will be evaluated programmatically, with recommendations being made for future detailed analyses of feasible alternatives.

(3) *Scoping.* In February and March of 2012, four scoping meetings were held in the cities of Beaumont, Seabrook, Galveston and Freeport, TX. The scoping process involved Federal, State and local agencies, Federally-recognized Indian tribes, and other interested persons and organizations. Comments were received for 30 days following each scoping meeting. A total of 285 ideas were collected and these were collated and screened into a detailed list of structural and non-structural CSRM and ER measures that are being considered during this study. At this time, there are no plans for an additional scoping meeting. However, input from affected Federal, state and local agencies, affected Indian tribes, and other interested private organizations and parties is being solicited with this notice.

(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, and the Coastal Zone Management Act under the Texas Coastal Management Program.

(5) *DIFR–EIS Preparation.* It is estimated that the DIFR–EIS will be available to the public for review and comment in August, 2015.

Brenda S. Bowen,

Army Federal Register Liaison Officer.

[FR Doc. 2014–27723 Filed 11–21–14; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF ENERGY

Commission To Review the Effectiveness of the National Energy Laboratories

AGENCY: Department of Energy.

ACTION: Notice of open meeting.

SUMMARY: This notice announces an open meeting of the Commission to Review the Effectiveness of the National Energy Laboratories (Commission). The Commission was created pursuant section 319 of the Consolidated Appropriations Act, 2014, Public Law 113–76, and in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. App. 2. This notice is provided in accordance with the Act.

DATES: Monday, December 15, 2014, 10:00 a.m.–3:30 p.m.

ADDRESSES: Institute for Defense Analyses, 4850 Mark Center Drive, Room 1301, Alexandria, VA 22311.

FOR FURTHER INFORMATION CONTACT: Karen Gibson, Designated Federal Officer, U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585; telephone (202) 586–3787; email *crenel@hq.doe.gov*.

SUPPLEMENTARY INFORMATION:

Background: The Commission was established to provide advice to the Secretary on the Department's national laboratories. The Commission will review the DOE national laboratories for alignment with the Department's strategic priorities, clear and balanced missions, unique capabilities to meet current energy and national security challenges, appropriate size to meet the Department's energy and national security missions, and support of other Federal agencies. The Commission will also look for opportunities to more effectively and efficiently use the capabilities of the national laboratories and review the use of laboratory directed research and development (LDRD) to meet the Department's science, energy, and national security goals.

Purpose of the Meeting: This meeting is the fourth meeting of the Commission.

Tentative Agenda: The meeting will start at 10:00 a.m. on December 15. The tentative meeting agenda includes discussion on how the DOE Labs impact the national science and technology enterprise and further discussions on their relationship with industry. Key presenters will address and discuss these topics with comments from the public. The meeting will conclude at 3:30 p.m. The agenda will be posted when finalized and in advance of the meeting on the Lab Commission Web site: (*http://energy.gov/labcommission/commission-review-effectiveness-national-energy-laboratories*).

Public Participation: The meeting is open to the public. Individuals who would like to attend must RSVP to Karen Gibson no later than 5:00 p.m. on Wednesday, December 10, 2014 at email *crenel@hq.doe.gov*. Please provide your name, organization, citizenship, and contact information. Anyone attending the meeting will be required to present government issued identification. Individuals and representatives of organizations who would like to offer comments and suggestions may do so at the end of the meeting. Approximately 30 minutes will be reserved for public comments. Time allotted per speaker will depend on the number who wish to speak but will not exceed 5 minutes. The Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Those wishing to speak should register to do so beginning at 10:00 a.m. on December 15.

Those not able to attend the meeting or who have insufficient time to address the committee are invited to send a written statement to Karen Gibson, U.S. Department of Energy, 1000 Independence Avenue SW., Washington DC 20585, or to email: *crenel@hq.doe.gov*.

Minutes: The minutes of the meeting will be available on the Commission Web site at: *http://energy.gov/labcommission*.

Issued in Washington, DC, on November 18, 2014.

LaTanya R. Butler,

Deputy Committee Management Officer.

[FR Doc. 2014–27742 Filed 11–21–14; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9919–53–OAR]

California State Nonroad Engine Pollution Control Standards; Diesel Engines on Commercial Harbor Craft; Request for Within-the-Scope and Full Authorization; Opportunity for Public Hearing and Comment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The California Air Resources Board (CARB) has notified the Environmental Protection Agency (EPA) that it has adopted amendments to its Commercial Harbor Craft regulation (CHC amendments). By letter dated May 28, 2014, CARB asked that EPA authorize these amendments pursuant to section 209(e) of the Clean Air Act (CAA or Act). CARB seeks confirmation that certain of the amendments are within the scope of a prior authorization issued by EPA, and that certain of the amendments require and merit a full authorization. This notice announces that EPA has tentatively scheduled a public hearing to consider California's request for authorization of the CHC amendments, and that EPA is now

ATTACHMENT 3
COMMENTS RECEIVED DURING NOI COMMENT PERIOD

Audubon TEXAS

901 S. Mopac, Bldg 2, #410
Austin, TX 78746
Tel: 512-306-0225
Fax: 512-306-0235
www.audubon.org
ipena@audubon.org

March 16, 2012

Colonel Christopher W. Sallese
District Engineer, Galveston District
U.S. Army Corps of Engineers
CESWG-PE-PL
P.O. Box 1229
Galveston, TX 77553-1229

RE: Sabine Pass to Galveston Bay, TX Study

Dear Colonel Sallese:

The eastern coast of Texas is vital habitat for a number of bird species, both resident and migratory. Audubon Texas has a long history of coastal stewardship and avian research in the region and would like to act as one of the regional contacts during the re-scoping effort stakeholder meetings.

Audubon owns, leases, and manages several islands within the proposed study area. These islands are critical to nesting colonial waterbirds including egrets, herons, spoonbills, skimmers, gulls and terns. Many of our islands are shrinking due to erosion caused by storm damage, subsidence and local ship traffic thus reducing the amount of available habitat for these and other waterbird species. We would be very interested in working with the USACE to find a solution to the degradation of several islands we oversee in West, East, and Galveston Bay as well as the Smith Point area. We would also like to avoid the problems of the past. A previous USACE project on Smith Point Island was completed but ineffective due to poor project oversight and miscommunication by contractors.

We are also very interested in the potential sand mining for beach nourishment from the west end of Galveston Island and dredging of San Luis Pass. The west end of Galveston Island supports a rich variety of habitat for both wintering and breeding shorebirds. The flats to the northeast of San Luis Pass offer foraging habitat for a number of herons, egrets, and gull species, as well as the endangered piping plover. Many of these birds depend on foraging areas on the Texas coast to replenish their fat reserves during migrations from wintering areas in South America to breeding habitat in Canada and the Artic. If major dredging work in San Luis Pass alters the hydrology and sediment behavior of these flats, many species would lose a vital patch of habitat. Wintering piping plover are also using the beaches along the southwestern coast of Galveston Island for foraging and need to be considered during any beach nourishment or armoring that may occur in these areas.

Please feel free to contact Iliana Pena, Director of Conservation or Bob Benson, Executive Director for Audubon Texas for additional information.

Sincerely,

Iliana A. Peña
Director of Conservation
Audubon Texas

From:	Leslie Barras
To:	Stokes, Janelle S SWG
Subject:	[EXTERNAL] DEIS for the Sabine Pass to Galveston Bay, TX, Coastal Storm Risk Management and Ecosystem Restoration Feasibility Study
Date:	Saturday, November 22, 2014 6:36:49 PM

Dear Ms. Stokes:

Please include me in the email list regarding the DEIS and FEIS for the above-referenced study. I understand, from Monday's Federal Register notice, that the DEIS may be issued in Aug. 2015.

Also, I am interested in the Section 106 consultation on the proposed undertaking and major federal action. When would you anticipate beginning the process of involving consulting parties?

Thank you,
Ms. Leslie Barras
912 W. Cypress Avenue
Orange, TX 7630

PUBLIC WORKSHOP
AND NEPA SCOPING MEETING FOR
IDENTIFICATION OF
STORM DAMAGE REDUCTION, ECOSYSTEM RESTORATION,
AND FLOOD RISK MANAGEMENT OPPORTUNITIES
IN
ORANGE, JEFFERSON, CHAMBERS, HARRIS,
GALVESTON, BRAZORIA COUNTIES

Comment Form

This form is provided for your comments regarding the U. S. Army Corps of Engineers, Galveston District Sabine Pass to Galveston Bay, Texas Study Project. Please use the space below, attaching additional pages if necessary. The form may be deposited in the comment box, mailed to the address provided below, or emailed to SabinePassToGalvestonBay@usace.army.mil. Future information will be posted to our website. http://www.swg.usace.army.mil/sabinepasstogalvestonbay/

We appreciate your interest in and contributions towards this project.

Comments:

Thank you for the opportunity to comment on this issue.

We've lived on Robinson Bayou for 25 years. We see wonderful wildlife and destructive flooding. I believe that conservation and enhancement of wetlands combined with responsible development and drainage can mitigate the effects of severe storms on those of us in inland tidal areas. We get slammed doubly:

- by storm surge pushing "upstream"
- by runoff pushing "downstream" (in surge-swollen bayous). We have seen larger waterways become dikes that block the flow of smaller ones.

My suggestions:

a) Conservation- I support your interest in protecting estuaries. I would like you to also consider parkways. They are narrow parks along waterways that are prone to flooding. They accommodate flood waters, support wildlife, and are popular with the public. They may have trails, recreation facilities, gardens, fish hatcheries, etc. Sometimes the land is donated by utilities. Maintenance may be supported by community groups.

b) Development- Neighborhoods, private and public buildings, sports fields, roads-- they are all on high ground that was not there 100 years ago. The volume and speed of runoff is more than waterways can hold. Some communities are trying to slow the volume of runoff but we also need some wider/deeper spots in the waterways that will slow the velocity of the water.

Comments due by March 16, 2012 to:

District Engineer, Galveston District
U.S. Army Corps of Engineers
Attn: Sabine Pass to Galveston Bay, TX Study
CESWG-PE-PL
P.O. Box 1229
Galveston, Texas 77553-1229

Please Print:

Your Name Kathleen Barth
Your Company/Org.
Address 2211 Bayou Drive
League City, TX 77573
email: Katy.Barth@hotmail.com

From: Boyers, Amy [mailto:Amy.Boyers@h-gac.com]
Sent: Wednesday, March 14, 2012 1:38 PM
To: SabinePassToGalvestonBay
Subject: Comments on the Sabine Pass to Galveston Bay Project

Thanks to the USACE and GLO for taking on the Sabine Pass to Galveston Bay Project. We appreciate the opportunity to provide comments. H-GAC urges the USACE and GLO to fully explore all structural and non-structural options and also to determine an equitable cost-benefit analysis for coastal wetlands and barrier island dune systems (non-structural) to include not only environmental benefits but also economic benefits.

Thank you,

Amy

Amy Boyers

Resiliency Coordinator

From: Michael W. Kovacs [mailto:KovacsMic@cityofgalveston.org]
Sent: Friday, March 16, 2012 8:26 AM
To: SabinePassToGalvestonBay
Cc: Kelly De Schaun
Subject: Comments on Galveston Area Study Project

Thank you for the opportunity to comment on the Corps of Engineer's study of the Storm Damage Reduction, ecosystem restoration, and flood risk management opportunities for the upper Texas coast. I would encourage the scoping plan to focus on more detailed reviews of the following:

Top Priority:

Comprehensive sediment management plan that encourages partnerships on the beneficial use of dredge materials wherever possible, and the maintenance of not only inlets and harbors, which is done very well as part of the current mission, but also including mitigating impacts of those activities and existing hard structures (jetties for example) by planning to address beach preservation, periodic beach nourishment, and a natural dune defensive system. A plan that acknowledges the responsibility of federal, state, and local governments in the management of passes, beaches, and dunes and seeks to form partnerships for addressing the missing pieces of natural beach and dune protection of shorelines on Galveston Island is critical.

Secondary Priorities:

Surge protection plan reviews of costs/benefits of concepts including a ring levee on the back of Galveston Island and the Ike Dike are of significant interest to our citizens and businesses.

Thanks again. Good luck in your endeavors to improve the upper Texas Coast. We are interested in being a major partner with you.

Michael W. Kovacs

City Manager

City of Galveston

From: Garrett Dolan [mailto:garrettdolan@earthlink.net]
Sent: Saturday, March 03, 2012 2:01 PM
To: SabinePassToGalvestonBay
Cc: bedient@rice.edu
Subject: Comments for the Sabine to Galveston Bay

Dear USACE/GLO.

Please find below my comments regarding the Sabine Pass to Galveston Bay, Texas re-scoping process that will result in a new Feasibility Cost Sharing Agreement.

Most of my comments are targeted at how and why decisions should be made for protecting the coast. There are two articles attached that will provide insight into my comments. I offer them as resources to help the management team. Thank you.

Recommendations:

• Understand the true natural process at work

Approach any analysis with the understanding that coastlines are dynamic environments that are in a constant state of flux. Further, coastal erosion, floods, hurricanes, etc…. are natural processes that have occurred for thousands of years and will continue to occur into the next century. Public health problems and property destruction occur when humans try to impose their will over these natural processes. Sustainability requires human involvement and interventions that align with nature's natural process.

• Make decisions based on science

The upper Texas coast is geologically, meteorologically, and hydrologically in a dynamic state of flux. All four of the major natural processes shaping the coast—subsidence, sediment supply and transport, global sea level rise, and tropical cyclones—are pro¬jected to continue transforming the shore¬line. Structural mitigation efforts that try to prevent these natural processes from occurring are a sure-fire way to create an extremely expensive program dependent upon constant infusions of taxpayer money. Further, it has been scientifically proven that structural mitigation efforts can in fact, speed up the change process. Please read the attached article "A Foundation for Developing a Coastal Sustainability Program in the Houston-Galveston Region" for a short synopsis the natural processes shaping the coast.

• Correct public policy "moral hazards" before any infrastructure is built

Along the Upper Texas coast, public policy intended to protect and make life more viable is actually creating "moral hazards" and escalating the financial burdens on government. There are several public policies at the local, state and federal levels of government that are working at cross purposes by allowing risky investment decisions that put people's livelihoods in jeopardy. If not addressed first, these policies will negate any benefit added by USACE mitigation efforts. The attached article "Policy and management hazards along the Upper Texas coast" explains the hazards in detail.

• Only use tax payer money to protect structures of national interest and security

The use of taxpayer money for the development of mitigation interventions should be exclusively reserved for those projects that are of national interest (i.e. Houston Ship Channel). Using federal money to protect the lifestyles of a very small minority of people is inequitable, unsustainable and ultimately, increases the number of people vulnerable to the adverse consequences of severe storms.

• Create a hierarchy of coastal protection measures
Conduct an analysis of coastal protection measures that prioritizes the prevention, reduction and hardening options available. Prevention measures are those actions that remove people and their structures from potential harm (i.e. buyouts). Reduction measures are those actions and public policies that seek to minimize the scope and scale of harm (i.e. changing National Flood Insurance Program). Finally, hardening, are capital improvement projects that seek to defend against harm (i.e. levee).

- Leverage financial resources of the project by financially supporting the modeling and impact analyses already underway by the SSPEED Center.

Thank you.

Garrett Dolan, Ph.D.
2106 Amber Glen Lane
Katy, TX 77494
281-395-2158
garrettdolan@earthlink.net

From: Nick Fratila [mailto:nfratila@brazoriainet.com]
Sent: Sunday, March 11, 2012 9:13 PM
To: SabinePassToGalvestonBay
Cc: ttaylor@computer.org; 'Mike Goodson'; linda@yellowstoneboat.com; 'Marie Breakiron'
Subject: San Bernard River

I attended the March 6 public COE/GLO meeting in Freeport as the co-chairman of the River Mouth Committee of the Friends of the River San Bernard non-profit organization.

For a long term solution for the San Bernard River water flow, I had suggested building a jetty at the mouth. Today, I received a very interesting photo of the intersection of the river and the Intracoastal Waterway (ICW) taken this month. Due to a strong current from Brazos River, the San Bernard flow looks like it is going into the ICW moving toward Sargent. Taking a good look at this intersection, doesn't it show that this is happening because some of the land is extending too far into the river? Wouldn’t this cause another problem in the water flow to the mouth? I am not sure who is the owner of that land, but a correction of the river banks may improve the river flow to the Gulf. I attached also a photo with my suggested correction of the river banks.

Best Regards,

Nick Fratila, P.E.
1126 County Road 432
Brazoria, TX 77422
(979) 964-4549
(409) 284-7862 Cell
nfratila@brazoriainet.com <mailto:nfratila@brazoriainet.com>

PUBLIC WORKSHOP
AND NEPA SCOPING MEETING FOR
IDENTIFICATION OF
STORM DAMAGE REDUCTION, ECOSYSTEM RESTORATION,
AND FLOOD RISK MANAGEMENT OPPORTUNITIES
IN
ORANGE, JEFFERSON, CHAMBERS, HARRIS,
GALVESTON, BRAZORIA COUNTIES

Comment Form

This form is provided for your comments regarding the U. S. Army Corps of Engineers, Galveston District Sabine Pass to Galveston Bay, Texas Study Project. Please use the space below, attaching additional pages if necessary. The form may be deposited in the comment box, mailed to the address provided below, or emailed to SabinePassToGalvestonBay@usace.army.mil. Future information will be posted to our website. http://www.swg.usace.army.mil/sabinepasstogalvestonbay/

We appreciate your interesting and contributions towards this project.

Comments:

Thank you for coming to Beaumont and taking our input.

We believe the construction of rock breakwaters along the Gulf Intracoastal Waterway in Jefferson County should have a high priority, since it is an economical solution to day-to-day silting, as well as storm surge erosion of the banks, which threatens precious wetlands and marsh ecosystems.

Hurricane Ike caused 30 feet of erosion along the banks of the G.I.W.W., which could have been prevented by rock breakwaters.

Included herein are aerial photographs taken to 1-ft resolution by the Jefferson County Appraisal District before and after Hurricane Ike. These photographs prove the effectiveness of these breakwaters, which not only prevent erosion, but encourage ground and vegetation buildup between the breakwaters and the shoreline. These breakwaters cost $130 per linear foot.

Such severe erosion has occurred along the G.I.W.W. in Jefferson County, that the placement of these breakwaters in no way restricts navigation. Construction of the rock breakwaters is easily permitted through the COE's regulatory branch.

Examples and details of the breakwaters are included herein.

Comments due by March 16, 2012 to:

District Engineer, Galveston District
U.S. Army Corps of Engineers
Attn: Sabine Pass to Galveston Bay, TX Study
CESWG-PE-PL
P.O. Box 1229
Galveston, Texas 77553-1229

Please Print:

Your Name **Doug S. Canant, P.E., R.P.L.S., C.F.M.**
Your Company/Org. **Jefferson County Drainage District No. 6**
Address **6550 Walden Road**
Beaumont, Texas 77707
email: **dscanant@dd6.org**

The following six aerial photographs illustrate the erosion of the shoreline along the Gulf Intracoastal Waterway, primarily during Hurricane Ike.

Hurricane Ike occurred in September of 2008, and included record breaking storm surge levels covering the coast in Jefferson County and 22 miles inland. The storm surge reached elevation 21' above sea level near the coast. Most of the ground along the G.I.W.W. in Jefferson County is at elevation 5' above sea level or lower.

Aerial photos were taken to a 1-ft resolution in 2006 and in 2009. We traced the shoreline in three locations on the 2006 aerials. One of these locations had rock breakwater in place during Hurricane Ike. We then superimposed the shoreline on the 2009 aerial to show the amount of shore that was lost in each instance. The areas with no breakwater protection in place during the hurricanes showed significant shoreline erosion; that is 12 to 30 feet. The areas with rock breakwater in place showed no erosion, and actually showed a gain of ground between the shoreline and the breakwater, as well as signification vegetation growth.

From: William Kiene [mailto:william.kiene@noaa.gov]
Sent: Tuesday, April 09, 2013 4:40 PM
To: SabinePassToGalvestonBay
Subject: Status of Sabine Pass to Galveston Bay Study

As someone who participated in the public workshops regarding this study, I am wondering what has happened to this effort by the ACOE to study the options for protecting the region from storm-surge flooding. I strongly believe that all options should be investigated to ensure that an effective, affordable and practical solution is found. The only option that seems to so far be under investigation (not by the ACOE) is the Ike Dike proposal. Has the ACOE study been completed or was it terminated?

Regards,

William E. Kiene, Ph.D.
NOAA's Office of National Marine Sanctuaries
Southeast, Gulf of Mexico and Caribbean Region
4700 Avenue U, Building 216
Galveston, Texas 77551
Tel: (409) 621-5151 x109
Fax: (409) 621-1316
Mobile: (409) 550-6214

William.Kiene@noaa.gov

Statement for Delivery
At Corps of Engineers Scoping Meeting
March 6, 2012

My name is Craig Sherlock and I am representing LaBelle General, Inc, LaBelle Properties LLC and the Broussard family. We own approximately 6,000 acres, consisting primarily of wetlands, in the Salt Bayou Basin in southern Jefferson County near Sabine Pass.

During recent years, we have become aware of the conversion of a substantial surface acreage of our property to open water as a result of substrate erosion, subsidence, mortality of native vegetation, increases in water salinity, and acceleration of beach erosion. The loss of surface acreage is ongoing.

We believe that these proximate causes are associated with or result from a number of government-implemented actions which collectively resulted in the conversion of at least the lower portion of the Salt Bayou Basin from a historic freshwater wetland to a much more saline condition. These actions include, but may not be limited to the construction of the Gulf Intracoastal Waterway, the Sabine Pass Jetty, and the Keith Lake Fish Pass.

Construction of the Intracoastal Waterway isolated the existing Salt Bayou drainage basin from approximately 60 percent of its historic freshwater watershed, and served as a source for introduction of more saline water to the Salt Bayou basin. The construction of the Sabine Jetty system interrupted longshore flow of materials which historically nourished the beaches west of Sabine Pass, contributing to the erosion of the beach ridge and increasing the frequency of salt water overwash from the Gulf of Mexico into the middle portion of the Salt Bayou Basin. The construction of the Keith Lake Fish Pass has resulted in a dramatic increase in tidal exchange between the Salt Bayou Basin and the Sabine Neches Waterway.

Collectively, these projects have decreased the amount of freshwater entering the Salt Bayou Basin, increased tidal exchange, introduced large volumes of saline water, and caused mortality of freshwater wetlands vegetation and erosion of surface features. The resulting conditions effectively result in the change in the character of and loss of surface features on our property, diminishing and ultimately depriving us of the beneficial use of our property and effectively taking our land. Additionally, the conversion of emergent wetlands to open water compromises the ability of the wetlands in the Salt Bayou Basin to attenuate storm surge, increasing the likelihood of flooding in residential and industrial areas lying to the north.

We understand that the Corps of Engineers has developed a plan to mitigate these adverse impacts on the Salt Bayou basin. The plan reportedly includes beach renourishment to attenuate breaching of the beach ridge by high-tides and storm events in the Gulf, reduction in the capacity of the Fish Pass to deliver saline water

to the system, and reconnection of the system to that portion of the portion of the watershed lying north of the Intracoastal Waterway through construction of a system of inverted siphons. Collectively, these actions would minimize the ongoing taking of our land and its beneficial use, restore the Salt Bayou Basin to a less saline condition, restore a measure of the Salt Bayou Basin's traditional ecological function, improve wildlife habitat and improve the capacity of the Salt Bayou wetlands to attenuate storm surge damage to residential and industrial lands lying to the north.

We respectfully request your priority implementation of these measures. Thank you for your consideration.

Sincerely,

Craig J. Sherlock

From: Susan [mailto:dolphints@erfw.net]
Sent: Tuesday, March 06, 2012 3:15 PM
To: SabinePassToGalvestonBay
Subject: Freeport Meeting Tonight - Question

Thank you for hosting these type of events. I did not know these informational events occurred until last night and just received the letter of announcement which indicates questions may be submitted. I plan to attend this evening and hope I am not too late to ask a question?

Background: There is a 500 acre tract of land located along County Road (CR) 792, just off of FM 523 near the City of Oyster Creek. The property is not located in the jurisdiction of any municipality but is under Brazoria County's jurisdiction. This tract of land backs up to the Brazoria National Wildlife Refuge. There is over 300 acres of wetland on this property. It is my understanding the the owner intends to elevate 22 acres 16 feet above natural grade, and construct a retention pond of 22 acres with elevated berms/sides. I also understand that 80 acres will be used for equipment and supplies. The 16 foot change in natural grade appears like it would have a significant impact on the lands natural drainage not only to the refuge but the remaining wetlands acreage. Question: What impact will a Hurricane Ike type storm surge have not only to the wetlands but to the surrounding properties in your knowledgeable opinion?

Thank you for your time.

Susan Luycx
1557 Blue Water Drive
Freeport, Texas 77541

From: McAlister, Gay [mailto:gmcalist@mail.smu.edu]
Sent: Wednesday, February 29, 2012 4:35 PM
To: SabinePassToGalvestonBay
Subject: Storm Damage Reduction, Environmental Restoration, and Flood Risk in Galveston County

I own property in Galveston County (995 Alicia, Gilchrist 77617 and 1044 Waco, Gilchrist, 77617) on Bolivar Peninsula and I strongly request consideration of a beach renourishment project on Bolivar Peninsula. Highway 87 runs the length of the peninsula and the only land access to the peninsula. This land transportation route needs to be protected, as well as serious erosion that occurred as a result of Hurricane Ike 9/13/2008. Please give this request strong consideration as I believe it merits approval as service to the permanent home owners on the peninsula as well as the thousands of summer tourists.
Thank you,
Gay McAlister

Gay McAlister, Ph.D., LPC-S
Associate Director of Supervision
Southern Methodist University
5228 Tennyson, Ste. 102G
Plano, Texas 75024
972-473-3452 (Office)
972-473-3490 (Fax)

From: Tyler Ortego [mailto:tyler@oratechnologies.com]
Sent: Tuesday, April 24, 2012 9:49 AM
To: SabinePassToGalvestonBay
Subject: OysterBreak Shoreline Protection

Dear project team,

We developed the OysterBreak Shoreline Protection system for the purpose of delivering engineered shoreline protection while enhancing the health of our estuaries. I think you will find the OysterBreak an interesting alternative that is consistent with the comprehensive approach planned for the Sabine Pass to Galveston study.

The OysterBreak Shoreline Protection System uses the gregarious nature of oysters to create engineered shoreline protection structures. The OysterBreak design consists of interlocking concrete armor units that can be configured in any number of ways. The individual armor units are made of OysterKrete, a proprietary concrete developed specifically for growing oysters. Key benefits of the OysterBreak over rock structures are the ecological enhancements, low bearing pressure and ease of construction. We designed the OysterBreak as an engineered alternative to rock breakwaters, so you can use it in similar applications. More information can be found at http://www.wayfarertech.com/oysterbreak or at www.oratechnologies.com.

Would you recommend a point of contact, either at the Galveston District or with your consultants?

Thank you,

Tyler Ortego, PE
ORA Engineering, LLC
www.ora-eng.com
ORA Technologies, LLC
www.Oratechnologies.com <http://www.oratechnologies.com/>
Mobile: (225) 229-2539
http://www.linkedin.com/in/tylerortego
Twitter: @TylerOrtego

From: Mark Vincent [mailto:mvincent@poha.com]
Sent: Wednesday, March 14, 2012 3:08 PM
To: SabinePassToGalvestonBay
Cc: James Jackson
Subject: Sabine Pass to Galveston Bay, Tx Regional Risk Reduction Study

The Port of Houston Authority offers the following general comments, as the District prepares the rescoped project:

1. Public and private interests are intermingled along the coast. Proposed solutions need to consider industry participation or sponsorship of various projects during project execution phases.

2. The national significance of certain industries along the Houston Ship Channel needs to be appropriately weighted in project prioritization.

3. Structural solutions need to carefully consider impacts on transportation systems that serve industry along the channel, particularly rail. Many of the industries rely on railroad access, which cannot easily accommodate levees, flood gates, or other protective features.

4. Structural solutions that involve gates within the water system itself have the potential to significantly impact commerce, through use (closures), or indirectly through increased silitation or siltation patterns—both of which can disrupt maritime commerce for extended periods.

5. The potential scope of the project (including geographic extent) may tax the ability of the Corps to produce a viable and defendable plan under limited time and cost (3 years, $3 mil). Subdivision of the scope into smaller, mutually supported projects should be considered.

The scoping meeting presentation includes the comment, “USCG estimates that a one month closure of a major port like Houston would cost the national economy $60 billion”. If possible, PHA respectfully requests that the study managers informally share the source of that comment, so PHA can better support funding priorities for channel maintenance and operation, region wide.

Sincerely,

Mark Vincent, P.E.

Channel Development Director
Port of Houston Authority
111 East Loop North
Houston, Texas 77029
(713) 670-2605 Office
(713) 670-2427 Fax
mvincent@poha.com <mailto:ajames@poha.com>
www.poha.com <http://www.poha.com/>

From: Terren & Karen [mailto:tkroark@earthlink.net]
Sent: Friday, March 16, 2012 11:05 AM
To: SabinePassToGalvestonBay
Subject: Comments to the Sabine Pass to Galveston Bay project

I attended the public meeting that was held Wednesday, March 7, 2012 in Galveston. I would like to suggest that a long term solution be addressed. With the prospect of 9 million people populating the area in the next 50 years; something needs to be done to protect the land, erosion and life. I heard things like using things that were done in Louisiana. Why? They had a heavy rainstorm just this past week and 2 parishes were flooded. You need to start thinking outside the box. Look at the dike system in Holland. I lived in Europe for over 3 years and I have been to Holland. Europe spends money on protecting their land. Why? Because land is precious to them since the population of many of those countries exceeds the amount of land available to them so they protect it. Holland is a little country; yet they knew the value of their land was worth protecting and put in a large dike system. Europe has been around a long time and the people there have learned a lot from their years of habitation. Whereas the United States, who is young in relation to Europe, seems to think that "we" can only have the good ideas. I have lived there. Europe actually has some very good ideas and we need to really embrace their knowledge and history. They learned what happens when you take things for granted which is what we do especially here in Texas. Protect our seashores. I spent many a summer vacation on the beaches in Texas. That was all my family could afford. If we don't take care of them now, there won't be anything left for future generations. We need to think outside the usual box. Some of those ideas are only good for a short period of time. Do something that will be lasting. Use our tax money, both state and national, for something that is going to preserve our seashore and life itself. The millions of dollars that are lost every time a hurricane comes our way, will be reduced greatly if we spend the money on something that will protect us for many, many years to come. Don't use Louisiana as a model-please! Go somewhere that they know how to protect their precious land and people. Think outside the box-please!

Thank you,

Karen Roark

2214 Merrill Hills Circle

Katy, TX 77450

Own property on the West End of Galveston

tkroark@earthlink.net

PUBLIC WORKSHOP
AND NEPA SCOPING MEETING FOR
IDENTIFICATION OF
STORM DAMAGE REDUCTION, ECOSYSTEM RESTORATION,
AND FLOOD RISK MANAGEMENT OPPORTUNITIES
IN
ORANGE, JEFFERSON, CHAMBERS, HARRIS,
GALVESTON, BRAZORIA COUNTIES

Comment Form

This form is provided for your comments regarding the U. S. Army Corps of Engineers, Galveston District Sabine Pass to Galveston Bay, Texas Study Project. Please use the space below, attaching additional pages if necessary. The form may be deposited in the comment box, mailed to the address provided below, or emailedtoSabinePassToGalvestonBay@usace.army.mil. Future information will be posted to our website. http://www.swg.usace.army.mil/sabinepasstogalvestonbay/

We appreciate your interest in and contributions towards this project.

Comments:

After attending your 2/28 Meeting, it was quite obvious that you are preparing to tackle a big problem. Although I suffered significant damage from IKE, my damages were minimal compared to those of many of my neighbors here in Nassau Bay. Since IKE, I have attended several meetings @ Rice & other venues where different solutions were discussed. Some of this effort was made possible by grants from private organizations like Houston Endowment.
Although not as grand as the "IKE DIKE", the solutions offered in the SSPEED Study certainly look like they should be looked at closely by your workshop. It seemed like you gave the SSPEED effort only a cursory mention in your presentation. In this time of deficits and excess spending, it would be terrible not to take full advantage of the excellent works already completed. The SSPEED study had input from at least 6 major Universities. I was especially impressed with the hydraulic modeling and computer work done at The University of Texas. This modeling showed that had IKE come ashore @ San Luis Pass, I probably wouldn't be sitting here @ my desk writing this note
Certainly there is a lot of Engineering work left; but, please assure me that we are going to take full advantage of the good works that have already been completed. Too many times it seems like our Government Projects waste a lot of time and tax money.
Good luck
Joseph Wayne Roberts
18530 Barbuda Ln
Houston, TX 77058
waynerob@comcast.net

Comments **due by March** 16, **2012** to:

District Engineer, Galveston District
U.S. Army Corps of Engineers
Attn: Sabine Pass to Galveston Bay, TX Study
CESWG-PE-PL
P.O. Box 1229
Galveston, Texas 77553-1229

Please Print:

Your Name _____

YourCompany/O~. _____

Address _____

_____

_____

email: _____

SIERRA CLUB
FOUNDED 1892

Houston Regional Group
P. O. Box 3021
Houston, Texas 77253-3021
713-895-9309
http://texas.sierraclub.org/houston/

February 28, 2012

Colonel Christopher W. Sallese
District Commander
U.S. Army Engineer District
Galveston
Attention: Sabine Pass to Galveston Bay, Texas, Study
CESWG-PE-PL
P.O. Box 1229
Galveston, Texas 77553-1229

Dear Colonel Sallese,

Enclosed are the scoping comments of the Houston Regional Group of the Sierra Club (Sierra Club) for the U.S. Army Corps of Engineers (Corps) National Environmental Policy Act (NEPA) process for the "Identification of Storm Damage Reduction, Ecosystem Restoration, and Flood Risk Management Opportunities in Orange, Jefferson, Chambers, Harris, Galveston, and Brazoria Counties Study," also known as the "Sabine Pass to Galveston Bay, Texas Study (SPGBTS)."

1) The Corps should ensure that an environmental impact statement (EIS) accompany the SPGBT so that a programmatic landscape-scale picture is provided to citizens and decision-makers about the environmental impacts of the study recommendations. The public needs this information so that it can review, comment on, and understand the full environmental impacts of the study and any proposals and projects that are considered and result from the study.

2) To guide the Sierra Club with regard to this issue the Lone Star Chapter of the Sierra Club Executive Committee passed on July 18, 2009 the following resolution:

Resolution on Upper Texas Coast Protection

Whereas, the Upper Texas Coast (including Galveston Island and Bolivar Peninsula) provides important historic, recreational, ecologic, economic, scenic, other values and benefits, and places for people to live;

Whereas, 95% of marine organisms in the Gulf of Mexico, at some point in their life cycle, depend upon access to healthy bays and estuaries;

Whereas, the Upper Texas Coast has longtime natural shoreline erosion and accretion, exacerbated by human causes;

Whereas, the Upper Texas Coast has many important natural areas including shallow water areas; shallow water mud and sand bottoms; beaches; sand dunes; coastal

prairie; freshwater marsh; brackish water marsh; salt water marsh; mud flats; coves, bays, and estuaries; riparian or bottomland hardwood forested wetlands; and other important habitats;

Whereas, the beaches of Galveston County are now providing habitat for recovering endangered species, specifically the head-started Kemp's Ridley Sea Turtle and the Piping Plover;

Whereas, climate change is exacerbating existing flooding, subsidence, and rising sea level, thus increasing the potential for hurricane and storm damage problems on the Upper Texas Coast;

Whereas, it is important to recognize the goals of removing people and structures from harm's way, since hurricanes and flooding threaten our coast, while protecting natural ecosystems and functioning ecological processes on the Upper Texas Coast;

Be it therefore resolved, that the Sierra Club supports careful consideration of the protection of the Upper Texas coast and communities on Galveston Island and Bolivar Peninsula using the following principles:

1. The protection of Galveston Island and Bolivar Peninsula should be part of an Upper Texas Coast Erosion and Accretion Regional Plan (UTCEARP) which addresses coastal erosion and accretion; restoration and protection of natural coastal erosion and accretion processes so that they function naturally or more naturally than currently; protection of natural ecosystems; steers development away from more vulnerable natural coastal areas and those areas that are more vulnerable to hurricane and storm damage; and is implemented from Sabine Lake to Matagorda Bay.

2. The UTCEARP should focus any hard erosion solutions, considered compatible with the UTCEARP, on developed areas near the seawall in the City of Galveston proper, and allow no artificial structures that would impede the natural currents and salinity of Galveston Bay, or impede access to the bay of those marine organisms that depend upon it.

3. The UTCEARP must protect shoreline features that provide natural erosion protection like beaches, sand dunes, offshore sand replenishment areas, freshwater inflows that provide new sediment to the coastal shoreline system, and habitat for endangered species.

4. The UTCEARP must restore natural coastal shoreline system features like current sediment movement processes and remove obstacles to sediment movement and transport along the Upper Texas Coast.

5. The UTCEARP must ensure that adjacent and nearby areas do not have their shoreline erosion and accretion negatively impacted or their risk increased by implementation of the UTCEARP.

6. The UTCEARP must ensure that the Texas Open Beaches Act public "rolling easement" and access for public recreation, protection of existing public lands, and other purposes is not diminished.

7. The UTCEARP must assess and determine the environmental impacts and mitigation of these impacts due to any encouragement of additional development in flood and storm prone areas along the Upper Texas Coast caused by the implementation of the UTCEARP.

8. The UTCEARP must protect the scenic beauty of Galveston Island, Bolivar Peninsula, and the Upper Texas Coast.

9. Any UTCEARP must not encourage further development on more vulnerable natural coastal areas and areas that are more flood and storm prone (like West Galveston Island) and thus put more people; property; and sensitive areas in danger.

The principles embedded in this resolution guide these comments and the Sierra Club requests that the Corps consider this resolution when conducting the SPGBTS.

3) These Sierra Club scoping comments use the term "large structures" to describe any single storm damage reduction structural measure or system of storm damage reduction structural measures like dikes, gates, seawalls, and similar hard structural measures.

4) The Corps should, via the SPGBTS, make land acquisition one of the priority strategies to provide restoration for the Upper Texas Gulf Coast (UTGC) in the EIS. Land acquisition is permanent (fee title acquisition and conservation easements in perpetuity). Fee title acquisition allows restoration without other owners to modify or impede restoration.

The Sierra Club favors on the UTGC, from the Texas – Louisiana border to the end of Matagorda County, acquisition of areas (priority ecosystems) to be restored and added to existing public or land trust lands. Some of these priority ecosystem areas include:

1. The Katy Prairie, in western Harris County and eastern Waller County, particularly additions to and adjoining to existing conservation lands that have been protected by the Katy Prairie Conservancy. This includes coastal prairies and prairie wetlands like prairie pothole wetlands, pimple mounds, and gilgai.

2. The Eastern Chenier Plain, from Interstate (I) 45 east to the Texas – Louisiana border which includes coastal prairies and marshes in Anahuac National Wildlife Refuge, McFaddin National Wildlife Refuge, J.D. Murphree Wildlife Management Area, Candy Cain Abshier Wildlife Management Area, Nature Conservancy Texas City Prairie Preserve, Texas Point National Wildlife Refuge, Sea Rim State Park, and Scenic Galveston lands on Galveston Bay.

3. The Western Chenier Plain, from I-45 west to the end of Matagorda County and includes coastal prairies, marshes, and the important Columbia Bottomlands habitat in Brazoria National Wildlife Refuge, San Bernard National Wildlife Refuge, Big Boggy National Wildlife Refuge, Brazos Bend State Park, Stephen F. Austin State Park, Nannie M. Stringfellow Wildlife Management Area, Christmas Bay Preserve, Galveston Island State Park, and Scenic Galveston lands on Galveston Bay.

4. The Trinity River Floodplain and Delta, which includes bottomland hardwood forested wetlands in the Trinity River National Wildlife Refuge and U.S. Army Corps of Engineers Wallisville Lake Project.

5. Farther inland, but still mostly in or near the coastal zone, Sam Houston National Forest and Big Thicket National Preserve which include upland, slope, and bottomland hardwood forests, wetlands, and aquifer recharge areas.

5) The Corps should, via the SPGBTS, make climate change an issue in the EIS. The SPGBTS must analyze climate change and its impacts on the coast and any alternatives for shoreline protection. With current climate change, we can expect a sea level rise of three feet over the next hundred years.

Climate change will alter existing ecosystems and human inhabited areas and make it more difficult for plants/animals and humans to adapt successfully to these changed ecosystems. The Corps must address questions like:

1. How will the UTGC be affected by climate change?

2. What can be done to create more resilient and resistant habitats/ecosystems?

3. What can the Corps do to reduce carbon dioxide (CO2) or other greenhouse gas emissions on the UTGC?

4. What can be done to assist plants/animals and humans so they can adapt to climate change?

The Corps should prepare and include in the draft EIS, a climate change ecological resilience and resistance plan (CCERRP). The CCERRP will assess the biological and ecological elements in the UTGC and the effects that climate change has had and will have on them. The CCERRP will assist plants, animals, and ecosystems in adapting to climate change and would require monitoring of changes and mitigation measure effectiveness. The CCERRP would be based on:

1. Protection of the existing ecosystems functions on the UTGC.
2. Reduction of stressors on the ecosystems on the UTGC.

3. Restoration of natural functioning ecological processes on the UTGC.

4. Use natural recovery on the UTGC, in most instances.

5. Acquisition of buffers/corridors to expand and ensure connectivity of ecosystems on the UTGC.

6. Intervention to manipulate (manage) ecosystems on the UTGC only as a last resort.

7. Reduction of greenhouse gas emissions on the UTGC.

6) The Corps should, via the SPGBTS, make restoration that is done via habitat mitigation and is maintained in perpetuity an issue in the EIS.

7) The Corps should, via the SPGBTS, make the restoration of adequate freshwater inflows and instream flows for bays and estuaries on the UTGC an issue in the EIS. This action supports this natural mechanism that delivers sediments to the coast for shoreline accretion and stability.

8) The Corps should, via the SPGBTS, make the perpetual monitoring of restoration work done an issue in the EIS to ensure that the restoration is maintained and continues to provide the natural functioning ecological processes, values, and benefits that were envisioned it would.

9) The Corps should, via the SPGBTS, work with the Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, and the National Marine Fisheries Service via an agreement to ensure that a more focused Section 404 process provides mitigation for priority ecosystems. This should be an issue in the EIS. In addition, existing public lands or private lands that are already protected should be used as the foundation for building a natural coastal protection system.

10) The Corps should, via the SPGBTS, make a buy-out program with a perpetually ready to use fund an issue in the EIS. Such a fund would be established so that when natural or human disasters occur, impacted properties can be bought immediately and the land turned back into natural functioning ecosystems, allow retreat from the coast, and provide natural buffers for the protection of land and people.

11) The Corps should, via the SPGBTS, make the level of enforcement and compliance for coastal protection an issue in the EIS. Currently, the level of enforcement and compliance for coastal protection is not sufficient to ensure long-term and maintenance of natural ecological processes, values, and benefits. More resources are needed (money, people, equipment) for enforcement and compliance for the long-term. A fund that provides money for long-term enforcement, monitoring, and compliance would help provide protection in perpetuity.

12) The Corps should, via the SPGBTS, make prevention of the widening of the Gulf Intracoastal Waterway (GIWW) due to boat wake erosion an issue in the EIS. The

GIWW should be restored to its approved width and damages that have occurred to natural lands should be mitigated. Not only does the widening cause loss of coastal prairie and marshes but it cuts off freshwater flows across the land and changes the type of marsh, based on salinity, so the actual natural wetlands community changes or is extinguished.

13) The Corps should, via the SPGBTS, within Brazoria County, have an alternative that buys out as many residences/businesses as possible along County Road (CR) 257 (Blue Water Highway, a 10 mile stretch of coastal road) in the EIS. Such a program would ensure that people are permanently protected and out of harm's way.

Follets Island is one of the most vulnerable barrier islands (really a barrier peninsula like Bolivar Peninsula) on the Texas Coast. This is due to its narrowness, low elevation, and the number of storm overwashes or breaches that have occurred across Follets Island or beyond the road on the existing right-of-way (ROW).

Part of CR 257 would remain on Follets Island and allow fishers, hunters, and birders access. However, with a buyout people and their property would not be at risk to erosion, flooding, or storm surge because structures and the land they are on would be bought up wherever there are willing sellers. This is a low maintenance alternative that could rely on gravel and other relatively low cost materials to keep part of CR 257 open. This is an attractive alternative since Brazoria County does not have the funds to maintain CR 257 when it is damaged by erosion, flooding, or storms.

The Sierra Club is concerned that storm surge from a significant hurricane will undermine the revetment structure along CR 257 and daily tidal erosion will reduce the energy absorbing soil that is placed over the revetment.

The construction costs of the revetment were estimated to be $29 million. Because beach re-nourishment (a part of the proposal), once started will have to be continued in perpetuity and because beach grade sand is in short supply in the Galveston Bay area this will result in additional costs. Even if the revetment withstands storms and every day tidal erosion (which averages 10 feet of beach loss/year on Follets Island according to the Bureau of Economic Geology) only 3.5 miles of the 10 mile stretch have had the revetment installed. This means additional breaches will occur which will require revetment or other structural solutions to save the road. It therefore is not outrageous to estimate that construction costs and environmental impacts of shoreline protection for CR 257 may be $100 million or more.

Even this may underestimate the costs and environmental impacts of protection of CR 257 since offshore berms may also be needed to catch enough sand for beach re-nourishment. Due to the minimal sand in the system (the sandy shore-face is only a few 100 feet wide before mud and a steep drop-off are encountered) most of which is within the long-shore transport system (refer to Rice University sediment core studies from the summer of 2007) the result would be robbing current shorelines to acquire sand where CR 257 exists, if there is enough sand in the system to make a difference.

The Sierra Club has similar concerns about Bolivar Peninsula. A buy-out program for willing sellers there also should be considered in the SPGBTS.

14) The Corps should, via the SPGBTS, make the effect that shoreline protection projects have on erosion an issue in the EIS. Shoreline protection projects must not make erosion worse somewhere else or reduce long-shore current sediment loads downstream from project locations.

15) The Corps should, via the SPGBTS, make Highway 87 and other projects that destroy or alter beaches, dunes, and wetlands an issue in the EIS. Highway 87 cannot be justified in the location it is currently in. Any movement inward will destroy significant wetlands and alter wetland hydrology for a non-water dependent action.

16) The Corps should, via the SPGBTS, make hard structures like seawalls, extensive rock groins, jetties, or similar projects an issue in the EIS. These projects often cause further losses of shoreline and beaches and require even more shoreline erosion control.

17) The Corps should, via the SPGBTS, make the use of natural or soft erosion control methods like marsh planting, **some** beach re-nourishment, and the offshore insertion of flexible materials that assist in sediment dropout an issue in the EIS. These projects can have environmental impacts if not located properly or if sources of beach re-nourishment sand are in biologically important areas.

18) The Corps should, via the SPGBTS, make the impacts that trapping of sediments in inland reservoirs an issue in the EIS. The trapping of sediments in inland reservoirs have impacts on shoreline erosion and the EIS should analyze how these trapped sediments could be released in an environmentally safe manner and returned to the coast.

19) The Corps should, via the SPGBTS, make impacts that trapping of sediments by port projects and waterway improvements have an issue in the EIS. These projects have impacts on shoreline erosion and the EIS should analyze how these trapped sediments can be released in an environmentally safe manner and be returned to the coast.

20) The Corps should, via the SPGBTS, make the free operation of natural shoreline erosion process an issue in the EIS.

21) The Corps should, via the SPGBTS, make the protection of existing natural sand dunes an issue in the EIS.

22) The Corps should, via the SPGBTS, make continued building in 100-year floodplains, the hurricane zones, dunes, beaches, and marshes an issue in the EIS.

The Corps must ensure that this study does not encourage shoreline erosion producing developments.

23) The Corps should, via the SPGBTS, make the protection of existing riparian wetlands, freshwater wetlands, and all non-jurisdictional wetlands which naturally assist in control of shoreline erosion, an issue in the EIS.

24) The Corps should, via the SPGBTS, make the proposed bridge from Galveston to Bolivar an issue in the EIS. This bridge would exacerbate shoreline erosion directly, by its design and operation, and particularly indirectly due its impetus for development in coastal prairie, rangeland, wetlands, and marshes on Bolivar Peninsula. This new development will result in the loss of an important way of life and destroy natural erosion control features like beaches, dunes, marshes, prairies, wetlands, and vegetated areas.

25) The Corps should, via the SPGBTS, make resort/second homes and commercial properties for persons who have built in hurricane and flood prone areas an issue in the EIS. The risk of living near the Gulf of Mexico is well-known. Public works projects that protect the few, many of who can afford to protect themselves or move elsewhere, and require that the many pay for irresponsible lifestyles are not in the public interest. These actions ensure further destruction of the natural flood protection and erosion control features of the land including beaches, marshes, prairies, dunes, wetlands, riparian zones, and other vegetated areas.

26) **Technical Questions and Concerns About Large Structures**

The Corps should, via the SPGBTS, make large structures an issue in the EIS. Some of the questions/concerns about large structures and their associated facilities for storm surge protection and erosion control include:

1. **For Large Structures at Bolivar Roads**

a. Will this alter Galveston Bay salinity by adversely impacting marine spawning productivity (shrimp, oysters, fish species) if the width of Bolivar Roads is reduced from 10,000 feet to a lesser width (as narrow as 1,000 feet)?

b. Will this block the ingress/egress of marine organisms using flapper/guillotine gates and fill islands to provide an anchored framework?

c. Will scouring at Bolivar Roads lead to increased erosion at or near gates?

d. Could construction of large structures lead to the dredging of the Houston Ship Channel to 65-75 feet? If so would this be cost prohibitive since the Gulf of Mexico is shallow for about 20 miles out from the proposed gates at Bolivar Roads?

e. Will dredge material deposited in Galveston Bay means the loss of bay bottom and other habitats?

2. **For Large Structures Built Along All of Bolivar Peninsula, Galveston Island, and Other Areas**

a. Will this result in the loss of open beaches/dunes?

b. Will this result in the loss of federally endangered Kemp's Ridley sea turtle nesting habitat?

c. Will this result in the loss of federally endangered piping plover resting/feeding habitats or the resting/feeding habitats of other shorebirds and other birds?

d. Will this result in the loss of other land/marine organisms' feeding/nesting/shelter habitats?

e. Is there too little sand available to re-nourish beaches and is most of that sand economically prohibitive to dredge/use?

f. What will the maintenance costs, including beach re-nourishment, of large structures be?

g. Will this result in the loss of wetlands because sand will no longer be pushed across the barrier island to its backside to nourish wetland creation?

h. What will the air quality (carbon monoxide, CO2, nitrogen oxides, particulate matter, volatile organic compounds, sulfur dioxide, ozone, and air toxics) impacts be due to the construction, maintenance, repair, and operation (diesel trucks, dredge boats, etc) of large structures?

i. Will this result in the loss of all or a large portion of Houston Audubon Society's sanctuaries and other protected areas on Bolivar Peninsula or Galveston Island?

j. How much private/public property must be acquired for construction of large structures?

k. Will the beneficial effects and functions of hurricanes be reduced (flushing and deposition of sediments and nutrients) due to the use of large structures?

l. What will be the total costs, over 30 years, to finance, construct, maintain, repair, and operate large structures?

m. Will Bolivar Peninsula and other areas still be subject to large inside-the-bay storm surges after large structures are constructed?

n. Will the construction of large structures result in a false sense of security and encourage development to increase due to perceived protection provided by large

structures? Will more wetlands and other habitats be destroyed and more people and property put at risk due to this new development?

o. Will large structures encourage the ricochet of internal storm surge in Galveston Bay that occurs when a hurricane passes over?

p. Will large structures obscure or mar the natural ocean view of the wild Texas coast?

q. Will taxpayer dollars be used to benefit and subsidize private interests in a way that the public cannot afford?

r. Will Bolivar Peninsula, unless massive dredging is conducted (with its own environmental impacts) to raise portions of the Peninsula where people live, still be subject to large within the bay storm surges?

3. **For Side Dikes/Gates/ and Other Large Structures**

a. What will the erosion and habitat loss impacts be for San Luis Pass from the construction, maintenance, repair, and operation of a dike?

b. Will this interfere with the passage of water/salinity/marine organisms into and out of bays?

c. Will this interfere with currents, accretion/deposition patterns, and sand budgets?

d. Will sensitive habitats, like Christmas Bay, be harmed?

e. For those areas of the coast that are outside where large structures have been constructed, during storms and hurricanes, will there will be increased water, wave, and erosion effects? Will this result in areas without large structures subsidizing areas with large structures and paying a higher price in environmental, social, and economic costs?

27) The Corps should, via the SPGBTS, make protection of communities and beaches, sand dunes, bays, and wetlands an issue in the EIS. This includes:

1. The protection of Galveston Island and Bolivar Peninsula should be part of a coastal erosion and accretion plan (Plan). This Plan would address coastal erosion and accretion; restoration and protection of natural coastal erosion and accretion processes so that they function naturally or more naturally than currently; protection of natural ecosystems; steer development away from more vulnerable natural coastal areas and those areas that are more vulnerable to hurricane and storm damage.

2. The Plan should focus any compatible, hard structure solutions in developed areas near the seawall in the City of Galveston proper, and allow no artificial structures to

impede the natural currents, sediments, and salinities of Galveston Bay, or access to the bay of marine organisms that depend upon these features.

3. The Plan must protect shoreline features that provide natural erosion protection like beaches, sand dunes, offshore sand replenishment areas, wetlands, freshwater inflows that bring new sediment, and habitat for endangered species (like Kemp's Ridley Sea Turtles and Piping Plovers).

4. The Plan must restore natural coastal shoreline features and remove obstacles to sediment movement and transport along our coast.

5. The Plan must ensure that adjacent and nearby areas do not have their shoreline negatively impacted by the Plan.

6. The Plan must ensure that the public's Texas Open Beaches Act "rolling easement," access for public recreation, and protection of existing public lands are not diminished.

7. The Plan must assess and determine the environmental impacts and mitigation of these impacts due to any encouraged additional development in flood and storm prone areas along the coast caused by the implementation of the Plan.

8. The Plan must protect the scenic beauty of the UTGC.

9. The Plan must not encourage further development on more vulnerable natural coastal areas that are more flood and storm prone (like West Galveston Island) which puts more people; property; and sensitive areas in danger.

28) The Corps should, via the SPGBTS, make the concentration of development where residents live and work an issue in the EIS. Currently, much development has occurred or is planned for West Galveston Island and Bolivar Peninsula. Unfortunately, these areas are the most vulnerable to hurricane and storm effects. It makes sense to step back and look for a new way.

Concentrating development on East Galveston Island, where existing seawall, harbor, and city infrastructure exists makes good economic, environmental, and safety sense. Completing the sea wall around the City of Galveston; in some way protecting the Houston Ship Channel; and concentrating development in this area will do much to protect most residents of Galveston Island. Some sensitive areas, like wave buffering wetlands need protection on East Galveston Island. This can be accomplished with much less damage to Galveston's important beaches, dunes, coastal prairie, wetlands, and bays than allowing development on West Galveston Island.

29) The Corps should, via the SPGBTS, make working with existing natural features that protect the UTGC an issue in the EIS. The first line of defense against the power of hurricanes and storms are the natural features that already protect the UTGC. These natural features include beaches, dunes, wetlands, and coastal prairie ridges. Beaches

and dunes absorb tremendous amounts of wave energy during storms. They actually move shoreward as sands and sediment are pushed across coastal ridges to the back bays. This natural sand transport system feeds the maintenance of wave protecting wetlands, beaches, and dunes. Large structures destroy beaches and dunes and interrupt this natural sand transport system. Beach re-nourishment, if adequate sands can be found close by, enhances this natural sand transport system.

30) The Corps should, via the SPGBTS, make the protection of natural amenities an issue in the EIS. People visit the UTGC for the beaches, open vistas, and wildlife and sea life. People love walking the beach, watching birds, fishing, and just hanging out in the wind, sun, and water. Who doesn't like to see a porpoise cruise or a mullet jump in the Gulf of Mexico? The rare Kemp's Ridley Sea Turtle and Piping Plover nest or visit our beaches. By protecting these natural amenities the people of Galveston, Bolivar, and other coastal communities ensure their quality of life. Any solution must conserve, protect, and preserve these natural amenities or surely the UPGC will suffer over the short and long-term. Destroying beaches to protect houses means coastal communities would not be themselves.

31) The Corps should, via the SPGBTS, make the implementation of solutions in a sustainable and economic manner an issue in the EIS. Long-term protection of Galveston Island, Bolivar Peninsula, and other parts of the UTGC requires sustainable and economic solutions. Working with Nature, and not against it surely is the best way to go. For example, San Luis Pass is one of the few natural passes left that is able to function with the existing sediment supplies on the coast. Interrupting this natural system so that replenishing sand it reduced or sent elsewhere will create a further erosion problem and degrade the incredible marsh, mudflat, and shallow water areas that make this place so irresistible to beach combers, fishers, and boaters.

32) The Corps should, via the SPGBTS, make it clear that the SPGBTS is a plan for the future in the EIS. What is needed is a Coastal Protection Plan. This Plan would give everyone from Sabine Pass to Matagorda County a way to provide a vision for the future. All interested people could participate and at the end of the process all would be united going in the same direction for funding and implementation.

33) The Corps should, via the SPGBTS, ensure that the SPGBTS is the where people work together to determine how they can effectively reduce the impacts of hurricanes on humans and the environment in the EIS. The SPGBTS must make things safer and not continue to increase the risk to lives, property, and ways of life. It's our choice to make. Some of the policies that could be implemented right now by local, state, and federal governments to better protect people and the environment include:

1. All levels of government adopt the foundation policy that we all must work with Our Mother Nature, and not against her.

2. All levels of local government adopt the policy which maximally protects wetlands, which store and filter water during rain and storm events. All levels of government will

intercede in the wetlands dredge/fill permit process on behalf wetlands protection and the avoidance, minimization, and mitigation of all wetlands losses.

3. All levels of government adopt the policy of moving from an insurance and disaster relief process, in the 100-year floodplain or storm zone, to a buyout and environmental protection process.

4. All levels of government adopt the policy which requires immediate clean-up of existing hazardous waste and superfund sites or requires the owner of the waste site to build levees that will not be breached by a Category 5 Hurricane.

5. All levels of government adopt the policy which removes all governmental incentives to develop in the 100-year floodplain or storm zone.

6. All levels of government adopt the policy to support protection and expansion of existing and additional natural areas along our coasts and floodplains.

34) The Corps should, via the SPGBTS, ensure that:

1. The SPGBTS must learn from past mistakes. Years ago there was a proposal to build a ring levee all the way around the City of Galveston. Only the seawall was built. We know what happened to the City of Galveston in Hurricane Ike. A ring levee makes sense for very developed and densely populated areas like the built-up portion of the City of Galveston because storm surge does not just come from the Gulf of Mexico. Winds generate storm surges on both Galveston Bay and the Gulf of Mexico. A large structure on the Gulf of Mexico coast will not protect the City of Galveston from any storm surge that comes from Galveston Bay. We have to learn from our mistakes!

2. The SPBGTS must embrace local solutions that require local responsibility. Since the focus is on local shoreline protection for the UTGC the economic, social, and environmental responsibility to solve these problems must come from and be paid for by local sources. Our local governments and developers did not heed the call that we should not develop in vulnerable floodplains and hurricane surge areas. We must take responsibility for having encouraged development in harm's way. This misguided policy requires vast public subsidies so that people and their private property are kept somewhat safe in these vulnerable areas.

Therefore land development, where it is appropriate, must be done in a more sensible manner including set-backs, stronger building codes, reduction in public subsidized hurricane related insurance, storm surge easements, and other local solutions that make good economic, social, and environmental sense. But first we must take responsibility for the actions that got us into this mess.

3. The SPGBTS must work with Nature. The more humans oppose Nature and take a "we shall conquer" attitude the more we endanger ourselves and those we love. Much of the UTGC is not densely populated. Examples include parts of Bolivar Peninsula, the

coast between Sabine Pass and Winnie, the northern shoreline of West Galveston Bay, and Follets Island near Freeport. In these areas, it makes sense to keep people out of harm's way by protection and restoration of natural landscapes and ecosystems including beaches, sand dunes, coastal prairies, and marshes. National wildlife refuges, a national seashore, and state wildlife management areas make the most sense for these areas.

4. The SPGBTS must address the issue in the EIS that those who benefit must pay. Yes, the Houston Ship Channel is important and needs to be protected. The responsibility for that lies with channel companies who are publicly traded and privately-owned. These companies are supposed to spend **their money** to protect **their investments.** Should public money be privatized to subsidize channel companies' risk and responsibility? Channel companies, either separately or together, can afford to build new levees or strengthen existing ones. It may make more sense to construct a gate at the entrance of the Houston Ship Channel to Galveston Bay near Morgans Point. We should use the Port of Houston as the sponsor and channel companies should pay much of the cost.

35) The Corps should, via the SPGBTS, make the analysis of all types of alternatives an issue in the EIS. For instance, varied alternatives that should be analyzed include:

1. Ring levee around all of Galveston Island's East End.

2. Higher levees around Houston Ship Channel industries.

3. Levees around some job centers, like National Aeronautic and Space Administration (NASA) and University of Texas Medical Branch at Galveston (UTMBG).

4. Retreat from the coast in certain areas.

5. Buyouts on the coast and in floodplains in repetitive flood loss areas.

6. Expand existing national wildlife refuges.

7. Create a national seashore on Bolivar Peninsula and other coastal areas.

8. Increase structure elevation for new and old buildings.

9. Enforce stricter building codes and implement Federal Emergency Management Agency (FEMA) advisories.

10. Pay landowners for the use of their land as flood easements.

36) The Corps should, via the SPGBTS, emphasize natural protection and make this an issue in the EIS. Nature is a great protector against hurricane damage. Many natural areas were hard hit by Hurricane Ike, but nature is designed to take this stress. Certain

habitats are meant to take the brunt of severe storms to protect habitats inland. Nature has been able to fine tune its own protection system for a long time, and we should use what it already provides to us – dunes, beaches, and wetlands.

The beach and dunes act as a buffer between the mainland and the worst of a storm's energy. These habitats absorb the energy of storm surge by allowing waves to crash onto them and decrease the force of waves' impact on structures. The edge of dunes creates a line in front of which we should not build any manmade structures. If we build in front of, or on top of, dunes there will be nothing standing between these structures and the storm's force. A lack of dunes means that if we develop on the coastline, there will be no natural defense between us and the storm. Dunes keep smaller storm surges at bay because they function as a small natural hill between the water and the land.

What beaches and dunes are to the energy of a storm, wetlands are to storm surge. Wetlands can be immensely helpful in diverting floodwaters away from developed areas. On average an acre of wetland can hold 3 acre feet, or 1 million gallons, of water (http://www.epa.gov/owow/wetlands/pdf/Flooding.pdf).

There are currently about 120,000 acres of wetlands in Galveston Bay. Since the 1950's over 20% of natural wetland areas in Galveston have been lost (http://74.125.47.132/search?q=cache:Y4YEnlgbOvoJ:www.betterbay.org/html/media/WetlandsOfGalvestonBay.DOC+galveston+wetlands+acres&cd=5&hl=en&ct=clnk&gl=us).

37) The Corps should, via the SPGBTS, make analysis of community development an issue in the EIS. One of the best ways to protect people and property from hurricanes is to carefully select areas where development occurs. Hurricane Ike showed which areas will be hard hit by a storm and which areas remain relatively unharmed. By using Hurricane Ike as an example, the SPGBTS can analyze if development should be concentrated in areas that are more naturally protected from storms. For example, people could be encouraged to build behind the existing sea wall on the east end of Galveston Island.

Places harder hit by Hurricane Ike are good places to turn into natural areas. Properties that were destroyed or severely damaged can be bought and turned into wild areas. Preventing rebuilding in hard hit areas would decrease the risk of property damage and increase the number of natural areas that protect us from the storms.

The amount of concrete that is used in construction contributes to flood problems. When it rains some of the water is absorbed in the ground. Large concrete slabs (parking lots, roads, building foundations) do not absorb water. Water concentrates and causes flooding or water is flushed at a faster rate which floods those who live downstream.

38) The Corps should, via the SPGBTS, make analysis of the environmental impacts of large structures an issue in the EIS. The aesthetics of large structures can cause unanticipated problems. Many people, tourists and residents alike, are drawn to

Galveston for its natural beauty. Beaches and natural areas create a haven for people to get away and relax. However, large structures destroy the natural ecosystems in the area directly and indirectly.

Another problem with large structures is the time that it takes to build them and their cost. It is estimated that a large structure system could take ten to thirty years to construct. Another hurricane could hit the coast while construction is in progress. A storm could wipe out the unfinished construction. The SPGBTS should determine how to protect large structures that are being constructed from hurricanes and what this would cost.

Directly, the dune system and beaches will disappear due to the presence of large structures. Beaches will have to be re-nourished using expensive and hard to come by sand. The ecosystems around the bay area will change with the presence of large structures which could change water flow and salinity. By providing a false sense of security large structures encourage further development in more sensitive areas, like wetlands, around Galveston Bay. All of these problems combined should be analyzed in the SPGBTS. If much of the natural beauty of coastal areas is destroyed how many people will still be interested in visiting and spending their money?

39) The Corps should, via the SPGBTS, make the analysis of the false sense of security that the construction of large structures engender and make this an issue in the EIS. For example, construction of large structures along the Texas coast may create a false sense of security for people who live in the area, and could cause them to think that the seawall will prevent ALL storm damage from hurricanes.

While large structures could theoretically prevent some of the storm surge from hitting the coast, there are several other factors that contribute to hurricane damage - the two most prominent being wind and localized flooding due to rainfall. Many places that are far inland have been severely flooded as a result of downpours that occur with hurricanes. Wind can also cause significant damage. For example, much damage is caused by high winds or tornados spawned by hurricanes. If the storm surge exceeds large structures capabilities areas could end up under water. Inland floodwaters, unless released, will be trapped by large structures and exacerbate flooding behind them. In addition, the storm surge behind large structures in Galveston Bay cannot be eliminated.

This false sense of security would also contribute to a greater increase in development on the coast because of the 'protection' provided by larges structures. Should we encourage greater development of coastal areas? We must not forget that barrier islands are Nature's 'seawall' for the mainland. These islands take the worst of a storm's force, and allow less damage to occur on the mainland. When people moved to Galveston Island they built on top of the natural seawall. It makes more sense that we encourage people to move away from threatened areas in order to protect fragile ecosystems, human lives, and property from storms.

40) The Corps should, via the SPGBTS, make geo-hazard maps for the UTGC and their implementation for human safety and environmental protection an issue in the EIS.

41) The Corps should, via the SPGBTS, should prepare a set of questions in the EIS that will be answered about any alternatives that utilize large structures. Some of these questions include:

1. **Political Questions**

a. Are regulations/rules going to be implemented to keep development out of flood-prone areas?

b. What is the goal of larges structures; can that goal be accomplished; and what social, economic, financial, and environmental studies are required to determine if the goal can be accomplished?

c. What will be the process for studying the feasibility and environmental, social, and financial impacts of larges structures?

d. How will the decision be made to build or not build and who will make the decision to build/not build large structures?

e. Which entities will be involved and where will the public input occur during the study and approval/disapproval process to build/not build larges structures?

f. Will the construction of large structures lead to the dredging of the Houston Ship Channel to 60-75 feet?

g. Will there be a vote to determine whether larges structures or some other systems are implemented?

2. **Financial and Economic Questions**

a. Who is willing to finance, construct, maintain, repair, and operate a large structure system?

b. What is the full cost of large structures and any associated facilities or activities including its financing, construction, maintenance, repair, and operation?

c. Who benefits and who takes the losses financially if a large structure system is constructed?

3. **Design Questions**

a. What are alternatives to large structures?

b. How long would large structures be effective given sea level rise?

c. How long will it take to construct large structures?

d. Where will the sand come from for re-nourishment of beaches as part of a large structure proposal?

e. Where exactly will large structures be constructed and what will be the total size (footprint)?

f. If large structures are built near State Highway (SH) 3005 how will they impact the houses that are located seaward of the large structures on Galveston Island and Bolivar Peninsula?

g. Will large structures be built and used on existing roads and infrastructure or in new areas?

g. What level of protection, in hurricane category, height of storm surge, and flood or storm protection will large structures provide?

4. **Environmental Questions**

a. When will the environmental impact statement (EIS) be available?

b. What will be the environmental effect of new development caused/assisted by large structures?

c. Will more wetlands/other habitats be destroyed and more people/property put at risk due to new development?

d. Which beach organisms will be affected and how will they be affected; how will nesting sea turtles, migrating sea turtles, and the continued growth of the sea turtle population be affected; how will shorebirds be affected; and what type and how much wetlands and other wildlife habitat will be required for mitigation for large structures?

e. What monitoring of environmental affects will be conducted; who will conduct the environmental monitoring; how long will the environmental monitoring last; how much will environmental monitoring cost; and who will pay for the environmental monitoring for large structures?

f. What environmental effects will large structures have on areas that are outside of large structures but adjacent or nearby?

g. How will the natural migration of Galveston Island, as a barrier island, be affected by larges structures and will large structures prevent Galveston Island from migrating?

h. Will large structures increase subsidence of wetlands behind it by reducing sand migration and deposition?

i. Will large structures cause or enhance the storm surge ricochet that occurs within Galveston Bay during a hurricane?

j. What mitigation will be required for perpetual environmental losses from large structures?

5. **Social Questions**

a. Will large structures make it safe for people to remain on the UTGC during hurricanes?

b. What coastal mitigation alternatives are needed, other than larges structures, to protect citizens' health and welfare from hurricanes and storms?

c. Will large structures obscure/mar the natural ocean view of our wild UTGC?

d. Will taxpayer dollars be used to benefit and subsidize private interests?

e. Will large structures result in a false sense of security and encourage increased development due to the perceived protection?

f. Can people be protected from inside-the-bay storm surges?

g. What is the sustainability of the City of Galveston and Bolivar Peninsula due to their vulnerability to hurricanes and sea level rise?

42) The Corps should, via the SPGBTS, make invasive species an issue for the EIS.

43) The Corps should, via the SPGBTS, make non-point water pollution an issue in the EIS. We must ensure that large structures, roads, and associated areas (parking lots) are required to control and reduce their effluent. Roads cause much of the sediment, herbicide, and toxic pollutants that are in non-point source pollution run-off from urban areas which enter bays and estuaries.

44) The Corps should, via the SPGBTS, make the impacts of any alternatives on the Galveston Bay Estuary Program and Coastal Barrier Resources Act an issue in the EIS.

45) The Corps should, via the SPGBTS, make "public-private partnerships" an issue in the EIS. The Sierra Club is concerned that often "public-private partnerships" result in the commercialization and privatization of public resources. We must keep public resources public and managed by professionals that work for the "people" and not other interests that have other goals, like the "maximization of profit" by using public resources.

46) The Corps should, via the SPGBTS, make "political will" an issue in the EIS. The real crux of the matter is "political will." If we are not going to be serious about regulating what can and cannot happen in the coastal zone and how and how much cannot occur then all else means nothing. We will have a slow, or not so slow, decline into degradation and destruction via cumulative impacts of all actions.

We need sometimes to "just say no" to what happens in the coastal zone. Otherwise we may not have a coastal zone at all someday. We need to take responsibility now or our children will not understand why we did not. We are less in need of "innovative ideas" than "political will".

47) The Corps should, via the SPGBTS, make economic impacts that this proposal has in relation to environmental impacts an issue in the EIS. This includes the qualitative and quantitative impacts due to nature tourism and existing recreational pursuits in the area. NEPA requires such analysis as follows:

1. **Section 101(a)** of the NEPA states, "The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances ... to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

2. **Section 101(b)(5)** of the NEPA states, "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities".

3. **Section 102(1)(B)** of the NEPA states, "... which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations".

4. **Section 102(1)(C)** of the NEPA states, "... major Federal actions significantly affecting the quality of the human environment". (what is economics but a part of the human environment)

5. **Section 201(2)** of the NEPA states, "current and foreseeable trends in the quality, management and utilization of such environments and the effects of those trends on the social, economic, and other requirements of the Nation".

6. **Section 201(3)** of the NEPA states, "the adequacy of available natural resources for fulfilling human and economic requirements of the National in the light of expected population pressures".

7. **Section 202** of the NEPA states, "to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs and interests of the Nation".

8. **Section 204(4)** of the NEPA states, "to develop and recommend to the president national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation".

9. **Section 1501.2(b)** of CEQ NEPA regulations states, "Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses."

10. **Section 1508.8(b)** of CEQ NEPA regulations states, "... Effects includes ecological ... aesthetic, historic, cultural, economic, social or health, whether direct, indirect, or cumulative".

11. **Section 1508.14** of CEQ NEPA regulations states, "... This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment".

Without a full accounting of the economic and environmental costs the Corps will not be integrating all costs of storm damage reduction, ecosystem restoration, and flood risk management and providing that information to the public for its review and comment about all costs and benefits of the proposal.

48) The Corps should, via the SPGBTS, use public interest review factors including flood hazards, land use, fish and wildlife values, wetlands, aesthetics, economics, conservation, shore erosion and accretion, safety, water quality, and general environmental concerns in preparing the EIS.

49) The Corps should, via the SPGBTS, make long-term protection of mitigation areas and whether created habitat will be appropriately done an issue for the EIS. Some of the questions that must be answered include:

1. What agency will be responsible for monitoring and enforcement of mitigation areas?

2. What resources does this agency have to conduct unannounced inspections? What is that agency's track record?

3. How often will that agency monitor the mitigation for this proposal?

4. What criteria will be used to determine if the mitigation is functioning as required by the permit?

5. How will this be determined and or measured?

50) The Corps should, via the SPGBTS, examine all cumulative impacts and make this an issue in the EIS. The cumulative impacts of all past, present, and future foreseeable actions must be identified and their impacts must be assessed, analyzed, and evaluated. The cumulative impacts analysis in the EIS must comply with the Council on Environmental Quality (CEQ) NEPA implementing regulations, 40 CFR 1502.16, 1508.7, 1508.8, 1508.25, and 1508.27.

The CEQ has extensively described the minimum requirements for analysis and mitigation of cumulative impacts on environmental quality. At minimum, an adequate cumulative effects analysis must:

1. Identify the past, present, and reasonably foreseeable actions of the Corps and other parties affecting each particular aspect of the affected environment

2. Must provide quantitative information regarding past changes in habitat quality and quantity, water quality, resource values, and other aspects of the affected environment that are likely to be altered by Corps actions

3. Must estimate incremental changes in these conditions that will result from Corps actions in combination with actions of other parties, including synergistic effects

4. Must identify any critical thresholds of environmental concern that may be exceeded by Corps actions in combination with actions of other parties

5. Must identify specific mitigation measures that will be implemented to reduce or eliminate such effects

The Corps must use the CEQ's January 1997 document, "Considering Cumulative Effects Under the National Environmental Policy Act" for determining cumulative impacts and carrying out its analysis, assessment, and evaluation. It is clear that the Corps has an affirmative duty, a statutory duty, and a regulatory duty to carry out cumulative impacts assessment.

Some of the especially important quotes from the CEQ document include:

a. On page v, "Only by reevaluating and modifying alternatives in light of the projected cumulative effects can adverse consequences be effectively avoided or minimized. Considering cumulative effects in also essential to developing appropriate mitigation and monitoring its effectiveness."

b. On page v, "By evaluating resource impact zones and the life cycle of effects rather than projects, the analyst can properly bound the cumulative effects analysis. Scoping can also facilitate the interagency cooperation needed to identify agency plans and other actions whose effects might overlap those of the proposed action."

c. On page vi, "When the analyst describes the affected environment, he or she is setting the environmental baseline and thresholds of environmental change that are important for analyzing cumulative effects. Recently developed indicators of ecological integrity. (e.g., index of biotic integrity for fish) and landscape conditions (e.g., fragmentation of habitat patches) can be used as benchmarks of accumulated change over time ... GIS technologies provide improved means to analyze historical change in indicators of the condition of resources, ecosystems, and human communities, as well as the relevant stress factors.

d. On page vi, "Most often, the historical context surrounding the resource is critical to developing these baselines and thresholds and to supporting both imminent and future decision-making."

e. On page ... the consequences of human activities will vary from those that were predicted and mitigated ... therefore, monitoring the accuracy of predictions and the success of mitigation measures is critical.

f. On page vi, "Special methods are also available to address the unique aspects of cumulative effects, including carrying capacity analysis, ecosystem analysis, economic impacts analysis, and social impact analysis.

g. On page vii, Table E-1, "CEA Principles ... Cumulative effects analysis ...Address additive, countervailing, and synergistic effects ... Look beyond the life of the action.

h. On page 1, "The range of actions that must be considered includes not only the projects proposal but all connected and similar actions that could contribute to cumulative effects.

i. On page 3, "The purpose of cumulative effects analysis, therefore is to ensure that federal decisions consider the full range of consequences of actions ... If cumulative effects become apparent as agency programs are being planned or as larger strategies and policies are developed then potential cumulative effects should be analyzed at that times.

j. On page 3, Cumulative effects analysis necessarily involves assumptions and uncertainties, but useful information can be put on the decision-making table now ... Important research and monitoring programs can be identified that will improve analyses in the future, but their absence should not be used as a reason for not analyzing cumulative effects to the extent possible now ... adaptive management provisions for flexible project implementation can be incorporated into the selected alternative."

k. On page 4, "The Federal Highway Administration and state transportation agencies frequently make decisions on highway projects that may not have significant direct environmental effects, but that may induce indirect and cumulative effects by permitting other development activities that have significant effects on air and water resources at a regional or national scale, The highway and other development activities can reasonably be foreseen as "connected actions.

l. On page 7, "Increasingly, decision makers are recognizing the importance of looking at their projects in the context of other development in the community or region (i.e., of analyzing the cumulative effects) ... Without a definitive threshold, the NEPA practitioner should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant ... Cumulative effects results from spatial (geographic) and temporal (time) crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation."

m. On page 8, Table 1-2, lists 8 principles of cumulative effects analysis. See copy enclosed.

n. On page 19, "The first step in identifying future actions is to investigate the plans of the proponent agency and other agencies in the area. Commonly, analysts only include those plans for actions which are funded or for which other NEPA analysis is being prepared. This approach does not meet the letter or intent of CEQ's regulations ... The analyst should develop guidelines as to what constitutes "reasonably foreseeable future actions" based on planning process within each agency ... In many cases, local government planning agencies can provide useful information on the likely future development of the region, such as master plans. Local zoning requirements, water supply plans, economic development plans, and various permitting records will help in identifying reasonably foreseeable private actions ... These plans can be considered in the analysis, but it is important to indicate in the NEPA analysis whether these plans were presented by the private party responsible for originating the action. Whenever speculative projections of future development are used, the analyst should provide an explicit description of the assumptions involved ... NEPA litigation ... has made it clear that "reasonable forecasting" is implicit in NEPA and that it is the responsibility of federal agencies to predict the environmental effects of proposed actions before they are fully known.

o. On page 23, "Characterizing the affected environment in a NEPA analysis that addresses cumulative effects requires special attention to defining baseline conditions. These baseline conditions provide the context for evaluating environmental consequences and should include historical cumulative effects to the extent feasible.

p. On page 29, "Lastly, trends analysis of change in the extent and magnitude of stresses in critical for projecting the future cumulative effects.

q. On page 29, "Government regulations and administrative standards ... often influence developmental activity and the resultant cumulative stress on resources, ecosystems, and human communities.

r. On page 31, "Cumulative effects occur through the accumulation of effects over varying periods of time. For this reason, an understanding of the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of proposed actions. Trends data can be used ... to establish the baseline for the affected environment more accurately (i.e., by incorporating variation over time) ... to evaluate the significance of effects relative to historical degradation (i.e., by helping to estimate how close the resource is to a threshold of degradation) ... to predict the effects of the actions (i.e., by using the model of cause and effects established by past actions)."

s. On pages 38-40, "Using information gathered to describe the affected environment, the factors that affect resources (i.e., the causes in the cause-and-effect relationships) can be identified and a conceptual model of cause and effect developed ... The cause-and-effect model can aid in the identification of past, present, and future actions that should be considered in the analysis ... The cause-and effect relationships for each resource are used to determine the magnitude of the cumulative effect resulting from all actions included in the analysis ... one of the most useful approaches for determining the likely response of the resource ... to environmental change is to evaluate the historical effects of activities similar to those under consideration.

t. On page 41, "The analyst's primary goal is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions ... The critical element in this conceptual model is defining an appropriate baseline or threshold condition of the resource.

u. On page 43, "Situations can arise where an incremental effect that exceeds the threshold of concern for cumulative effects results, not from the proposed action, but the reasonably foreseeable but still uncertain future actions.

v. On page 45, "The significance of effects should be determined based on context and intensity ... Intensity refers to the severity of effect ... As discussed above, the magnitude of an effect reflects relative size or amount of an effect. Geographic extent considers how widespread the effect might be. Duration and frequency refers to whether the effect is a one-time event, intermittent, or chronic.

w. On page 45, "Determinations of significance ... are the focus of analysis because they lead to additional (more costly) analysis or to inclusion of additional mitigation (or a detailed justification for not implementing mitigation) ... the project proponent should avoid, minimize, or mitigate adverse effects by modifying alternatives ... in most cases, however, avoidance or minimization are more effective than remediating unwanted effects."

y. On page 51, "different resource effects that cumulatively affect interconnected systems must be addressed in combination."

51) The Corps should, via the SPGBTS, make the inclusion of important information an issue in the EIS. If this is not done then important information will be hidden from the public and decision-makers about the magnitude and significance of storm damage reduction, ecosystem restoration, and flood risk management alternatives. The need for this information in an EIS is documented by the following:

1. **CEQ NEPA Regulation, 1500.1(b),** "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."

2. **CEQ NEPA Regulation, 1500.1(c),** "The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences."

3. **CEQ NEPA Regulation, 1500.2(b),** "Implement procedures to make the NEPA process more useful to decision-makers and the public."

4. **CEQ NEPA Regulation, 1500.2(d),** "Encourage and facilitate public involvement in decisions which affect the quality of the human environment."

5. **CEQ NEPA Regulation, 1500.4(b),** "Preparing analytic rather than encyclopedic environmental impact statements."

6. **CEQ NEPA Regulation, 1500.4(f),** "Emphasizing the portions of the EIS that are useful to decision-makers and the public."

7. **CEQ NEPA Regulation, 1501.2(b),** "Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses."

8. **CEQ NEPA Regulation, 1502.2,** "EISs shall be analytic rather than encyclopedic."

9. **CEQ NEPA Regulation, 1502.4(a),** "Agencies shall make sure the proposal which is the subject of an EIS is properly defined."

10. **CEQ NEPA Regulation 1502.16,** "This section forms the scientific and analytic basis for the comparisons ... environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and irreversible or irretrievable commitments of resources."

11. **CEQ NEPA Regulation, 1502.21,** "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment."

12. **CEQ NEPA Regulation, 1502.24,** "Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in EISs. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."

13. **CEQ NEPA Regulation, 1506.6(a),** "Agencies shall make diligent efforts to involve the public in preparing and implementing their NEPA procedures."

14. **CEQ NEPA Regulation, 1508.3,** "Affecting means will or may have an effect on."

15. **CEQ NEPA Regulation, 1508.14,** "Human Environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment ... When an EIS is prepared and economic or social and natural or physical environmental effects are interrelated then the EIS will discuss all of these effects on the human environment."

16. **CEQ NEPA Regulation, 1508.18,** "Major Federal action includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly ... Actions include new and continuing activities, including projects ... approval of specific projects, such as construction or management activities located in a defined geographic area."

17. **CEQ NEPA Regulation, 1508.27,** "Significantly as used in NEPA requires considerations of both context and intensity ... Context means that the significance of an action must be analyzed in several contexts ... For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as whole ... Intensity refers to the severity of impact ... impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believe that on balance the effect will be beneficial ... Unique characteristics of the geographic area ... The degree to which the effects on the quality of the human environment are likely to be highly controversial ... The degree to which the possible effects ... are highly uncertain or involve unique or unknown risks ... Whether the action is related to other actions with individually insignificant but cumulatively significant impacts ... Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment."

52) The Corps should, via the SPGBTS, ensure that dictionary usage of words or phrases do not suffice to provide the public with a clear picture of what the intensity, significance, and context of environmental impacts are in the EIS. An all qualitative assessment, analysis, and evaluation of environmental impacts is not sufficient to deal

with the clearly articulated CEQ requirements in **Section 1502.14,** that the EIS "should present the environmental impacts of the proposal and the alternatives in comparative form, thus **sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public".**

1. Quantitative assessment, analysis, and evaluation are necessary to ensure that alternatives and environmental impacts are clearly defined and shown in the EIS. As stated in the CEQ NEPA implementing regulations, **Section 1500.1(b),** Purpose, "NEPA procedures must insure that environmental information is available to public officials and citizens ... The information must be of high quality. Accurate scientific analysis ... are essential to implementing NEPA".

2. As stated in **Section 1501.2(b),** "Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses."

3. As stated in **Section 1502.8,** "which will be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts."

4. As stated in **Section 1502.18(b),** about the Appendix, "Normally consist of material which substantiates any analysis fundamental to the impact statement".

5. As stated in **Section 1502.24,** "Agencies shall insure the professional integrity, of the discussions and analyses ... They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."

The analysis that the Corps must conduct for this EIS is much more than **"best professional judgment". "Best professional judgment"** is where a group of people, using their experience, decide what is important. This level of assessment, analyses, and evaluation for environmental impacts and alternatives is an insufficient foundation upon which to base an EIS.

The Corps should, via the SPGBTS, define what phrases and words mean so that the public can review, comment on, and understand what the Corps refers to in the EIS. Decision-makers must know this information.

The qualitative description of phrases used to describe environmental impacts or the protectiveness of an alternative does not provide the public with the degree of comparison required by the CEQ's mandatory NEPA implementing regulations. These regulations state, in **Section 1502.14, Alternatives including the proposed action,** that, "This section is the heart of the EIS ... it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public ... Devote substantial treatment to each alternative in detail ... so that reviewers may evaluate their comparative merits."

The CEQ also states, in **Section 1502.16 and (d), Environmental consequences,** that, "This section forms the scientific and analytic basis for the comparisons ... The environmental effects of alternatives including the proposed action the comparisons under **Section 1502.14** will be based on this discussion."

It is key that the Corps clearly compare and make apparent the distinctiveness of each alternative and its impacts or protectiveness. This is not accomplished when phrases are used qualitatively instead of quantitatively with more detailed and clear descriptions of qualitative information. **The Sierra Club requests that the Corps clarify and detail clearly the comparative differences between each alternative and define clearly what the words or phrases used mean.**

The Sierra Club appreciates this opportunity to comment. Thank you.

Sincerely,

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

From: Ray Taft [mailto:raybacliff@verizon.net]
Sent: Thursday, March 01, 2012 5:02 PM
To: SabinePassToGalvestonBay
Subject: Comment concerning USACE Galveston NEPA and flood control meetings.

Hello,

I think the starting point for storm damage reduction, flood risk management and ecosystem restoration should be with maintaining the current storm drain systems.

As you all probably know, the storm drain inlets, pipes and ditches all need periodic cleaning. Without cleaning, debris and trash can choke up a drain system resulting in reduced efficiency.

According to the EPA, pollution prevention depends upon good housekeeping. Pollutants, in the form of undesirable debris and trash, in a drain system can be washed into the waterways if not removed.

This all adds up to the need to clean storm drain systems on a regular basis. The municipal organizations responsible for maintaining our current systems should be performing storm drain system cleaning on a periodic schedule.

Drain systems may also need periodical engineering reviews. Sediment build-up or erosion in ditches can cause a system to fail to operate as originally designed. Increased drain inputs from added development can overload a drain system if the system was not designed for expansion.

Let’s ensure the local municipalities can demonstrate they are maintaining the current systems properly before spending taxpayer money on new systems and new projects.

I urge the group to first institute a program that will educate local municipalities on the need to maintain current storm drain systems and if needed to provide training on how to maintain storm drain systems according to accepted practices.

Regards,
Ray Taft
Bacliff, TX

From: Winston Denton [mailto:Winston.Denton@tpwd.state.tx.us]
Sent: Wednesday, March 14, 2012 5:01 PM
To: SabinePassToGalvestonBay
Cc: Michael Rezsutek; Cherie OBrien
Subject: Sabine Pass to Galveston Bay Risk Reduction

Comments provided by Texas Parks and Wildlife Department Upper Coast Region for the Wildlife Division J. D. Murphree Wildlife Management Area (WMA) and the Coastal Fisheries Division Ecosystem Resources Program. Contact information regarding specific projects are provided below.

Please let me know if you have any questions

Sincerely,

Winston Denton
Ecosystem Resources Program
Coastal Fisheries Division
Texas Parks and Wildlife Department
1502 FM 517 E
Dickinson, TX 77539
281-534-0138
winston.denton@tpwd.state.tx.us

1. Inverted Siphons Under the Gulf Intracoastal Waterway and the Keith Lake Fish Pass Cross Section Reduction

Construct two sets of inverted siphons under the GIWW to move excess freshwater from the marshes north of the GIWW to salt-stressed marshes south of the GIWW. This portion of the project will: 1) Reduce the salinity within the marshes around the discharge points lessening the level of sulfide stress in the plants. 2) Create a head of freshwater against the salt water entering through the Keith Lake Fish Pass. 3) Re-establish salinities gradients from Willow and Barnett Lakes on McFaddin National Wildlife Refuge (NWR) to the Keith Lake Fish Pass.

Reduce the cross section of Keith Lake Fish Pass from its current size to the original cross section. This project has been studied by USACOE under a CAP 1135.

Project Contacts:

Richard LeBlanc, Jr., General Manager of Drainage District 6 at 409-842-1818. (Siphon Project)

Mike Rezsutek at 409-736-2551, michael.rezsutek@tpwd.state.tx.us <mailto:michael.rezsutek@tpwd.state.tx.us> (Siphon and Keith Lake Fish Pass Projects)

The feasibility of the siphons is supported by a Texas Water Development Board study completed in 2009. The complete citation is: Dharhas Pothina and Carla G. Guthrie, Ph.D. 2009. Evaluating inverted siphons as a means of mitigating

salinity intrusion in the Keith Lake/Salt Bayou System, Jefferson County, Texas. A report submitted to US Environmental Protection Agency Gulf of Mexico Program. Grant Number MX-96401704."

2. Beneficial Use of Dredged Material to Restore Marshes in the Keith Lake Watershed

Expand the beneficial use of dredged maintenance material from Golden Pass LNG and other dredging projects to restore elevations and marsh communities on the J. D. Murphree WMA Salt Bayou Unit, the McFaddin NWR and private property within the Keith Lake watershed. Coordination with multiple landowners and the USACOE would result in a larger and cost effective project. The restoration of a healthy marsh community will reduce the impacts of storm surges.

Project Contact:

Mike Rezsutek at 409-736-2551, michael.rezsutek@tpwd.state.tx.us <mailto:michael.rezsutek@tpwd.state.tx.us>

3. Stabilization and Erosion Protection of the Banks and Adjacent Habitats Along the GIWW

Continue the placement of rock breakwaters in front of the banks along the GIWW. This technique reduces erosion of the bank, provides protection to the adjacent freshwater and intermediate marshes, and traps sediment behind the breakwaters creating a narrow fringe of salt marsh habitat. This is a well established method of preventing erosion that is practiced in Louisiana and Texas.

4. Infrastructure Development for the Continued Use of Dredge Material in the Nelda Stark Unit, Lower Neches WMA

Complete the necessary magnetometer and bathymetric surveys and design and construct a system of containment levees/terraces for future placement of dredge material. The completion of this phase would allow for Restoration of Nelda Stark Unit as material becomes available from local industries along the Sabine Neches Waterway. The area would be suitable for the beneficial use of maintenance and new work dredged material.

Project Contact:

Mike Rezsutek at 409-736-2551, michael.rezsutek@tpwd.state.tx.us <mailto:michael.rezsutek@tpwd.state.tx.us>

5. Restoration of the Beach Ridge from McFaddin NWR to High Island

Restore the beach ridge from McFaddin NWR to High Island. The primary intent of the project is to prevent frequent infusions of salt water from the Gulf of Mexico into the freshwater and intermediate marshes between the existing beach ridge remnants and the GIWW.

Project Contacts:

Patrick Walther and Tim Cooper at the Texas Chenier Plain Refuge Complex

6. Re-evaluation of the Current Use of Maintenance Dredged Material Under existing EA's and EIS's

Regionally (Sabine Pass to San Luis Pass) evaluate and amend/improve existing EA's and EIS's associated with dredging projects, mainly projects whose maintenance is under the authority of the Corps' Operations [and Maintenance] Division. The emphasis of the evaluation should be to revise the projects' Placement Areas (PA's) incorporating newer ideas, science, and techniques such as beneficial use of dredge material to mitigate, and protect against shoreline erosion (beach and bay), loss of wetlands and other natural resources (undeveloped costal prairie, bird rookery islands), and destruction to private and commercial property and to restore shorelines (beach and bay), wetlands, and other natural resources (bird rookery island).

Project Contact:

Cherie O'Brien at 281-534-0132, cherie.obrien@tpwd.state.tx.us <mailto:cherie.obrien@tpwd.state.tx.us>

7. Projects Promoting Sand Migration at Shipping Channels

Design and evaluate alternative techniques that would allow/promote the migration of sand to by-pass ship channels. The project should include the construction of a pilot project.

Project Contact:

Cherie O'Brien at 281-534-0132, cherie.obrien@tpwd.state.tx.us <mailto:cherie.obrien@tpwd.state.tx.us>

PART II

COMMENTS
ON
DRAFT INTEGRATED FEASIBILITY REPORT/ ENVIRONMENTAL IMPACT STATEMENT

ATTACHMENT 4
DIFR-EIS NOTICE OF AVAILABILITY

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OAR–2015–0202; FRL–9933–72–OEI]

Information Collection Request Submitted to OMB for Review and Approval; Comment Request; Recordkeeping and Reporting Related to E15

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Environmental Protection Agency has submitted an information collection request (ICR), ''Recordkeeping and Reporting Related to E15'' (EPA ICR No. 2408.04, OMB Control No. 2060–0675) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). Public comments were previously requested via the **Federal Register** (80 FR 15595) on March 24, 2015 during a 60-day comment period. This notice allows for an additional 30 days for public comments. A fuller description of the ICR is given below, including its estimated burden and cost to the public. An Agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

DATES: Additional comments may be submitted on or before October 13, 2015.

ADDRESSES: Submit your comments, referencing Docket ID Number EPA–HQ–OAR–2015–0202, to (1) EPA online using *www.regulations.gov* (our preferred method), by email to *a-and-r-Docket@epa.gov,* or by mail to: EPA Docket Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460, and (2) OMB via email to *oira_submission@omb.eop.gov.* Address comments to OMB Desk Officer for EPA.

EPA's policy is that all comments received will be included in the public docket without change including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: Geanetta Heard, Fuel Compliance Center, 6406J, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: 202–343–9017 fax number: 202–565–2085 email address: *heard.geanetta@epa.gov.*

SUPPLEMENTARY INFORMATION: Supporting documents, which explain in detail the information that the EPA will be collecting, are available in the public docket for this ICR. The docket can be viewed online at *www.regulations.gov* or in person at the EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is 202–566–1744. For additional information about EPA's public docket, visit *http://www.epa.gov/dockets.*

Abstract: Under the Clean Air Act (CAA), EPA granted partial waivers that allow gasoline containing greater than 10 volume percent (vol%) ethanol up to 15 vol% ethanol (E15) to be introduced into commerce for use in model year (MY) 2001 and newer light-duty motor vehicles, subject to certain conditions. EPA issued final rule establishing several measures to mitigate misfueling of other vehicles, engines and equipment with E15 and the potential emissions consequences of misfueling. The rule prohibits the use of gasoline containing more than 10 vol% ethanol in vehicles, engines and equipment that are not covered by the partial waiver decisions. The rule also requires all E15 gasoline fuel dispensers to have a specific label when a retail station or wholesale-purchaser consumer chooses to sell E15. In addition, the rule requires that product transfer documents (PTDs) specifying ethanol content and Reid Vapor Pressure (RVP) accompany the transfer of gasoline blended with ethanol, and a survey of retail stations to ensure compliance with these requirements. The rule also modifies the Reformulated Gasoline (RFG) program by updating the Complex Model to allow fuel manufacturers to certify batches of gasoline containing up to 15 vol% ethanol. This ICR supporting statement addresses associated recordkeeping and reporting items.

Respondent's obligation to respond: Mandatory (40 CFR part 80).

Estimated number of respondents: 2,103 (total).

Estimated number of responses: 44,000,103.

Frequency of response: On occasion.

Total estimated burden: 13,270 hours (per year). Burden is defined at 5 CFR 1320.03(b).

Total estimated cost: $ 1,340,292, which includes no annualized capital or operation & maintenance costs.

Changes in Estimates: We expect there will be a decrease in the total estimated respondents, responses and cost to the industry compared to the ICR currently approved by OMB. This change in burden is due to no longer requiring the programing of product transfer codes in this collection. The respondent universe decreased from 6,211 to 2,103, a difference of 4,108 members. The number of responses declined from 44,010,211 to 44,000,103, a difference of 10,108 reports. This reduced the industry burden hours from 37,350 to 13,270.

Courtney Kerwin,

Acting Director, Collection Strategies Division.

[FR Doc. 2015–22900 Filed 9–10–15; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–9022–8]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7146 or *http://www2.epa.gov/nepa.*

Weekly receipt of Environmental Impact Statements (EISs).

Filed 08/31/2015 Through 09/04/2015.

Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: *http://www.cdxnodengn.epa.gov/cdx-enepa-public/action/eis/search.*

EIS No. 20150253, Draft, USACE, PR, Caño Martín Peña Ecosystem Restoration Project, Comment Period Ends: 10/26/2015, Contact: Jim Suggs 904–232–1018.

EIS No. 20150254, Draft, FRA, AZ, Arizona Passenger Rail Corridor: Tucson to Phoenix, Comment Period Ends: 10/30/2015, Contact: Andrea Martin 202–493–6201.

EIS No. 20150255, Draft, USACE, TX, Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Reduction and Ecosystem Restoration, Comment Period Ends: 10/26/2015, Contact: Janelle Stokes 409–766–3039.

EIS No. 20150256, Draft, FERC, FL, Southeast Market Pipeline Project, Comment Period Ends: 10/26/2015, Contact: John Peconom 202–502–6352.

EIS No. 20150257, Final, USDA, PRO, Programmatic—Asian Longhorned Beetle Eradication Program, Review Period Ends: 10/12/2015, Contact: Jim E. Warren 202–316–3216.

EIS No. 20150258, Draft, USACE, CA, Panoche Valley Solar Facility, Comment Period Ends: 10/26/2015, Contact: Lisa M. Gibson 916–557–5288.

Amended Notices

EIS No. 20150210, Draft, USFS, WY, Teton to Snake Fuels Management, Comment Period Ends: 10/05/2015, Contact: Steve Markason 307–739–5431 Revision to FR Notice Published 08/07/2015; Extending Comment Period from 09/21/2015 to 10/05/2015.

Dated: September 8, 2015.

Karin Leff,

Acting Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2015–22932 Filed 9–10–15; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OECA–2014–0089; FRL–9933–40–OEI]

Information Collection Request Submitted to OMB for Review and Approval; Comment Request; NESHAP for Semiconductor Manufacturing (Renewal)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Environmental Protection Agency has submitted an information collection request (ICR), ''NESHAP for Semiconductor Manufacturing (40 CFR part 63, subpart BBBBB) (Renewal)'' (EPA ICR No. 2042.06, OMB Control No. 2060–0519), to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). This is a proposed extension of the ICR, which is currently approved through September 30, 2015. Public comments were previously requested via the **Federal Register** (79 FR 30117) on May 27, 2014 during a 60-day comment period. This notice allows for an additional 30 days for public comments. A fuller description of the ICR is given below, including its estimated burden and cost to the public. An Agency may neither conduct nor sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

DATES: Additional comments may be submitted on or before October 13, 2015.

ADDRESSES: Submit your comments, referencing Docket ID Number EPA–HQ–OECA–2014–0089, to: (1) EPA online using *www.regulations.gov* (our preferred method); or by email to *docket.oeca@epa.gov,* or by mail to: EPA Docket Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460; and (2) OMB via email to *oira_submission@omb.eop.gov.* Address comments to OMB Desk Officer for EPA.

EPA's policy is that all comments received will be included in the public docket without change including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential Business Information (CBI), or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: Patrick Yellin, Monitoring, Assistance, and Media Programs Division, Office of Compliance, Mail Code 2227A, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: (202) 564–2970; fax number: (202) 564–0050; email address: *yellin.patrick@epa.gov.*

SUPPLEMENTARY INFORMATION: Supporting documents which explain in detail the information that the EPA will be collecting are available in the public docket for this ICR. The docket can be viewed online at *www.regulations.gov* or in person at the EPA Docket Center, WJC West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is 202–566–1744. For additional information about EPA's public docket, visit: *http://www.epa.gov/dockets.*

Abstract: The affected entities are subject to the General Provisions of the NESHAP (40 CFR part 63, subpart A), and any changes, or additions to the Provisions specified at 40 CFR part 63, subpart BBBBB. Owners or operators of the affected facilities must submit an initial notification report, performance tests, and periodic reports and results. Owners or operators are also required to maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, or any period during which the monitoring system is inoperative. Reports, at a minimum, are required semiannually.

Form Numbers: None.

Respondents/affected entities: Semiconductor manufacturing facilities.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart BBBBB).

Estimated number of respondents: 1 (total).

Frequency of response: Initially, occasionally and semiannually.

Total estimated burden: 41 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $4,710 (per year), including $550 in either annualized capital/start-up and/or operation & maintenance costs.

Changes in the Estimates: There is a small increase in the respondent burden from the most- recently approved ICR due to an update in assumption and an adjustment in labor rates. In this ICR, we assume the existing major source will read and re-familiar with the rule requirement annually. We have also updated all burden calculations using the latest labor rates from the Bureau of Labor Statistics.

Courtney Kerwin,

Acting Director, Collection Strategies Division.

[FR Doc. 2015–22896 Filed 9–10–15; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OECA–2014–0031; FRL–9933–85–OEI]

Information Collection Request Submitted to OMB for Review and Approval; Comment Request; NSPS for Petroleum Dry Cleaners (Renewal)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Environmental Protection Agency has submitted an information collection request (ICR), ''NSPS for Petroleum Dry Cleaners (40 CFR part 60, subpart JJJ) (Renewal)'' (EPA ICR No. 0997.11, OMB Control No. 2060–0079), to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). This is a proposed extension of the ICR, which is currently approved through September 30, 2015. Public comments were previously requested via the **Federal Register** (79 FR 30117) on May 27, 2014 during a 60-day comment period. This notice allows for an additional 30 days for public comments. A fuller description of the ICR is given below, including its estimated burden and cost to the public. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

ATTACHMENT 5
TRANSCRIPT OF BEAUMONT, TEXAS, PUBLIC MEETING

NOTICE OF PUBLIC MEETING
SABINE PASS TO GALVESTON BAY, TEXAS
COASTAL STORM RISK REDUCTION AND ECOSYSTEM RESTORATION
DRAFT INTEGRATED FEASIBILITY REPORT -
ENVIRONMENTAL IMPACT STATEMENT

Interested parties are hereby notified of and invited to attend an open house and public meeting to be conducted by the U.S. Army Corps of Engineers and the Texas General Land Office on:

OCTOBER 6, 2015
OPEN HOUSE 6:00-7:00 PM
PUBLIC MEETING 7:00-8:30 PM

PRICE AUDITORIUM
THE JOHN GRAY CENTER AT LAMAR UNIVERSITY
855 JIM GILLIGAN WAY, BEAUMONT, TEXAS 77710

The meeting will provide an opportunity for all persons to comment on the Draft Integrated Feasibility Report - Environmental Impact Statement. A map showing the meeting location is attached. Written comments must be postmarked by October 26, 2015. The draft document is available at:

http://www.swg.usace.army.mil/BusinessWithUs/PlanningEnvironmentalBranch/DocumentsforPublicReview.aspx

Comments may be mailed or emailed to:

Galveston District, Corps of Engineers
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553
or
Janelle.S.Stokes@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS PUBLIC MEETING

October 6, 2015

7:00 p.m.

Price Auditorium
John Gray Center at Lamar University
855 Jim Gilligan Way
Beaumont, Texas

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Appearances:

Lieutenant colonel Jared Erickson

Mr. Ray Newby

Mr. Fred Jackson

Mr. James Wolfe

Dr. Edmond Russo

Ms. Sharon Tirpak

Ms. Sherry Willie

Ms. Lauren Kruse

Ms. Janelle Stokes

Mr. Winston Denton

Court Reporter:

TAMARA CASTILLE DEROUEN, CSR
Nell McCallum & Associates, Inc.
Firm Registration No. 143
2615 Calder Avenue, Suite 111
Beaumont, Texas 77702

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P R O C E E D I N G S

LIEUTENANT COLONEL ERICKSON: Good morning, ladies and gentlemen. I'm pleased to be here tonight on behalf Colonel Richard Pannell, the risk manager of the Galveston District, U.S. Army Corps of Engineers. I'm Lieutenant colonel Jared Erickson. I'm the deputy commander of the Galveston District. I welcome you to tonight's public meeting concerning the Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Study. For the record, let me state that this public meeting is being convened at 7:00 p.m. on October 6th, 2015, at the John Gray Center, Lamar University, in Beaumont, Texas.

Specifically we are presenting a commission and accepting public comments on the draft, the greater Feasibility Report, and Environmental Impact Statement for this study that was released for public review on September 11th, 2015. The court reporter is here to transcribe these proceedings and all public comments.

The Corps of Engineers and the Texas General Land Office have been conducting a study analyzing potential coastal storm risk management measures that will reduce the risk of tropical storm surge impact to the lives and property in the Golden Triangle and the Freeport area of the upper Texas Gulf Coast.

Seven years ago the region experienced a near-miss from Hurricane Ike that disrupted many lives and resulted in extensive damages in the Sabine and Galveston regions. The Nation came within one foot of an economic depression when the storm surge nearly overtopped existing hurricane flood protection projects in Port Arthur and in Texas City. Had the areas protected by these systems had been flooded, the Nation would have been experience significant disruptions in gasoline and other petrochemical supplies that we all depend upon. A cost effective plan has been identified that we believe would significantly reduce the risk of storm surge impact in the Sabine and Brazoria regions. This plan, which we refer to as the Tentatively Selected Plan, or the TSP, will be described later in this meeting.

I hope that all of you had an opportunity to read the notice of availability either on the Galveston District's website or on the announcements that were mailed to individuals and organizations that may have interest in these proceedings. It contains a summary of the Tentatively Selected Plan and its environmental impact.

Before we go any further, I would like to introduce a representative of the Texas General Land

Office, our study's nonfederal sponsor, Mr. Ray Newby, coastal geologist with the G.L.O.'s coastal resources program. Thank you for being here.

MR. NEWBY: Thank you.

LIEUTENANT COLONEL ERICKSON: At this time would you like to make any statements, Mr. Newby?

MR. NEWBY: I guess I could stand here. I'd just like to say on behalf of Commissioner Bush, we're proud to be partners with the Corps of Engineers on this important project. And, Colonel, you mentioned we've dodged a couple of bullets; but this area has taken on the chance several times and it's just a matter of time before it happens again. So, Commissioner Bush has made it one of his priorities to protect the economic and environmental resources of the Texas Coast, the jewel that it is. Thank you.

LIEUTENANT COLONEL ERICKSON: Thank you.

I would also like to recognize the public officials who are attending tonight: Mr. Fred Jackson, representing Jefferson County; and Mr. James Wolfe representing the city of Orange. Additionally, I would like to introduce those that are here with me from the Corps of Engineers: Dr. Edmond Russo, Galveston District, deputy district engineer for programs and project management; Ms. Sharon Tirpak, Galveston District

project manager for this study; Ms. Sherry Willie, Regional Planning Center. She's with the planning section; Ms. Lauren Kruse, Regional Planning Center, planning lead; and Ms. Janelle Stokes, Regional Planning Center, environmental lead.

Now I'll describe the ground rules and format for tonight's meeting. I hope everyone completed a comment form when they entered the meeting. A comment form is used to provide us your contact information so we can keep you updated on the status of the study. It can also be used to submit a written comment. If you would like to make your comment orally tonight, please make sure that you have indicated your intent on the sign-in sheet at the door. Those wishing to make a comment will be given an opportunity to do so after the presentation. If you prefer not to speak tonight, you may submit your comments in writing by dropping them in the box provided, which you see up there on that divider, or send them to us by mail or e-mail.

Following these opening remarks, Ms. Sharon Tirpak, project manager, will present an overview of this feasibility study. After her presentation, I'll open the floor for public comments. We don't have any federal or state officials here; but had they been here, they would have been requested to make a statement to be recognized

first other than Mr. Newby.

MS. TIRPAK: We have Winston Denton from the Parks & Wildlife.

MR. DENTON: Texas Parks & Wildlife.

LIEUTENANT COLONEL ERICKSON: I'm sorry, sir.

Next, representatives from federal and state resource agencies wishing to make a statement will be called upon. Then I'll recognize each individual as indicated if they wish to make a comment.

At this time I don't think we've established a limit for comments given the size of the audience, but we do have the room until 8:30. So, that will be the driving force behind that.

I would like to emphasize that this will not be a question-and-answer session. This meeting is to provide everyone with an opportunity to publicly comment on the plan. Please give all speakers the courtesy of not making any comments during their presentation. Turn off your cell phones and hold all applause or other reactions so that we can have an orderly meeting and be respectful of everyone's time. All individuals have an equal right to be heard.

Now, I would like to present Ms. Sharon Tirpak to make our presentation.

MS. TIRPAK: Thanks, everyone, for coming out tonight. We're going to talk about the Sabine Pass to Galveston Bay study for coastal storm risk management and ecosystem restoration.

(SLIDE PRESENTATION)

MS. TIRPAK: Next slide.

We're here to present the Tentatively Selected Plan -- or you'll hear me refer to it as the TSP in the presentation -- and to gather your comments on the plan and its environmental impacts. This is a Tentatively Selected Plan based on a preliminary engineering design and tentative alignment. The TSP is being reviewed concurrently by the public, internal Corps of Engineers, and independent technical reviewers, and Corps headquarters. The plan may change in response to these comments and technical issues identified during the final feasibility analysis.

Since 1854, 61 tropical storms have hit the upper Texas coast. Certainly the most recently -- recent one is the 2008 Hurricane Ike. It was the third most destructive in U.S. history with 112 deaths, thousands of homes destroyed, and 29 billion in losses.

In this area, also especially Hurricane Rita, in 2005, 111 deaths mainly attributed to incidents during the mass of evacuation, and 10 billion in losses.

And then there was Tropical Storm Allison, which was in the Houston area.

And certainly one of most historic storms in the Texas Coast, and even in the country, the 1900 storm was 6,000 deaths and 20 million in losses.

So, a congressional study background, a congressional resolution gives the Corps the authority to study and recommend projects to reduce the risk of surge damages in this region. And our mission and authorities do not allow us to address wind-related impacts.

The study is being conducted by the Corps in conjunction with our non-federal study sponsor, the Texas General Land Office. The purpose of the study is to evaluate vulnerability to storm surge impacts in the upper six counties in the Texas Gulf Coast and to develop projects that reduce the risk of storm surge impacts to people, infrastructure, the economy, and the environment.

For this study the scope was ultimately reduced to focus on CSRM and projects in the Sabine and Brazoria regions. So, as originally scoped, the study covered all six counties and recommended projects for three regions shown here: The Sabine, the Galveston, and the Brazoria region.

Let me turn this off.

The Sabine region, the Galveston region, and

Brazoria region.

However, the level of effort and associated risk for the large and complex regional study was determined to be too high. And it was agreed that this study would focus on recommending CSRM solutions for the Sabine and Brazoria regions only.

The coastal service management solutions for the large and extremely complex Galveston Bay region and ER opportunities throughout the six-county area are included in the ongoing and separate coastal Texas feasibility study and the Jefferson County ecosystem restoration study.

So, the revised study scope includes a programmatic discussion on the entire six-county area and a focus study effort on the Sabine and Brazoria region. The cost of the study is $4.4 million. And the time frame to complete it is 3.9 years.

The coastal storm risk management problems have been evaluated and a TSP developed for the Sabine region, which is the Orange and Jefferson counties and the Brazoria region, which is the Freeport area.

This is Hurricane Ike surge impact in the Orange and Jefferson counties. After Hurricane Ike a study was commissioned by Orange County to evaluate potential solutions for surge impacts like those caused by

Hurricane Ike. The study found that the surge generated by the storm caused widespread flooding in industrial, commercial, and residential areas of Orange County. The cities of Orange, Bridge City, West Orange, Pinehurst, Vidor, and Rose City, as well as unincorporated areas, suffered extreme damages. Approximately one-third of the city of Orange was flooded, primarily the downtown and commercial districts of the city. Rose City also suffered major damages from the surge that traveled up the Neches River.

Virtually 100 percent of Bridge City was flooded, including most residential and commercial property. The Chemical Row area of Orange County also received major damage, and production stopped -- production stoppage because of Ike's storm surge flooding. Estimates of damages and production losses exceed 500 million.

There were fewer impacts in Jefferson County, due in large part to the higher based ground elevations; and minor damages occurred to the ExxonMobil refinery on the Neches River just south of the city of Beaumont. The Sabine Neches Navigation District reported considerable damages along Taylor's Bayou.

Extensive in Jefferson County, the existing Port Arthur and vicinity, Hurricane Flood Protection

Project really helped this area during Hurricane Ike. Extensive damages would have occurred except for the protection provided by the levee system.

While the existing system performed well, it came close to being overtopped by the surge. The picture on the right was taken -- this one here was taken at Highway 365 after the storm when waters were still very close to the top of the flood wall in that area.

Areas not protected by the existing project were heavily impacted. The image at the bottom is of a barge lying across Highway 73 near Taylor's Bayou.

The Freeport area, on the extreme margin of this storm's effects, experienced tidal flooding up to 6 to 8 feet in areas not protected by the existing Hurricane Flood Protection Project.

Next slide.

The Port Arthur, Texas City, and Freeport Hurricane Flood Protection Projects were built as a result of storm surge damages from Hurricane Carla in 1961. Although it came ashore in Port O'Connor, some of the most dangerous impacts were felt in the Freeport area. Carla was a Category 4 storm when it came ashore with storm surges up to 22 feet. The black and white picture shows the post-storm impact.

In these existing hurricane protection levees,

all of them performed pretty well during the most recent hurricane.

So, within our study process, we have to evaluate a set of alternative plans. Several phases of alternative analysis were conducted during the study.

Shown here is the final array of alternatives that were evaluated to determine the Tentatively Selected Plan.

For the Sabine region, CSRM alternatives developed by the Orange County study were evaluated and plans -- plans which would protected nearly all of Orange County and northern Jefferson County were advanced for further screening.

Structural alternatives included construction of a new levee system in Orange and northeast Jefferson County and improving the existing Port Arthur Hurricane Flood Protection Project. One alternative included construction of a large surge gate in the Neches River with the levee system connecting to the new levee system in Orange County and the existing levee -- the Port Arthur hurricane levee system.

In Brazoria County, improvements to the existing Freeport Hurricane Flood Protection Project were advanced for further screening.

Non-structural alternatives were also

considered, and those which are within the Corps' authority to implement were advanced for further screening.

Next slide.

The Neches River surge gate alternative, I want to talk a little bit about that. It included three components: A new levee and flood wall system along the Sabine River and Sabine Lake, and a large surge gate in the Neches River with levees connecting to the Orange and Port Arthur systems. So, this would be a new levee. There would be a gate here that would connect to the existing flood protection system.

The Neches River surge gate would need to be large enough to accommodate large oceangoing tankers and other vessels which use the river to access numerous petrochemical facilities in the Port of Beaumont. The channel is currently 40 feet deep, and deepening the channel to 48 feet is authorized.

This alternative was compared to a levee system which protected the same areas to where no surge gate would be needed in the Neches River. The construction cost of the gate was estimated to be about 865 million more than all the levee -- than the all-levee approach. The gate would need to be very large across the Neches River. And large pump stations would also be needed to

prevent upstream flooding while the gate is closed.

In addition, considerable operations and maintenance costs would be needed to maintain and operate the gate into the foreseeable future. For these reasons, the gate was determined not to be cost effective and was eliminated from further screening.

So, on this slide, this shows the final array of alternatives that we have moved past the initial screening; and we have looked at these as we were working toward at the Tentatively Selected Plan.

And, as always in a Corps process, you always address the no action or future without project condition. In the Sabine region we have the new levees, flood walls in Orange and Jefferson counties, and, also, improvements to the existing Port Arthur Hurricane Flood Protection System. And, of course, we always look at non-structural alternatives.

For the Brazoria region alternatives we have the improvements to the Freeport existing Hurricane Flood Protection System and then non-structural alternatives.

So, in Orange and Jefferson counties the CSRM alternative reaches that we evaluated: Costs, economic benefits, and environmental impact of each of the Orange, Jefferson CSRM reaches were compared.

Orange Reaches 1 and 2, which are up here

(indicating). And Beaumont Reach B and C were eliminated from the proposed -- proposed levee system because costs to protect these areas would exceed the economic benefits.

For Orange Reach 1, there was an estimated average annual benefits of 275,000 with an average annual cost of over 2 million. If it were expressed in a benefits to cost ratio, it would be a 0.13. And generally in the Corps process we need at least a 1.0 to retain in the plan. So, the benefits to cost has to at least be unity.

Orange Reach 2 had an average annual benefit of 42,000 and an average annual cost of 1.8 million, with a BCR of 0.02. So, that also fell out.

These were compared to Orange Reach 3, which had and an average annual benefit of 24.7 million and an average annual cost of 14.9, or a BCR of 1.65. And that was Orange Reach 3, which is this entire -- entire reach.

So, the proposed TSP for the Orange, Jefferson Coastal Storm Risk Management is a 27.2 mile long levee and flood wall system that would be constructed from Interstate 10 at the Sabine River, down the west bank of the river, across the north bank of Sabine Lake, up the east bank of the Neches River to the vicinity of the junction of Orangefield Road and Highway 1135. So,

basically that's this area here that I just talked about (indicating).

Surge gates on Adams Bayou and Cow Bayou would need to be constructed where the levee system crosses these bayous. Existing navigation would be maintained during and after construction.

In addition, an 11-mile long levee and flood wall system would be constructed in northern Jefferson County to connect with high ground near the existing Port Arthur Hurricane Flood Protection Project. Protection northwest of this section is not needed because shoreline elevations are sufficiently high. So, this is the proposed levee system in Jefferson County, which would tie into the existing Hurricane Protection System.

The levee flood wall systems would be constructed to a minimum elevation of 11 feet. And elevations during final feasible analysis may result in higher heights of those levees. The alignment as laid out now is tentative, and there's a high likelihood that it will change as a result of public comments and technical reviews. Some residents and structures would likely be impacted by construction of the new system. In the event the project acquires property and displaces residences or businesses, the property would be purchased

at the current fair market value and assistance with moving cost would be provided. Relocations of pipelines and utilities would also probably be required. Relocation costs are a non-federal responsibility.

And here's just a -- for the Port Arthur Hurricane Protection System, here's a listing of the proposed improvements under the Tentatively Selected Plan moving from north to south.

Replacing and raising of railroad and vehicle closure structure and raising 2.3 miles of levee by 1 foot at the north end of the Sabine-Neches Canal. So, that's -- that's in this area (indicating).

Reinforcing the existing I-wall and raising about 1.3 miles of adjacent levee by 1 foot near a tank farm at the south end of the Sabine-Neches Canal.

Reinforcing the existing the I-wall near Valero and raising about a half mile of levee by 1 foot in the Taylor Bayou Basin.

And reinforcing the 8 to 10 foot I-wall and raising about one-third of a mile of levee by 1 foot west of Taylor's Bayou.

Most of the construction activities would occur within the existing project right-of-way.

And, again, this is a tentatively -- a tentative plan. It could change as a result of the ongoing public

and technical reviews. At this time we believe the plan may impact some existing structures.

For the Freeport vicinity area, the proposed TSP from north to south is raising about 2 1/2 miles of levee along North Oyster Creek by 1 to 3 feet. That would be in here (indicating).

Raising about 2 1/2 miles of the east storm levee by 1 foot and constructing a new surge gate and pump station at the mouth of the DOW Barge Canal. Navigation would maintained during the construction. That would be in here (indicating).

Raising about a half mile of levee at the DOW Thumb by 1 foot and installing erosion control and scour protection features on about 3 miles of the levee in this area.

We would also reconstruct about 700 feet of the Tide Gate I-wall, raising it by 1 foot and raising about 4/10 of a mile of adjacent levee by a foot.

And we would reconstruct about a half mile of the Freeport dock floodwall.

Most of the construction activities would occur within the existing project right-of-way. And, again, this is a tentative plan. It could change as a result of the ongoing public and technical reviews. However, at this point, the plan does not impact any existing

structures.

For the environmental impact, based on the Tentatively Selective Plan, the Port Arthur, Freeport plans have negligible environmental impacts that would require no mitigation. The Orange, Jefferson CSRM plan avoids and minimizes wetland impacts to the greatest extent possible. Trade-offs have been necessary to balance environmental impacts against impacts to homes and businesses.

Construction would directly impact about 300 acres of wetlands, marshes, and wetland forests. Indirect fisheries access impacts would occur to about 2,200 hundred acres of marsh in Adams and Cow Bayou floodplains with installation of flood gates at Adams and Cow Bayou.

The value of direct and indirect wetlands impact would have be determined with the Wetlands Value Assessment Model in coordination with resource agencies.

No known hazardous or toxic waste releases, violations, or sites of concern would be affected by the construction.

No significant impacts to cultural resource -- resources are anticipated and no endangered species impacts are expected.

We have developed a Conceptual Mitigation Plan.

An adverse impact on ecological resources resulting from construction of the TSP have been avoided or minimized to the extent practicable.

Further refinements to the plan will occur during final feasible analysis, and efforts will be made to further avoid and reduce these impacts.

Remaining unavoidable impacts will be fully mitigated as required by law.

The wetlands value assessment modeling will be conducted to quantify the benefits of mitigation measures. Selection of potential mitigation sites and modeling of benefits will be conducted in coordination with the resource agencies.

We anticipate that the recommended plan will include impacts to Texas Parks & Wildlife property. We plan to work with Texas Parks & Wildlife so that those impacts will be mitigated on Parks & Wildlife property.

The final mitigation plan will be developed and presented in the final Integrated Feasibility Report and EIS.

So, we have identified some areas where marsh restoration could occur. And that would -- the marsh restoration evaluation areas have been identified in Bessie Heights and Old River Cove vicinities.

Areas targeted for evaluation exclude areas

already identified for beneficial use or mitigation in conjunction with other projects.

Sediments from regular maintenance dredging of the adjacent Sabine-Neches could be used to restore marsh in areas of open water.

For forested wetlands: Areas on the Neches and Sabine Rivers north of Interstate 10 contain large, undeveloped tracts of forested wetlands, including cypress-tupelo swamps and bottomland hardwood -- forest.

We will evaluate the acquisition of long-term conservation of forested wetland areas to mitigate impacts of this project. Additional benefits could be earned by making improvements to the forested wetlands conservation areas, such as improving tidal flows in impounded areas or the removing and controlling invasive species such as Chinese tallow.

So, what does all this cost? These are preliminary cost estimates. Construction would be cost shared 65 percent federal and 35 percent non-federal.

We currently have indications from Orange County and Jefferson County that they would be our non-federal sponsors for the construction of the Orange and Jefferson CSRM plan. And Jefferson County Drainage District No. 7 could also be the sponsor for the Port Arthur vicinity coastal storm risk management.

In Freeport, Velasco Drainage District has indicated an interest in sponsoring improvements to the Freeport vicinity CSRM plan.

And, again, these are preliminary costs. And as we further develop the working up to the recommended plan, these costs will be refined.

So, what are our next steps? The final feasibility analysis, after all of the comments are received from all the concurrent reviews, there could be potential changes in the levee alignment location.

Development of feasibility level engineering design will occur. An analysis of effects of relative sea-level rise could result in increases to the recommended height and width of new Orange, Jefferson CSRM plan, and the Port Arthur and Freeport plans.

The analysis of potential changes in the environmental impact could occur in development of the environmental mitigation and monitoring plan will be finalized.

Now, we wanted to talk a little bit about the relative sea-level change. This table presents a range of estimated increases in sea level by the year 2080 in the Sabine and Brazoria regions. The low, intermediate, and high estimates are based on a landmark National Resource Council study from 1987. The high rate is

within the range predicted by current studies.

In the Sabine region the relative sea-level rise could range from about 1 foot to about 3 and a quarter feet. And in Brazoria, it can range from about three-quarters of a foot to about 3 feet by 2080.

These future projections will be taken into account when developing the levee and floodwall heights for the final recommended plan.

So, our schedule for the study completion is in front of you. This is -- to complete the study, we anticipate releasing the final Integrated Feasibility Report and EIS for State and Agency Review in August of next year. However, we want to say if the public and technical reviews that are ongoing right now result in significant changes to the TSP, another public comment may be warranted. The potential additional comment period is not included in the schedule that you see here. It would delay the completion of the report.

When the final Feasibility Report is completed, notices will be mailed to everyone who has expressed an interest or is an affected landowner, and copies of the final report will be available on the Galveston District website.

We are currently collecting comments. Comments must be submitted by October 26th. And we have an

address where you can submit your comments to; or if you have comments, you can write them down. We have comment forms and a comment box at the back of the room, or you can come up after I'm done and say your comment tonight if you have -- if you have any.

And I believe that's the end of the presentation. Now we'll start the public comment period.

UNIDENTIFIED SPEAKER: Can you leave Slide 26 up.

MS. TIRPAK: Yeah, we can leave Slide 26 up.

LIEUTENANT COLONEL ERICKSON: Okay. For the record, I'm told that no one has indicated on the sign-in sheet that they would like to speak. I would like to offer the opportunity to the representative from the Texas Department. Sir, do you wish to --

MR. DENTON: I didn't bring any prepared comments.

LIEUTENANT COLONEL ERICKSON: Okay. Mr. Jackson?

MR. JACKSON: No. We've made our comments many times.

LIEUTENANT COLONEL ERICKSON: And Mr. Wolfe?

MR. WOLFE: The only concern I would

have -- and I don't know the intimate details about where the study has been thus far. So, it may have been addressed. But we have numerous storm sewer pipes. They're old pipes. They are pipes that were put in by the Navy back during the second World War along the Sabine River. And we can't account for all of them. And occasionally I'll find -- I'll stumble across an old map and see evidence of where one might be. But over the years there's -- there's quite a few storm sewer pipes that connect the storm sewer systems within the city of Orange to the Sabine River and in some cases even Adams Bayou.

Since about 1950 the city of Orange and over three or four drainage studies that I'm aware of -- and I've only been with the city about 17 years. So, some of it is just digging around through old manuals and books and studies. But where they knew that they had these storm sewer pipes that connected to either Adams Bayou or the Sabine River, they provided for a stop log gap of some kind or a flat gate or a closed gate mechanism. So, I would -- I would ask that that be taken into consideration.

And the information I have I'll be happy to share it with anybody. This would be most applicable along -- immediately south of I-10 as you work down

the -- that east bank of the Sabine River -- the west bank -- excuse me -- all the way down into that shipyard. And years ago -- I have an old photograph that years ago that Navy shipyard had its own retaining wall in there for -- for some degree of flood protection.

Thank you.

MS. STOKES: It still shows up on the topo map.

LIEUTENANT COLONEL ERICKSON: Okay. Thank you.

I'd like to offer any members of the general public who wish to make a statement.

(NO RESPONSE)

LIEUTENANT COLONEL ERICKSON: Okay. In conclusion, written comments on the draft of the Integrated Feasibility Report and Environmental Impact Statement must be received on or before October 26th of 2015, the conclusion of the 45-day comment period that began on September 11, 2015.

I'd like to thank the Texas General Land office for their efforts and assistance in preparing for and holding this meeting. I thank you for your attendance and the interest that all of you have shown tonight.

This meeting is adjourned.

(MEETING ADJOURNED AT 7:36 P.M.)

THE STATE OF TEXAS XX

COUNTY OF JEFFERSON XX

I, TAMARA CASTILLE DEROUEN, a Certified Shorthand Reporter, hereby certify that I reported the U.S. Army Corps of Engineers Public Meeting, and that the foregoing 26 pages contain and constitute a true and correct transcript of my shorthand notes taken on October 6, 2015.

To which I certify on this the 23rd day of October, 2015.

TAMARA CASTILLE DEROUEN, Texas CSR No. 3700
Expiration Date: December 31, 2016
Nell McCallum & Associates, Inc.
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ATTACHMENT 6
TRANSCRIPT OF FREEPORT, TEXAS, PUBLIC MEETING

NOTICE OF PUBLIC MEETING
SABINE PASS TO GALVESTON BAY, TEXAS
COASTAL STORM RISK REDUCTION AND ECOSYSTEM RESTORATION
DRAFT INTEGRATED FEASIBILITY REPORT -
ENVIRONMENTAL IMPACT STATEMENT

Interested parties are hereby notified of and invited to attend an open house and public meeting to be conducted by the U.S. Army Corps of Engineers and the Texas General Land Office on:

OCTOBER 8, 2015
OPEN HOUSE 6:00-7:00 PM
PUBLIC MEETING 7:00-8:30 PM

FREEPORT COMMUNITY HOUSE
1300 WEST SECOND STREET, FREEPORT, TEXAS 77541

The meeting will provide an opportunity for all persons to comment on the Draft Integrated Feasibility Report - Environmental Impact Statement. A map showing the meeting location is attached. Written comments must be postmarked by October 26, 2015. The draft document is available at:

http://www.swg.usace.army.mil/BusinessWithUs/PlanningEnvironmentalBranch/DocumentsforPublicReview.aspx

Comments may be mailed or emailed to:

Galveston District, Corps of Engineers
Attn: Ms. Janelle Stokes
P.O. Box 1229
Galveston, Texas 77553
or
Janelle.S.Stokes@usace.army.mil

SABINE PASS TO GALVESTON BAY, TEXAS, COASTAL STORM RISK MANAGEMENT AND ECOSYSTEM RESTORATION STUDY

Public Comment Meeting

October 8, 2015

Freeport, Texas

(Meeting commenced at 7:00 p.m.)

COLONEL RICHARD PANNELL: Good evening, everyone. I appreciate y'all coming out tonight for this public meeting. I'm Colonel Richard Pannell, commander of the Galveston District of the United States Army Corps of Engineers; and we welcome you tonight to today's public meeting concerning the Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Study.

For the record, let me state that this public meeting is being convened at 7:00 p.m. on October 8, 2015, at the Freeport Community House in Freeport, Texas. This evening we're presenting information and accepting public comment on the draft integrated feasibility report and environmental impact statement that was released for public review on September 11, 2015. A court reporter is here to transcribe these proceedings and all public comments.

The Corps of Engineers and the General Land Office have been conducting a study analyzing potential coastal storm risk

management measures that would reduce the risk of tropical storm surge impacts to lives and property in the Golden Triangle and Freeport areas of the upper Texas Gulf Coast.

Seven years ago, the region experienced a near miss from Hurricane Ike that disrupted many lives and resulted in extensive damages in the Sabine and Galveston region. The nation was within a foot of an economic depression when the storm surge nearly overtopped existing hurricane flood protection systems in Port Arthur and Texas City. If the areas protected by these systems had been flooded, the nation would have experienced significant disruptions in gasoline and other petrochemical supplies that we all depend on.

For this study, a cost-effective plan has been identified that we believe would significantly reduce the risk of storm surge impacts in the Sabine and Brazoria regions. This plan, which we refer to as the Tentatively Selected Plan or the TSP, will be described later in the meeting.

I hope that you've all had an opportunity to read the notice of availability, which we

handed out at the table in the back; and you can also get that on our district's website. We have also mailed out announcements to individuals and organizations as well that had a copy of this. It contains a summary of the Tentatively Selected Plan and its environmental impacts.

Before we go any further, I'd like to introduce a representative of the Texas General Land office, our study's nonfederal sponsor, Mr. Ray Newby, Coastal Geologist, with GLO's Coastal Resources Program.

MR. RAY NEWBY: Thank you, Colonel. Thank you very much. I appreciate you folks coming out tonight. On behalf of Commissioner Bush, I'd just like to say we're very supportive of the Corps' efforts and willingness to partner with the land office on these important projects.

The study tonight is just one of many steps that are being taken amongst the General Land Office and the Corps of Engineers to comprehensively address the whole Texas coast to basically look at protecting the economic assets and environmental resources that make

the Texas coast what it is. Thank you very much.

COLONEL RICHARD PANNELL: Thank you, Mr. Newby.

Before we get started here, I do want to recognize the public officials who are attending tonight. We've got Mr. George Tidwell, Chairman of the Board of Supervisors of the Velasco Drainage District. We also have Mr. John Hoss, Commissioner of the Port of Freeport. Good to see you, sir. And we have Jason Hull, Port Engineer, from Port of Freeport; and Colonel Retired, Chris Solis of the Gulf Coast Community Protection and Recovery District. Good to have you here as well. From resource agencies, we have Colleen Roco from Texas Parks and Wildlife. Thank you very much for attending today.

Additionally, I'd like to introduce our team from the Corps of Engineers and I'll start with our chief of project management, Mr. Rob Thomas to my left; and we have Ms. Sharon Tirpak, our project manager for this study. Also in the audience, we've got Mr. Tim Nelson, our chief of real estate. We've got

Mr. Don Carelock, our chief of construction; and we've got Mr. Joe Hrametz, our chief of operations in the back. We also have Ms. Sheri Willey in the far back, our planner, chief of planning section; Ms. Lauren Kruse from our regional planning center or planning league; and Ms. Janelle Stokes, our environmental lead in the regional planning center.

Okay. Let me just talk a little bit about the ground rules here. I'll describe the ground rules and the formats for tonight's meeting. I hope you've had a chance to complete a comment form when you entered the meeting. The comment form is used to provide us your contact information so we can keep you updated on the status of the study. It can also be used to submit a written comment, if you'd like.

And if you'd like to make your comment orally, please make sure that you have indicated your intent on the sign-in sheet at the door. Those wishing to make a comment will be given an opportunity to do so after the presentation. If you prefer not to speak

tonight, you may submit you comments in writing by dropping them in the box provided or you can send them to us by mail or e-mail and that's all located on the joint notice of availability.

Following my remarks, Sharon Tirpak, our Project Manager, was going to present an overview of the feasibility study; and after her presentation, I'll open the floor for public comments. Federal and state officials that have requested to make a statement will be recognized first. Next, representatives from the federal and state resource agencies wishing to make a statement will be called upon; and then I will recognize each individual that has indicated that they wish to make a comment.

I think we'll be good on time tonight, so I'm not overly concerned; but if I get a number for how many folks we have -- do you know how many we have so far?

MS. JANELLE STOKES: About 20 all together.

COLONEL RICHARD PANNELL: 20 comments?

MS. JANELLE STOKES: Oh, no, the number of people to comment, three.

COLONEL RICHARD PANNELL: Okay. So I think we're good on time. So you can, you know, bend our ear as long as you'd like on that; and the meeting will be adjourned at 8:30. So whatever time frame we need between now and 8:30.

Also, we'd like to emphasize that this will not be a question-and-answer session. The meeting is to provide you an opportunity to comment on our project.

Now, I'd like to turn it over to Ms. Sharon Tirpak to make our presentation.

MS. SHARON TIRPAK: Thank you. Good evening. Thank you for joining us. We can go past this title slide.

So the purpose of the public meeting this evening, we're here to present the Tentatively Selected Plan or the TSP and to gather your comments on the plan and its environmental impacts. This is a tentatively selected plan, and it's based on preliminary engineering design and tentative alignment.

The TSP is being reviewed concurrently by the public, internal Corps of Engineers and independent technical reviewers and Corps

headquarters. The plan may change in response to these comments and technical issues identified during the final feasibility analysis.

Since 1854, 61 tropical storms have hit the upper Texas coast and some of the more devastating storms are listed here. Certainly, the one most recent is Hurricane Ike. Hurricane Rita also in this area. Houston with tropical storm Allison; and then we also have the most historic storm of all, the 1900 Storm. And you can see some statistics there on these storms.

A congressional resolution gives the Corps the authority to study and recommend projects to reduce the risk of surge damages in this region. Our mission and authorities do not allow us to address wind-related impacts. The study is being conducted by the Corps of Engineers in conjunction with our nonfederal study sponsor, the General Land Office. The purpose of the study is to evaluate vulnerabilities to storm surge impacts in the upper six counties on the Texas Gulf Coast and to develop projects that reduce the risk of

storm surge impacts to people, infrastructure, the economy and the environment. For this study, the scope was ultimately reduced to focus on CSRM, or Coastal Storm Risk Management, in the Sabine and Brazoria regions.

As originally scoped, the study covered all six counties and recommended projects for the three regions shown here. The Sabine region, which is up here (indicating), the Brazoria region and the Houston-Galveston region. However, the level of effort and associated risk for the large and complex regional study was determined to be too high; and it was agreed that this study would focus on recommending Coastal Storm Risk Management solutions for the Sabine and Brazoria regions only.

The CSRM solutions for the large and extremely complex Galveston Bay region and ecosystem restoration opportunities throughout the six-county area are included in the ongoing and separate coastal Texas feasibility studies as well as Jefferson County ecosystem restoration feasibility study.

The revised site scope includes a

programmatic discussion on the entire six-county area and a focused study effort on the Sabine and Brazoria regions. The cost of the study is $4.4 million, and it will take 3.9 years to complete. The CSRM problems have been evaluated and a Tentatively Selected Plan developed for the Sabine region, which is Orange and Jefferson Counties and the Brazoria region, which is the Freeport area.

Now, after Hurricane Ike, a study was commissioned by Orange County to evaluate potential solutions for storm surge impacts like those caused by Hurricane Ike. This study found that the surge generated by the storm caused widespread flooding in industrial, commercial and residential areas of Orange County. The cities of Orange, Bridge City, West Orange, Pinehurst, Vidor and Rose City, as well as unincorporated areas, suffered extreme damages.

Approximately one-third of the city of Orange was flooded, primarily the downtown and commercial districts of the city. Rose City also suffered major damages from the surge that traveled up the Neches River. Virtually 100

percent of Bridge City was flooded, including most residential and commercial properties. The "Chemical Row" area of Orange County also received major damage and production stoppage because of Ike's storm surge flooding. Estimates of damages and production losses exceed $500 million.

There were fewer impacts in Jefferson County due in large part to higher base ground elevations. Minor damages occurred to the ExxonMobil refinery on the Neches River just south of the city of Beaumont. The Sabine-Neches Navigation District reported considerable damages along Taylors Bayou.

For the existing Port Arthur and vicinity, extensive damages would have occurred to Port Arthur but for the protection provided by the existing Port Arthur and Vicinity Hurricane Flood Protection Project. While the existing system performed well, it came close to being overtopped by the surge.

The picture on the right, this one right here (indicating), was taken at Highway 365 after the storm when waters were still very close to the top of the flood wall in that

area. Areas not protected by the existing project were heavily impacted. The image at the bottom is of a barge lying across Highway 73 near Taylors Bayou.

In Brazoria County, the Freeport area on the extreme margin of this storm's effects experienced tidal flooding up to 6 to 8 feet in areas not protected by the existing Hurricane Flood Protection Project. If you can't see it, the red is the highest inundation. This color here is 2 to 4 feet, and it goes on up (indicating).

The existing Freeport and Vicinity Hurricane Flood Protection Project, Port Arthur, Texas City and Freeport projects were built as a result of storm surge damages from Hurricane Carla in 1961. Although it came ashore near Port O'Connor, dangerous impacts were felt in the Freeport area. Carla was a Category 4 storm with storm surges of up to 22 feet. The black and white pictures show post-storm impacts.

Several phases of alternative analysis were conducted during the study. Shown here is a final array of alternatives that were

evaluated to determine the Tentatively Selected Plan. For the Sabine region, the CSRM alternatives developed by the Orange County study were evaluated and plans which would protect nearly all of Orange County and northern Jefferson County were advanced for further screening.

Structural alternatives included constructing a new levee system in Orange and northeast Jefferson County and improving the existing Port Arthur Hurricane Flood Protection Project. One alternative included construction of a large surge gate in the Neches River with a levee system connecting to the new levee system in Orange County and the existing Port Arthur Hurricane Flood Protection Project.

In Brazoria County, improvements to the existing Freeport Hurricane Flood Protection Project were advanced for further screening. Nonstructural alternatives were also considered and those which are within the Corps' authority to implement were advanced for further screening.

The Neches River gate alternative included three components: New levee/flood wall system

along the Sabine River and Sabine Lake. And that would be up in here (indicating); a surge gate in the Neches River with levees connecting to the Orange and Port Arthur systems; and improvements to the Port Arthur Hurricane Flood Protection Project, which is this blue line (indicating).

The Neches River surge gate would need to be large enough to accommodate large oceangoing tankers and other vessels which use the river to access numerous petrochemical facilities in the Port of Beaumont. The channel is currently 40 feet deep, and deepening of the channel to 48 feet is authorized. This alternative was compared to a levee system, which protected the same areas; and no surge gate would be needed in the Neches River. The construction cost of the gate was estimated to be about $865 million more than the all-levee approach.

Again, the gate would need to be very large to cross the Neches River and the deep navigation channel. Large pump stations would also be needed to prevent upstream flooding while the gate is closed. In addition, considerable operations and maintenance costs

would be needed to maintain and operate the gate into the foreseeable future. For these reasons, the gate was determined not to be cost effective and was eliminated from further screening.

So the final array of alternatives; and what I mean by "final array," these are the alternatives that we looked at to determine what we wanted to be the Tentatively Selected Plan. The No Action Alternative is always an alternative that we look at, and for Brazoria region, we have the Freeport and Vicinity Coastal Storm Risk Management, which includes the improvements to the existing Freeport Hurricane Flood Protection Project; and we will also look at nonstructural alternatives.

In the Sabine region, we have new levees and flood walls in Orange and Jefferson Counties, improvements to the existing Port Arthur Flood Protection Project and then again, nonstructural alternatives.

So the proposed Tentatively Selected Plan for Freeport and vicinity include -- and let me see if I can step through this because there's a bunch of segments here -- the raising of

about two-and-a-half miles of levee along north Oyster Creek by one to 3 feet. So that's up in this area (indicating). Raising two-and-a-half miles of the east storm levee by one foot. Constructing a new surge gate and pump station at the mouth of the DOW Barge Canal. Navigation would be maintained during and after construction. That's down in there (indicating). And raising about a half mile of levee at the DOW Thumb by one foot and installing erosion control and scour protection features on about three miles of levee in this area and that would be down in here (indicating).

Reconstruct about 700 feet of the Tide Gate I-Wall, raising it by one foot and raising about four tenths of a mile of adjacent levee by one foot. And I think that's right in here (indicating). And reconstructing about a half a mile of the Freeport Dock Flood Wall and that's at Port of Freeport.

Most of the construction activities would occur within the existing project right-of-way. And again, this is a tentative plan; it could change as a result of the ongoing public and

technical reviews. However, at this point, the plan does not impact existing structures.

For the Orange and Jefferson CSRM alternatives, costs, economic benefits, environmental impacts of the Orange-Jefferson reaches were compared. Orange Reaches 1 and 2 and Beaumont Reach B and C were eliminated from the proposed CSRM levee system because costs to protect these areas would exceed the economic benefits. And we're talking about this area Orange 1 and Orange 2 and Beaumont B and C (indicating).

Orange Reach 1 had an estimated average annual benefits of $275,000 and average annual costs of over $2 million. If it were expressed in a benefit-to-cost ratio, it would be a 0.13. Generally, a BCR of at least one is needed to retain in a plan. Orange Reach 2 had average annual benefits of $42,000 and an average annual cost of $1.8 million or BCR of 0.02.

These were compared to Orange Reach 3, which have average annual benefits of $24.7 million and average annual costs of $14.9 million or BCR of 1.65. And that's this reach here for Orange Reach 3 (indicating).

So the proposed TSP for Orange and Jefferson includes a 27.2-mile-long new levee flood wall system, which would be constructed from Interstate 10 at the Sabine River down the west bank of the river, across the north bank of the Sabine Lake and up the east bank of the Neches River to the vicinity of the junction of Orangefield Road and Highway 1135. So basically, we're talking -- this is the 27.2-mile-long levee (indicating).

And surge gates on Adams and Cow Bayous would need to be constructed where the levee system crosses these bayous. Existing navigation on the bayous would be maintained during and after construction. So there's two smaller gated structures that are needed on those two bayous. In addition, an 11-mile long flood wall system would be constructed in northern Jefferson County to connect with high ground near the existing Port Arthur Hurricane Flood Protection Project. Protection northwest of this section is not needed because shoreline elevations are sufficiently high.

So Jefferson County, you have 11 miles of new levee system here that would tie into the

existing Port Arthur hurricane system (indicating).

Lastly, one 3.6 mile-long system in the vicinity of the ExxonMobil plant is currently included in the TSP, and we plan to continue to evaluate the facility's existing protection system to determine if additional protection is warranted. The levee/flood wall systems would be constructed to a minimum elevation of 11 feet. Elevations during final feasibility analysis may result in higher final elevations.

The alignment, as laid out now, is tentative. There is a high likelihood that it will change as a result of public comments and technical reviews. Some residences and structures would likely be impacted by construction of this new system. In the event the project acquires property that displaces residents or business, the property would be purchased at the current fair market value and assistance with moving costs would be provided. Relocations of pipelines and utilities will also probably be required. Relocation costs are a nonfederal responsibility.

The proposed TSP improvements for the Port

Arthur protection project, replacing and raising a railroad and vehicle closure structures and raising 2.3 miles of levee by one foot at the north end of the Sabine-Neches Canal. Reinforcing the I-Wall and raising about 1.3 miles of adjacent levee by one foot near a tank farm at the south end of the Sabine-Neches Canal. Here's the tank farm and here's the other reach (indicating).

Reinforcing the existing I-Wall near Valero and raising about one-half mile of levee by one foot in the Taylor Bayou basin area. We would also reinforce the 8- to ten-foot I-Wall and raising about one-third of a mile of levee by one foot west of the Taylor Bayou basin. Most of the construction activities would occur within the existing project right-of-way.

Again, this is a tentative plan; it could change as a result of ongoing public and technical reviews. At this time, we believe the plan may impact some existing structures.

The environmental impacts of the Tentatively Selected Plan, Port Arthur and Freeport CSRM plans have negligible environmental impacts that would require no

mitigation. The Orange-Jefferson CSRM plan avoids and minimizes wetland impacts to greatest extent possible and trade-offs have been necessary to balance environmental impacts against impacts to homes and businesses.

Construction would directly impact about 300 acres of wetlands, including marshes and wetland forests. Indirect fisheries access impacts would occur to about 2200 acres of marsh in Adams and Cow Bayou floodplains with installation of the surge gates at Adams and Cow Bayous. The value of direct and indirect wetland impacts has been determined with the Wetlands Value Assessment Model in coordination with the resource agencies.

No known hazardous or toxic waste releases, violations or sites of concern would be affected by construction. No significant impacts to cultural resources are anticipated. No endangered species impacts are expected.

For, at this point in time, our mitigation plan, adverse impacts on ecological resources resulting from the construction of the TSP have been avoided or minimized to the extent practicable. Further refinements to the plan

will occur during final feasibility analysis, and efforts will be made to further avoid and reduce impacts.

Remaining unavoidable impacts will be fully mitigated, as required by law. The wetlands value assessment modeling will be conducted to quantify the benefits of mitigation measures. Selection of potential mitigation sites and modeling of benefits will be conducted in coordination with resource agencies. We anticipate that the recommended plan will include impacts to Texas Parks and Wildlife property.

We plan to work with Texas Parks and Wildlife so that those impacts will be mitigated on Texas Parks and Wildlife property. The final mitigation plan will be developed and presented in the final integrated feasibility report and EIS.

We have identified some marsh restoration evaluation areas in the Bessie Heights and Old River Cove areas. Areas targeted for evaluation exclude areas already identified for beneficial use or mitigation in conjunction with other projects. Sediments from regular

maintenance dredging of the adjacent Sabine-Neches could be used to restore marsh in areas of open water.

For forested wetlands mitigation, areas on the Neches and Sabine Rivers north of Interstate 10 contain large undeveloped tracts of forested wetlands, including cypress-tupelo swamps and bottomland forest. We will evaluate the acquisition and long-term conservation of forested wetland areas to mitigate impacts of this project.

Additional benefits could be earned by making improvements to the forested wetland conservation areas such as improving tidal flows in impounded areas or removing and controlling invasive species, such as Chinese tallow.

So for preliminary project costs, construction would be cost shared at 65 percent Federal and 35 percent non-Federal. We currently have indications from Orange County and Jefferson County that they would be our non-Federal sponsors for construction of the Orange-Jefferson CSRM plan. Jefferson County Drainage District No. 7 may be the sponsor for

the Port Arthur and Vicinity CSRM plan. Velasco Drainage District has indicated an interest in sponsoring improvements to the Freeport and Vicinity CSRM plan.

The next steps are the final feasibility analysis, and that would include the items listed here. There's potential changes in the levee alignment location based on the comments that we served during the public and technical reviews. So we will go ahead and develop the final feasibility level of engineering. Also, we will do an analysis of effects of relative sea level rise that could result in increases to the recommended height and width of the new Orange and Jefferson plan and the Port Arthur and Freeport plans. Analysis of potential changes and environmental impacts will occur and development of environmental mitigation and monitoring plan.

We did want to cover relative sea level change, and this table presents a range of estimated increases in sea level by the year 2080 in the Sabine and Brazoria regions. The low, intermediate and high estimates are based on a landmark National Research Council study

from 1987. The high rate is within the range predicted by the current studies.

In the Sabine region, relative sea level rise could range from about one- to about three-and-a-quarter feet. In the Brazoria region, it could range from about three-quarters of a foot to about 3 feet by 2080. These future projections will be taken into account in developing the levee flood wall heights for the final recommended plan.

So the schedule for the study completion, we anticipate releasing the Final Integrated Feasibility Report and EIS for state and agency review in August of next year. You can see the concurrent review is ongoing through September, October and November. We should have our recommended plan by January 2016 and the final Chief's report in September of 2016.

If the public and technical reviews result in significant changes to the TSP, another public comment period may be warranted; and the potential additional comment period is not included in this schedule you see here. It would delay completion of the report.

When final feasibility report is completed, notices will be mailed to everyone who has expressed an interest or is an affected landowner; and copies of the final report will be available on the Galveston district website.

So for updates on this study, please visit the Galveston district website at the address shown here; and a copy of this presentation and transcript of today's meeting will be posted on our website. Written comments on the Draft Integrated Feasibility Report and the Environmental Impact Statement can be submitted to us here at the meeting or sent to us by mail or e-mail. All comments need to be submitted by October 26th, and that's the end of the presentation.

COLONEL RICHARD PANNELL: Okay. We'll go ahead and move into the comment period. What I'd ask is: Please give all speakers the courtesy of being quiet during their presentation.

Please turn off your cell phones, hold applause or other reactions so that we can have an orderly meeting; and be respectful of everyone's time. All individuals have an equal

right to be heard.

What we're going to do is: We'll start off with our elected officials, resource agency representatives who wish to make a statement. I currently have a list, so I'll go down the list here.

Our first speaker that I call forward is Mr. George Tidwell from the Velasco Drainage District.

MR. GEORGE TIDWELL: The only thing I think that I'd like to do publicly, we have -- as you know -- as a local sponsor, have dealt with you for several years concerning this because we're one of the bookends of the feasibility study as Velasco Drainage District being a local sponsor.

And as I've commented to almost everybody involved with the Corps in this study, Velasco Drainage District has some concerns about the study; and we would prefer to work with the Corps as we work through those. I will -- Velasco Drainage District will make some public comments in writing. The time is sort of short. 18 days, it's not long to get that all together and read that umpteen-page report, but

we'll do what we can.

But I'd like just to make some general comments that I think y'all can take back. It's nothing that you haven't heard, I think; but our basic primary concern is -- is that the Corps is intransigent in taking the position that a coastal levee be treated like a riverine levee and it just makes common sense to us in the coastal region that as you consider risk analysis, risk assessment, that you treat a coastal levee the same as riverine levee if it's the same. But if the conditions are different, then you treat them different and evaluate it as a coastal.

And y'all know the reason is that a coastal levee has a flood condition that's limited by time. We all know the storm comes in and leaves in a short period of time. It doesn't stay. The flood condition doesn't stay up for six weeks or four weeks or something; it's up in hours.

And so our concern is that the Corps takes the position that it stays in a steady condition, and we disagree with that. We'll continue to work with you to try to resolve

that.

The second comment is -- is that in that same light, we would like the Corps to be more amenable to looking at data that we've used to evaluate our levees and give that a fair evaluation and I'm primarily talking about fragility analysis on the flood slopes of the barge canal. I'm talking about groundwater movement on a sand layer underneath the levee for underseepage; and those, we think, have validity. They're used in the community, and we think that the Corps needs to take a serious look at that and help us evaluate because it does go to risk-based analysis.

And the other final comment I think I'll make is: I think you need to take a very hard look at how you communicate and advertise your public hearings. For instance, I don't see anybody from our local newspaper here -- there may be one that I don't know about, but I don't think so. And it is important that the local community -- the taxpayers -- get the opportunity to hear all of this because they're the one that's paying the bill.

If we end up being a sponsor -- a

partnership -- in this endeavor, then they're going to be footing that bill; and they need to be able to have some comments and make some decisions about whether they want to spend the money to do that based on the assumptions you have made in the study on still water elevation, wave runup, all those kind of things that, to me, based on what I've been told, are rather arbitrary.

So with that, I'll write some public written comments; but we will continue, as a local sponsor, to work diligently with the Corps in trying to resolve these. We're glad that those are tentative recommendations rather than final recommendations, and we look forward to meeting with you and discussing all these in a more technical-type atmosphere. Thank you.

COLONEL RICHARD PANNELL: Thank you, Mr. Tidwell. Next, I call up Mr. Jason Hull from the Port of Freeport.

MR. JASON HULL: I'll try to talk a lot slower than I normally do. I know the stenographer is hard at work over there.

Again, Jason Hull, H-U-L-L, director of engineering in Port of Freeport. 200 West 2nd

Street, 3rd floor, Freeport, Texas 77541. (979)233-2667.

As Sharon mentioned, the flood wall was built shortly after Hurricane Ike, which was September 13th, 2008. The Corps' design had built the flood wall design in 2009 and completed it in 2010 at record speed. The Port, then, objected to the 3-foot-high flood wall under the precedence the dock was built in 1954, one was built in 1957, in 1986 and a piece in 2001.

The section that was built in 2001 is an open-faced-pile-supported dock, and our friends at the Velasco Drainage District commissioned a -- their district engineer did a study that said that the open-faced dock would lift off or in a storm surge, would be raised and come apart, basically.

We are supportive of a design that incorporates some sort of closure like sheet pile driven in front of the dock to close that off with some sort of access panels that we could get in and inspect if we need to so that a wave could not lift that off, as made reference to.

Also, the 4-foot-high wall that is proposed -- currently at 3-foot-high -- I think the proposal is to go another foot higher. We're asking for more removable sections of wall, something that would not impede the loading and unloading of cargo.

Currently, when a linesman has to tie up a ship, he leans over a 3-foot-high wall and has to tie up between eight, 12, ten lines; and it's a whole lot safer on them if there's a removable section that could be quickly, easily deployed in advance of an oncoming storm and then removed when there's no danger of a storm coming, like most of the time.

Also, when you do your final feasibility study, incorporate, please, in the design the cost associated with contract working around ships; our schedules cannot be delayed. It's very important that the ship have priority so that the cargo is unloaded timely and when it leaves, then the contractor can come in and -- just like the wall in 2010 was built that way.

So please consider that in the cost to the contractor premium, standby time. That's all I have. Thank you.

COLONEL RICHARD PANNELL: Thank you, Mr. Hull. Okay. At this point in time, I'm going to start calling on members of the general public. I'd ask when you come up to speak into the microphone and make sure that you identify yourself by your full name and the organization that you represent.

The first member of the public I'd like to call is Mr. James Saccomanno.

MR. JAMES SACCOMANNO: Good evening. Thank you. My name's James Saccomanno. I'm a retired engineer from BASF, and I live in Freeport, 1507 West 10th Street.

And my comment is that the proposal or the plan to raise the levees by one foot seems like a nominal, almost token amount. It's not possible to -- I don't think it's possible to accurately project storm surges. It's essentially making a weather forecast and so it'd seem to me more reasonable to mobilize and spend all that much money to raise the levees to raise them two feet or maybe even higher.

And I know there's reasons why you referred to the one foot, but that just seems like an awful nominal amount for the amount of

investment that's around this area. Anyway, that's my comment. Thank you very much.

COLONEL RICHARD PANNELL: Thank you very much, sir. Okay. Is there anyone else who would like to make a comment? Okay. Since we haven't heard any comments from anyone else, we'll go ahead and conclude this meeting.

Written comments on the Draft Integrated Feasibility Report and Environmental Impact Statement must be received on or before October 26th, 2015, the conclusion of the 45-day comment period that began on September 11th, 2015.

I'd like to thank the General Land Office for their efforts and assistance in preparing for and holding this meeting, and I thank you for your attendance this evening and the interest that you've shown in the project tonight.

This meeting is adjourned.

(Public comment meeting concluded at 7:43 p.m.)


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Pecan St
Mesquite St
Locust St
Old Hwy 36
S Velasco Blvd
W Brazos St
Freeport, TX
W 4th St
S Front St
Caldwell St
De Zavala St
S Avenue A
Google earth
N
600 ft

ATTACHMENT 7
COMMENTS RECEIVED DURING NOI COMMENT PERIOD

From:	Nelson, Charles
To:	Stokes, Janelle S SWF @SWG
Cc:	Williams, Kiley; Wolfe, Adam B
Subject:	[EXTERNAL] Texas Gulf Coast Storm Risk Management Project
Date:	Tuesday, September 15, 2015 12:18:21 PM
Attachments:	ACOE Texas Coastal Storm Risk Managment Project.pdf

Mrs. Stokes,

I am in receipt of the USACE's letter of notice for the above referenced project.

Colonial Pipeline Company owns and operates two large diameter refined product pipelines through the general area of the proposed project and will likely be impacted by the "Jefferson Main New Levee" works and possible the "Orange 3 New Levee". Could your office provide me with a higher detailed map or drawings depicting the locations of these proposed work? Also, an approximate timeline for the start of construction would be helpful to Colonial. Please also share any date(s) for the Public meeting(s). 1 2 3

Thanks,

Charles Nelson

District Right of Way Manager,

Colonial Pipeline Co.

O – 225-570-3011

C – 225-921-1844

F – 770-754-8075

Description: Blockedhttp://www.811marking.com/Images/811_logo_for_sidebar.jpg

Charles Nelson
District Right of Way Manager
Colonial Pipeline Co.

RESPONSE TO COMMENTS

Comment No.	Response
1	More detailed maps were added to the USACE S2G study webpage as requested
2	Construction could not start until the study is completed and approved by USACE (estimated date August 2017), the project is authorized by the U.S. Congress and funding is appropriated. An estimated construction start date cannot be provided at this time.
3	Public meetings were announced on the S2G webpage and published in local newspapers. They were held on October 6, 2015 in Beaumont, Texas and on October 8 in Freeport, Texas.

BASF

The Chemical Company

October 12, 2015
To: USACE Galveston District
Attn: Janelle Stokes

To whom it may concern:

This letter is in reference to the surge gate structure and pump station potentially to be constructed at the mouth of the DOW barge canal in the Port of Freeport. BASF Freeport's barge dock is located in the turning basin, at the very end of this barge canal as it heads northwest. Our dock is used on a daily basis, and consists of two sections; east and west. The east end is primarily used for bringing in two key raw materials that are used for our production units while the west end is used for transferring finished products in and out of our complex.

Basis this, we want to express our concern that there will be little or no interruption with our daily barge traffic and operations at the time this structure is being constructed as well as once it is placed in service. We would like to kindly request further clarification and confirmation that this gate would remain open, and would only be closed in the event of a flooding situation or tidal surge caused by tropical disturbance or a hurricane in this region. We also want to confirm that this surge gate will not create any further dimension restrictions such as the current water depth, air draft, and width of the canal itself will not be compromised that could inhibit our existing draft and beam restrictions. Additionally, in the duration of construction, we would like to make sure that interruption of barge traffic through the canal is kept at a minimum as well as that we receive a timely notice and thorough communication of when traffic would be halted so we can plan accordingly. Another factor would be for planning purposes, we would like to find out how much notice would be given to BASF in the event of this surge gate being closed for a duration of time in the event of a tidal surge or tropical disturbance. 1

We at BASF feel that placing this structure at the mouth of the canal will be a tremendous asset to our community for better protection to all of us, and we greatly appreciate the USACE's involvement with this conception. At the same time we also want to be sure that our marine traffic through the DOW barge canal will not be interrupted or restricted, and we thank you for taking our concerns into consideration.

Kindest Regards,

Morgan T. Campbell
Logistics Coord Sr / Marine Vetting
Phone: +1 979 415-6882 Mobile: +1-979-201-0907 Fax: +1 979 415-6319
Email: morgan.campbell@basf.com
BASF Corporation
602 Copper Road
Freeport, Texas 77541, USA
150 years
BASF - We create chemistry

Morgan T. Campbell
Logistics Coordinator Sr/ Marine Vetting
BASF Corporation
602 Copper Road
Freeport, Texas 77541

RESPONSE TO COMMENTS

Comment No.	Response
1	Every effort will be undertaken by the USACE during construction of the surge gate structure, as much as possible, to not limit or inhibit daily barge traffic through the DOW Barge Canal. The gate will remain open other than possible closure for maintenance practices or for an approaching storm event. Each of these possible closure activities would entail notification to all parties which utilize the DOW Barge Canal. Each of the closure activities will be conveyed from the current local sponsor for the Freeport and Vicinity Hurricane Flood Protection system, Velasco Drainage District. The surge gate will not inhibit usage by any size vessel which currently utilizes the canal. There will not be any draft, air-draft or vessel width restrictions for any existing vessel using the canal. Local industry will be properly notified in order to make proper preparations in the event of the surge gate closure. The amount of notice that would be given to local entities in the event of closure of the surge gate on the DOW Barge Canal is still yet to be determined but can be conveyed to BASF in the future, when this has been defined.

PORT NECHES
TEXAS

1005 Merriman Street Port Neches, Texas 77651
P.O. Box 758 Port Neches, Texas 77651
office 409.727.2182 fax 409.719.4302
www.ci.port-neches.tx.us

October 15, 2015

Department of the Army
Corps of Engineers
Galveston District
Attn: Janelle Stokes
P.O. Box 1229
Galveston, TX 77553-1229

RE: Draft Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Integrated Feasibility Report and Environmental Impact Statement

Dear Ms. Stokes:

The City of Port Neches (City) has reviewed the above referenced document relative to potential impacts on properties owned by the City. Specifically, the City maintains ownership of two (2) tracts abutting the Neches River, Port Neches Riverfront Park and an area of currently undeveloped land (see Attachment I), which, when combined, includes approximately 3,600 feet of shoreline. In reading the Draft Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Integrated Feasibility Report and Environmental Impact Statement (Report), it appears that construction of a levee and/or floodwall has been proposed for the entire length of the City's shoreline. While recognizing the potential need of such a project, the City believes that the contemplated design would be extremely detrimental to both properties. In terms of the Port Neches Riverfront Park, a levee/floodwall would minimize direct public access to the Neches River, require the closure of two (2) public access boat ramps, and eliminate the most aesthetic component of this property. As you may be aware, Port Neches Riverfront Park is the only facility that allows for public access to the Neches River for many miles, both up river and down river. With respect to the City's other property, the proposed levee/floodwall would negate currently on-going revitalization efforts which include a mixture of economic development activities and additional public access to the Neches River. The amount of land necessary for the levee/floodwall would negatively impact the site both in terms of development opportunities and aesthetic appeal. This tract previously included on abandoned refinery and a barge/industrial facility; the City acquired the property and environmentally remediated the area at a cost of approximately $7 million. It has long been the City's intent to redevelop this site with a mixture of commercial, residential, and public improvements.

1

As an alternative to the system/structure included in the Report, the City would respectively propose that the use of existing topographic features be considered. Relative to Port Neches Riverfront Park (see Attachment 2), an existing bluff, located approximately 300 feet from the shoreline, rises to an elevation of 15 feet. It is the City's belief, that the height of this bluff would satisfy the Report's desire criteria in terms storm water protection. Consequently, the City would submit that there is no need for the construction of a levee/floodwall in Port Neches Riverfront Park.

In terms of the City's currently undeveloped tract, again, the City would request that the natural elevation of the existing bluff be utilized. The elevation along Lee Street (see Attachment 3) would appear to satisfy the desired storm surge protection criteria. Please note that the City does recognize that a short segment, approximately 700 feet, along Lee Street would require additional elevation. In conjunction with this proposal, the City would require that any structures built in the area between Lee Street and the Neches River shoreline be elevated to the appropriate height. As such, the City would suggest that a vastly less costly option exists that would achieve the Report's goals while also allowing the planned developed of this area.

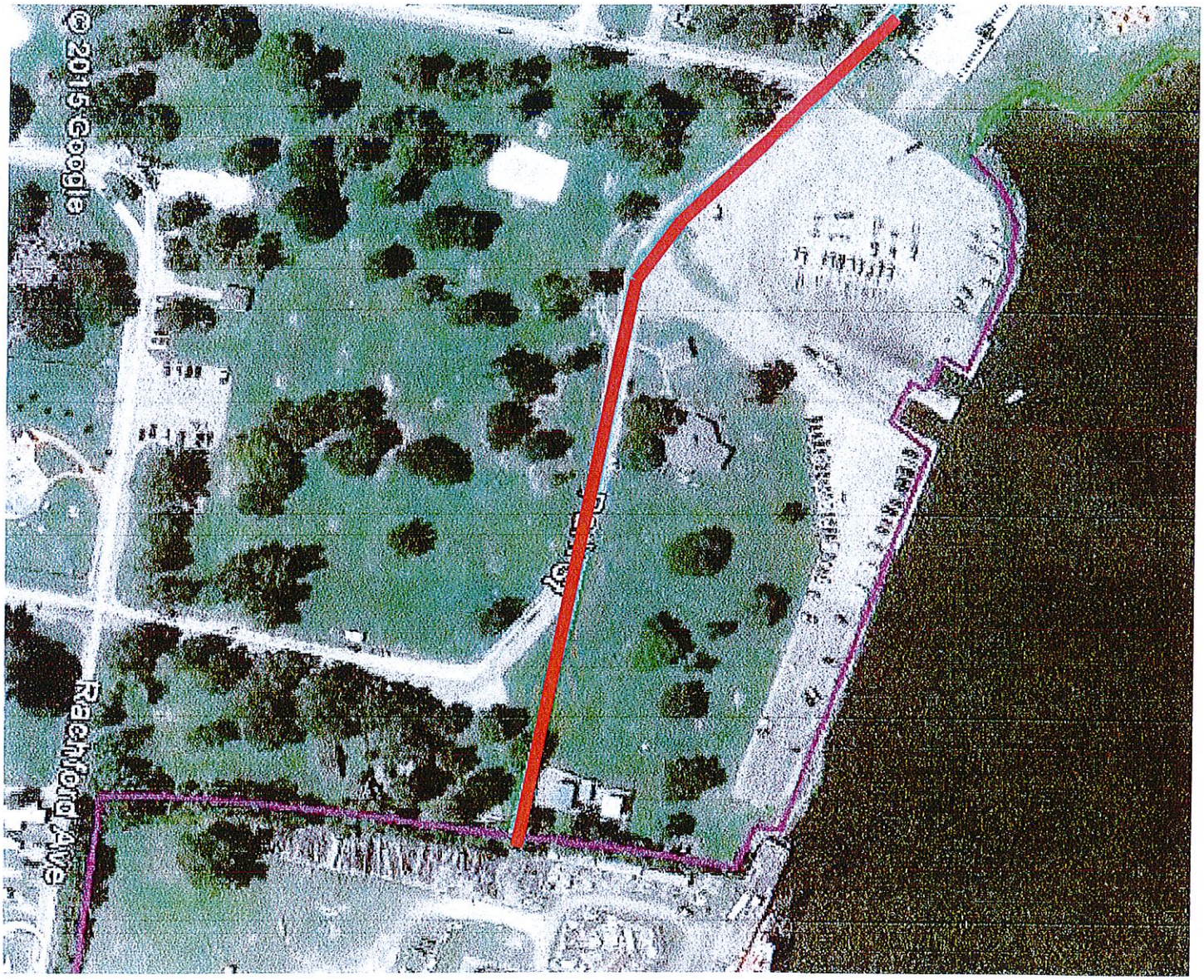
The City respectively submits the above comments in response to the Report. The City is certainly available to meet with representatives of the Corps of Engineers to further discuss this matter. In the interim, should you have any questions or need additional information, please contact Andre' Wimer, City Manager, at (409) 727-2182.

Sincerely,

Glenn Johnson
Mayor

ATTACHMENT 1

ATTACHMENT 2



ATTACHMENT 3

Glen Johnson
Mayor
City of Port Neches
1005 Merriman Street
Port Neches, Texas 77651

RESPONSE TO COMMENTS

Comment No.	Response
1	The final feasibility analysis determined that the proposed levee system within the City of Port Neches was not needed when elevation data was revised in some sections and local preferences for no levee system were taken into account.

Velasco Drainage District

Phone (979) 265-4251 Fax (979) 265-7602
E-mail: vdd@velascodrainagedistrict.com

October 21, 2015

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

Xc: Colonel Richard Pannell, Commander, Southwest District, Galveston; Sharon Tirpak, SWG, Project Lead, Sabine to Galveston Feasibility Study; Scott Leimer, Levee Safety Manager, SWG; Ray Newby, GLO Representative

Subject: Written Comments on Draft Integrated Sabine Pass to Galveston Bay Feasibility Report

Dear Sirs:

The Board of Supervisors of the Velasco Drainage District, Local Sponsor of the Freeport and Vicinity Hurricane Protection System, is submitting the following comments pursuant to the information received at the Public Hearing on Oct 8th in Freeport, TX and subsequent reading of the Draft Report and Appendices.

The first comment is in the form of a suggestion. We would suggest that SWG evaluate and review the Public Hearing notification/distribution procedure. The District became aware of the Public Hearing accidently at a weekly Business Roundtable Breakfast. The breakdown in the notification process subsequently prevented our primary industrial stakeholders and local newspaper from attending the Public Hearing. The District followed up with SWG and local newspaper and is available and welcomes a discussion with SWG Public Affairs to improve the process. It's also our understanding that Jefferson County Drainage District also had some notification issues.

The second comment is to express the District's disappointment, frustration and inability to understand the basis for USACE's intransigence on requiring steady state seepage in evaluation and risk assessment of Coastal Levees. It is an established fact that flood side loading during a Coastal Storm is significantly different than dam and riverine loading scenarios. The SQRA on the Freeport System compiled existing data from the hurricanes making landfall on the Texas coast and determined that flood side loading averaged between 14-18 hrs above 8 ft elevation. Loading at peak of surge averaged between 2-4 hrs. Since the Coastal Levee is not at steady state saturation above the tidal influence, roughly 1-2 ft, the Districts opinion is there is insufficient time during a Coastal Storm to reach steady state and initiate piping sufficient to cause breeching. The District is aware of papers by Shewbridge/Shaeffer, VandenBerge et al 2015, and a recent paper issued by ASCE Journal of Geotechnical and Environmental Engineering, and agree, if the dam/river levee are at or can reach steady state during a flood event, then steady state conditions should be considered. Our position is that a Coastal Levee above the tidal influence is not in steady state when Coastal Storm flood is initiated. In sand layers under the levees

Mail Address
Post Office Box 7
Clute, Texas 77531

Freight and Express
Drainage District Warehouse
915 Stratton Ridge Road
Clute, Texas 77531

that are in steady state, underseepage can be evaluated with established, widely used and accepted USGS models using SEEPW as inputs. These results can be evaluated against USACE Design Guidance for Levee Underseepage ETL 1110-2-569.

A statement was made in the report indicating that several storms, including Ike "nearly overtopped" the Freeport Hurricane Protection System. That is an incorrect statement. The Freeport System has had three major storm events that resulted in flood side loading on the levees, Carla (1961) 10-11 ft; Faye 8 ft; Ike 7 ft., none of which came close to overtopping the levees.

Due to the fact that the Public Hearing was not done in a question and answer format, the District is submitting a series of questions and is requesting responses or answers.

1. Why was there a Public Hearing prior to ATR, IEPR & HQ review since that is normal protocol and most likely would result in changes? 1
2. What methodology was used to determine SWE and Wave Runup? 2
3. What methodology and how was it used to determine changes recommending the raising levee elevations? 3
4. Was there any consideration for changing the line of protection inside Port Freeport? 4
5. Page 5-16; Please explain the "updated Hydraulic modeling" that justifies raising OC levee, specifically what were the changes to model inputs that caused differences from the 2011 FEMA ADCIRC data? 5
6. Pg 5-17; Why is it necessary to replace the 6 gravity structures on OC levee? 6
7. Pg 5-17; Why is it necessary to raise South Levee if dredge disposal sites are higher than levee? The District questions this statement since on site inspection and on Google map, the area between ICWW and South Levee is not dredge disposal areas and is natural ground until it reaches the South Wave Barrier near the Phillips 66 Dock area. Dredge disposal areas are South of ICWW. 7
8. Pg 5-18 --- Old river North – What is justification or basis for A-801 replacement, flood wall replacing levee, etc. Explain how backside scour protection reduces likelihood of brittle failure. What is "brittle failure"? 8
9. Pg 5-20; South Storm Levee was screened from further consideration due to lack of net positive benefits. Why, on Pg 5-17, do you include a recommended levee rise of 1 ft and 2 ft, respectively? These seem contradictory. 9
10. Table .5-9, pg 5-21 "TSP Height 26ft Dow Barge Canal". 5.5 ft higher than Frontal Levee???. Please explain? 10
11. Table 5-10; $114M for gate/pump station. Later in report it is stated this estimate came from a Baker & Lawson 2011 report. Due to that report being a very early preliminary assessment of our levee system, did USACE check or do an independent cost estimate on the gate/pump station structure? If not, why not? Did USACE evaluate any other "gate" alternatives? 11
12. Pg 5-25 Section 5.4.5 Why is it unlikely there will be a LPP? 12
13. On East Storm Levee, Dock Floodwall, Dow Thumb, Tide wall, What is justification for adding all the HFPP on protected side? Is there justification for it from the modeling data? What is the calculated overtopping number and what SWE and Wave Height was used? 13
14. Pg 6-12, 6.2.3 Storm Surge --- "... designers will have to apply current engineering design requirements to....." 14

Does this imply that the "Storm Surge" level for these TSP's and subsequent recommendations has not been determined?

VDD protests the usage of the "high" value of RSLC in these recommendations. As stated in your first paragraph, "... uncertainty and values vary considerably amongst the worldwide community."

15. Pg 6-17 Hydrodynamics and Storm Surge ---- Did you re-run ADCIRC? What inputs were used? Did you use STWAVE for the wave simulations all the way to toe of levee? If so, why did USACE not use shallow wave (Boussinesq, short wave period) models such as COULWAVE or FUNWAVE? The District questions the validity of STWAVE results in water depths less than 10 meters. 15

16. Pg 6-17 6.7.1.2 Bullet 5. "Assumed structure heights based on SWE only." How can you make a TSP without wave runup data. RSLC is just an arbitrary number you add on and overtopping is a result a calculation using SWE and Wave Runup. Did you do that? 16

17. Pg 7.1; Here you state you are using the intermediate RSLC which contradicts your statement under 6.2.3 Storm Surge. Which is correct? 17

18. Pg 7-32, 7.10.3.1 The naming of three different Dow sites needs to be edited. If you would contact Local sponsor, we would help name them correctly. Not sure what you mean by DOW Chemical Shipping. I also believe VDD has a map of the 48 inch pipeline from DOE to Texas City crossing our levee system. Also not sure the intent or meaning of last sentence reading "..., but impacts can occur with storms of great magnitude or when storms spin-up quickly and come ashore with little advance warning." 18

19. In App N --- Your map overlay includes BASF, which is included in the Dow Chemical Company identifying area, and BASF is not listed in your hazardous materials assessment. 19

20. We have not had time to read all the appendices carefully; however, in a cursory reading there did not appear to be any factual backup data as to how these recommendations were determined or justified. Perhaps with a better understanding of how these recommendations were determined, the District could possibly become more comfortable. 20

Respectfully submitted,

George L. Kidwell

George L. Kidwell
Chairman
Velasco Drainage District

George Kidwell
Chairman
Velasco Drainage District
P.O. Box 7
Clute, Texas 77531

RESPONSE TO COMMENTS

Comment No.	Response
1	The new SMART Planning process requires concurrent ATR, IEPR, policy and public review. Changes made in response to comments will be reflected in the Final Feasibility Report. The final report will be released for State and Agency review.
2	ADCIRC and STWAVE were used.
3	See response for comment 2
4	For purposes of this study, this was not taken into consideration.
5	See response for comment 2.
6	The plan has had considerable changes since the TSP. The recommended plan includes replacement of 3 drainage structures due to the recommended raise through one section of the Oyster Creek levee. It is assumed that the drainage structures cannot accommodate this raise and would require replacement
7	This statement will be revised in the report.
8	The recommended plan includes placing a new floodwall in front of the A-801 structure. The structure itself would not be replaced. The wording of this statement will be revised.
9	These statements have been corrected. The recommended plan includes raising a short portion of the South storm levee.
10	This information has since been revised. The section of the DOW Barge Canal which is referenced in this part of the report refers to the far southern end of the DOW Barge Canal South levee, which is at the entrance of the Freeport Navigation channel.
11	This statement has been revised since the TSP. The USACE has since completed an independent cost estimate for this feature.
12	An LPP was not identified for the Recommended Plan. It could be pursued after completion of this feasibility report if a non-Federal sponsor demonstrates interest.
13	The report and plan have since been revised.
14	The report has since been revised. The study uses the intermediate level of RSLC for all features.
15	See response for comment 2.
16	See response for comment 2.

17	The report has since been revised. The study uses the intermediate level of RSLC for all features.
18	Storms can increase in wind speed and strength very quickly in the nearshore environment.
19	The presence of BASF in the project area has been included in our evaluation.
20	The report and appendices have since been revised.

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October 13, 2015

U.S. Army Corps of Engineers, SWG
P.O. Box 1229
Galveston, TX 77553-1229
Attn: Ms. Janelle Stokes

RE: Sabine to Galveston CSRM DIFR-EIS

Ms. Stokes:

This is in response to your invitation to comment on the Sabine to Galveston Coastal Storm Risk Management project DIFR-EIS. My comments are limited to the section inside the boundary of Port Freeport. 1

In 2010, the COE built a 3-foot high floodwall along the precipice of our existing docks. These docks were never designed or intended to be incorporated into a flood protection system. The current design calls for an existing 3-foot high floodwall to be raised by 1-foot for a total wall height of 4 feet. Be aware that a portion of the existing wall was built on top of an open-face, pile supported dock. As I have said, this Dock #5 was never intended to be incorporated into a flood protection system. The Velasco Drainage District has studied and concluded that our Dock 5 will be lifted off of the piles in a 100-year storm and there will be a resulting breach in the flood protection system if corrections to the existing condition are not included in this protect.

The exiting floodwall is also burdensome to port operations. In its present configuration, the wall limits and restricts the types of, and locations that cargo can be handled. The restricted cargo operations has detracted from the benefit of the port to the economy. The wall has also turned out to be less safe for the workers that tie-up the ships as they must now reach over the wall to access the cleats.

In order for the Port to support the 1-foot high floodwall raise, the Port will require that the design incorporate the following elements.

First, a sheet pile system that will close off the open-face portion of Dock 5 to incoming waves, but also is accessible to inspection and maintenance of the structure is needed.

Next, the majority of the wall's construction shall be lightweight, removable, and easily deployable segmented wall sections that can be installed only when storm landfall is imminent.

Lastly, as was done in the construction of the 3-foot high project, the construction operations of this project shall not interfere with port operations and handling of cargo. No construction will be allowed while vessel operations are ongoing.

Sincerely,

Glenn A. Carlson
Executive Port Director/CEO
Port Freeport

/mab
cc: Jason Hull, Director of Engineering

Glenn A. Carlson
Executive Port Director/CEO
Port Freeport
200 W. Second St.
Freeport, Texas 77541

RESPONSE TO COMMENTS

Comment No.	Response
1	The Recommended Plan design will address the stated concerns. Industry use of the dock area will not be limited by construction activities for this project.

From: Jennie@exp.net
To: Stokes, Janelle S SWF @SWG
Subject: [EXTERNAL] Sabine pass to Galveston Bay, Texas Coastal Storm Risk Management
Date: Monday, September 28, 2015 2:56:00 PM

Janelle,

As to Orange county, we think this is a good project. However, from view the available proposed alignment sheet we do have questions and potential problems as the levee appears it will cut through a piece of our property crossing two access roads. How would this be handled? 1

R.E. Odom

Jennie Scalfano

Jennie Scalfano
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P.O. Box 458
Orange, TX 77631-0458

RESPONSE TO COMMENTS

Comment No.	Response
1	The Recommended Plan would provide access through the levee/floodwall system for facilities or parts of facilities located outside of the system. Where the new levee/floodwall cuts off existing access roads, the road would either be raised to go across the levee or a gated closure structure would be installed to maintain access through a floodwall. Additional information can be found in the Engineering Appendix.

From: Lynda Bonsall
To: Stokes, Janelle S SWF @SWG
Subject: [EXTERNAL] DIFR-EIS questions
Date: Tuesday, October 06, 2015 6:40:09 AM

Dear Ms, Stokes,

First let me say I am so glad that a study has been done toward putting a levee system around our area to protect against storm surge. The sooner this comes to fruition, the better. My home is located on Jasmine street in Bridge City. We were the first hit during Ike and received 8 ft. 9 in. of water in my first level of my home. Therefore, you can see why my husband and I are very interested in the construction of a levee system. That being said, here is a list of questions I have for you:

Why only 12 ft. in height? If we get another storm the strength of Ike, it will breach the proposed height. My garage is 8 ft. above sea level. If you do the math it will easily top this height. 1

The water drains south of highway 87 in Bridge City toward the marsh, my back yard. If a levee is there without effective pumping it will become a lake again threatening my house. According to the map the levee will cross less than 100 yards from my back door. Even during a normal rainfall it will be a problem. Where will the pumps be located in Bridge City and how many? Also, what conditions apply toward turning these pumps on? 2

The cost for this system? It seems a mighty low number for 200 miles of construction. I would have thought it to be closer to three or four times that amount. If your going to do this, do it right the first time. Why such a wig wag around Bridge City? What material will be used in the construction of this levee system? 3 4

We depend on the wind from Lake Sabine to keep the mosquitos from us. At the position proposed, the levee will block that flow with no leeway. The mosquitos will get on the leeward side of the levee, my back yard. Could something be done about this position?

We have numerous pipelines running directly behind our home. A plane flies over regularly checking for leaks. Will they support this extra weight, and what about leaks? Would it still be detectable? We have both liquid and gas pipelines. According to the map, the levee will be sitting right on top of them. 5

Please do not take my questions to be in opposition to the levee system. We are for this construction but I do have a number of questions that need to be addressed.

Thanks, Lynda & Jim Bonsall

Lynda and Jim Bonsall
Bridge City, Texas

RESPONSE TO COMMENTS

Comment No.	Response
1	The DIFR-EIS did not present a final plan for the proposed levee/floodwall system; it was a tentative alignment and height that were further during final feasibility analysis. The final proposed levee/floodwall system elevations range from 12.0 to 17.5 feet NAVD88 and include additional height to accommodate predicted relative sea level rise and wave run-up. More specific information can be found in the Engineering Appendix.
2	A plan to provide pumps, culverts and appropriately sized interior drainage has been developed and included in the Recommended Plan. More details can be found in the Engineering Appendix.
3	The cost developed for the FIFR-EIS is based on more information and the Recommended Plan; it is much higher than that estimated in the DIFR-EIS. The cost can be found in the FIFR-EIS Main Report and in the Cost Engineering Section of the Engineering Appendix.
4	The Recommended Plan alignment was sited to avoid impacts to the floodplain and wetlands while also avoiding impacts to homes, industry, pipelines and other development as much as possible.
5	Coordination with pipeline companies will be conducted during the Pre-construction Engineering and Design phase to ensure that the new levee/floodwall system is designed and constructed so as not to adversely impact pipelines.

From:	Karen Reese
To:	Stokes, Janelle S SWF @SWG
Subject:	[EXTERNAL] Sabine Pass to Galveston Bay, Texas Coastal Storm Risk Management and Ecosystem Restoration Project
Date:	Wednesday, September 16, 2015 1:22:36 PM

Hello Ms. Stokes;

My question to the USACE is :

Can you email either an AutoCad 11 file, or a .jpeg or a .pdf version of the following Maps (they were included in the report) our community would like to see a closer view of exactly were the 11'-0" levee will be installed along our borders and we can not clearly identify any landmarks with what was provided in the report. 1

Figure 5-1: Location of Optimization Alternatives in the Orange-Jefferson CSRM Project
Figure 5-4: Orange County Critical Infrastructure
Figure 7-1: Sabine Regions Sub-basins and Drainage's

Thank you for your time and attention to this matter.

Regards,
Karen Reese
karen.reese@basf.com
karen.reese5@gmail.com
(409) 782-4691

Karen Reese
Karen.Reese@basf.com
Karen.Reese@gmail.com

RESPONSE TO COMMENTS

Comment No.	Response
1	More detailed maps were added to the USACE S2G study webpage as requested

From: Tom Harvey
To: Stokes, Janelle S SWF @SWG
Subject: [EXTERNAL] DIFR-EIS
Date: Tuesday, September 29, 2015 9:03:03 PM

I just wanted to take a few minutes to voice my support behind the feasibility of building a levee system to help guard against coastal flooding of areas so devastated by Hurricane Ike. I know such an endeavor is a huge undertaking but could have a monumental return on investment in the event that such a storm struck the location again. I appreciate the fact that authorities are looking into ways to help prevent loss of life and property due to natural disasters. Once again, I wholeheartedly support the project. 1

I appreciate your time.

Tom Harvey
309 Sabine Dr
Bridge City, TX 77611

Tom Harvey
309 Sabine Drive
Bridge City, TX 77611

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for taking the time to provide your position on the proposed project.

From: James Saccomanno
To: Stokes, Janelle S SWF @SWG
Subject: [EXTERNAL] Coastal Storm Risk Management and Ecosystem Restoration Project
Date: Friday, September 11, 2015 1:45:51 PM

Janelle,

The project is a great one ! Press on ASAP. I would like to know what the overall schedule for completion is. 1

Thank You For the Information ! we appreciate your work!

James Saccomanno
1507 W 10th
Freeport Tx 77541

James Saccomanno
1507 W. 10th
Freeport, TX 77541

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for taking the time to provide your position on the proposed project.

From: James Sligar
To: Stokes, Janelle S SWF @SWG
Cc: Jim Sligar
Subject: [EXTERNAL] Request for Information - Bridge City, Texas
Date: Wednesday, September 16, 2015 1:09:34 PM

AGENCY: Department of the Army; Corps of Engineers and Texas Commission on Environmental Quality

Joint Notice of Availability for the Draft Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Integrated Feasibility Report and Environmental Impact Statement

Janelle, I have seen a copy of a September 11, 2015 correspondence provided by your office regarding the above matter. Could you please send me the information? 1

Thanks very much.

Jim Sligar cell 404-316-3769

Jim Sligar
Bridge City, Texas 77611

RESPONSE TO COMMENTS

Comment No.	Response
1	Mr. Sligar was provided the link to the USACE S2G webpage where the DIFR-EIS could be viewed or downloaded.

PM

9-19-15

To Whom It May Concern,

I have been a resident of Bridge City, TX (Orange County) for 35 years. The damage done by Storm Surge from Hurricane Ike inundated our city. What an experience!

A levee system for our town, our community and many other towns would be welcomed tremedously!

Sincerely,

Lorna Wade
385 Holiday St.
Bridge City, TX. 77611
email: ldoone17@att.net

Lorna Wade
385 Holiday Street
Bridge City, TX 77611

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for taking the time to provide your position on the proposed project.

From: wwinstead@gt.rr.com
To: Stokes, Janelle S SWF @SWG
Subject: [EXTERNAL] FIGURE 1 AND FIG 2 CSRM MAPS
Date: Wednesday, September 16, 2015 1:34:49 PM

I LIVE IN ORANGE COUNTY ON THE MARSH NEAR NECHES RIVER. WOULD LIKE TO SEE CLOSER UP OF MAP DRAFT.

THANKS MRS WINSTEAD

11OO HARDY ST
BRIDGE CITY 77611

Mr. Winstead
1100 Hardy Street
Bridge City, Texas 77611

RESPONSE TO COMMENTS

Comment No.	Response
1	More detailed maps were added to the USACE S2G study webpage as requested.

From:	brandtshnfbt@juno.com
To:	Stokes, Janelle S SWF @SWG
Cc:	brandtshnfbt@juno.com; page.williams@gmail.com; oldham_melanie@yahoo.com; art.brownig@gmail.com; elmerz@hal-pc.org; frankblake@juno.com; kenwkramer@aol.com; margot.sierraclub@austin.rr.com; cyrus.reed@sierraclub.org; eva.hernandez@sierraclub.org; baytime@mac.com; sjones@galvbay.org; sharronlstewart@gmail.com
Subject:	[EXTERNAL] Draft Integrated Feasibility Report and Environmental Impact Statement for the Tentatively Select Plan of the Sabine Pass to Galveston Bay C oastal Storm Risk Management and Ecosystem Restoration Project
Date:	Friday, September 11, 2015 8:24:50 AM

Dear Janelle,

Would you please send to me on behalf of the Houston Sierra Club (address below) one CD copy of the Draft Integrated Feasibility Report and Environmental Impact Statement for the Tentatively Select Plan of the Sabine Pass to Galveston Bay Coastal Storm Risk Management and Ecosystem Restoration Project? Thank you. If you have any questions please contact me at the email or phone number below.

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for your interest in the study. A CD was mailed to Mr. Mannchen on September 11 and the link to the USACE S2G study webpage was also provided.

From:	brandtshnfbt@juno.com
To:	Stokes, Janelle S SWF @SWG
Cc:	brandtshnfbt@juno.com; page.williams@gmail.com; art.browning@gmail.com; elmerz@hal-pc.org; frankblake@juno.com; kenwkramer@aol.com; margot.sierraclub@austin.rr.com; cyrus.reed@sierraclub.org; eva.hernandez@sierraclub.org
Subject:	[EXTERNAL] Request by Houston Sierra Club to Extend Comment Period for Sabine Pas s to Galveston Bay Feasibility Study and EIS
Date:	Monday, September 21, 2015 12:10:47 PM

Dear Janelle,

On behalf of the Houston Regional Group of the Sierra Club (Sierra Club) I request from the U.S. Army Corps of Engineers an extension of the public comment period for the Draft Integrated Feasibility Report and Environmental Impact Statement for the Tentative Select Plan for the Sabine Pass to Galveston Bay Coastal Storm Risk Management and Ecosystem Restoration Project. I request a comment extension of 20 days, from October 27, 2015 to November 15, 2015. 1

The Sierra Club needs this additional time to read this extremely large report, appendices, and EIS, make our analyses, assessments, and evaluations, and prepare comments.

The Sierra Club appreciates your consideration of this important issue. Thank you.

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096

RESPONSE TO COMMENTS

Comment No.	Response
1	Thank-you for your interest in the study. USACE considered your request for a time extension, but do not see the need for an extension of comment period at that time.

From:	brandtshnfbt@juno.com
To:	Stokes, Janelle S SWF @SWG
Cc:	brandtshnfbt@juno.com; art.browning@gmail.com; elmerz@hal-pc.org; frankblake@juno.com; kenwkramer@aol.com; margot.sierraclub@austin.rr.com; cyrus.reed@sierraclub.org; eva.hernandez@sierraclub.org; Murphy, Carolyn E SWF @SWG; Tirpak, Sharon M SWG; Willey, Sheridan S SWF @SWG
Subject:	[EXTERNAL] Request by Houston Sierra Club to Extend Comment Period for Sabine Pas s to Galveston Bay Feasibility Study and EIS (UNCLASSIFIED)
Date:	Monday, September 21, 2015 3:18:54 PM

Dear Janelle,

Please tell me why specifically that the Corps has rejected my request on behalf of the Houston Regional Group of the Sierra Club (Sierra Club) for an extension of the public comment period. The email you sent me did not have this information and in fact gave no reason for the rejection of the request for more public comment time for the Sabine to Galveston Report/Appendices/EIS. Failure to provide a specific reason why a public comment extension request has been rejected is not transparent with the public for whom the Corps serves. 1

I just got through printing out over 600 pages of the report/appendices/EIS that is at the heart of this request. This is a lot of very technical information to absorb for a volunteer at the Sierra Club (which is an all volunteer run organization) who is not a professional engineer or coastal scientist. The 45 days, while the minimum that NEPA requires (CEQ regulation) can be extended by the Corps. In the past the Corps and other agencies have extended the public comment period for the Sierra Club for EISs for various projects. If the 20 day period requested by the Sierra Club appears to the Corps to be too much then the Sierra Club would accept a lesser amount of time.

I do not understand why the Corps has turned down the Sierra Club's reasonable request for additional time for the public comment period. I request an explanation.

Brandt Mannchen
Houston Regional Group of the Sierra Club
713-664-5962
brandtshnfbt@juno.com

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096

RESPONSE TO COMMENTS

Comment No.	Response
1	USACE determined that the request for an extension would not be granted because of schedule constraints faced in completing the report. USACE, as part of efforts to reduce the time it takes to complete studies, has required the use of SMART Planning Guidelines in developing study schedules. These requirements, which were codified in law by the Water Resources Reform and Development Act of 2014 (P.L. 113-121, June 10, 2014) were used in establishing a schedule for the completion of this study. USACE also endeavored to reduce the length of the report, while adequately addressing all potential significant impacts of the proposed projects. USACE advised Mr, Mannchen that his request would be kept in mind as the review period progressed and the need to extend the comment period would be reevaluated.

From:	brandtshnfbt@juno.com
To:	Stokes, Janelle S SWF @SWG
Cc:	brandtshnfbt@juno.com; elmerz@hal-pc.org; frankblake@juno.com; kenwkramer@aol.com; margot.sierraclub@austin.rr.com; cyrus.reed@sierraclub.org; eva.hernandez@sierraclub.org; Murphy, Carolyn E SWF @SWG; Tirpak, Sharon M SWG; Willey, Sheridan S SWF @SWG
Subject:	[EXTERNAL] Request by Houston Sierra Club to Extend Comment Period for Sabine Pas s to Galveston Bay Feasibility Study and EIS
Date:	Wednesday, September 23, 2015 4:01:12 PM

Dear Janelle,

Thank you for explaining why the Corps has not granted the Houston Sierra Club's request for an extension of the public comment time period for the Sabine Pass to Galveston Bay Feasibility Study and EIS. In the future, it would be transparent and helpful to the public to know that going into the NEPA process that the Corps has ruled out any extension of the public comment time period. Then the public would know what rules are being applied to its actions and know the reason for the action. 1

Brandt Mannchen
Houston Regional Group of the Sierra Club
713-664-5962
brandtshnfbt@juno.com

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096

RESPONSE TO COMMENTS

Comment No.	Response
1	USACE considers requests for extensions of the public comment time period for Environmental Impact Statements based on the CEQ regulations 40 CFR Part 1501.8.

October 23, 2015

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

Dear Ms. Stokes,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (Sierra Club) for the U.S. Army Corps of Engineers (Corps) Draft Integrated Feasibility Report (FR) and Environmental Impact Statement (EIS) for the Tentatively Selected Plan of the Sabine Pass to Galveston Bay Coastal Storm Risk Management and Ecosystem Restoration Project.

The Sierra Club, for the record, protests that the Corps turned down its September 21, 2015 request (see enclosure) to extend the October 26, 2015 public comment period for 20 days. The Sierra Club request was based upon the length of the document (over 700 pages for the Feasibility Report, Environmental Impact Statement, and Appendices). Even a 7 day extension of the comment period would have been helpful and much appreciated.

However, the Corps initially (see enclosure) turned down the Sierra Club and provided no reason for the rejection ("... but do not see the need for an extension of comment period at this time." See enclosure.). After the Sierra Club sent an email and demanded a reason for the rejection of its request for an extension of the public comment period (see enclosure) the Corps provided a reason ("... because of schedule constraints we face in completing the report." See enclosure.).

Because the Corps rejected the Sierra Club's request for an extension of the public comment period the Sierra Club was not able to read, review, analyze, assess, evaluate, and comment on Appendices F, G, H, J, L, M, N, R, S, and T.

The Sierra Club states for the record that the Corps has not demonstrated that it wants to assist the public in a transparent manner and encourage public participation and comments in the National Environmental Policy Act (NEPA) process as required or encouraged by the Council on Environmental Quality (CEQ) in Sections 1500.1(b); 1500.2(b); 1500.4(f); 1501.2(d)1.; 1501.4(b); 1502.1; 1502.8; 1502.12; 1502.14;Section

1502.19(c); 1503.1(a)4.; 1504.1(c); 1505.1(e); 1505.3(d); 1506.6(a); 1506.6(d); and 1506.6(f). This is a very sad situation.

1) **Page ES-1, Executive Summary (ES), Study Description,** the FR/EIS states a "recommended plan" will be developed for the Final EIS. This means that the public will have no ability to comment, then have the Corps respond to its comments as required by the draft EIS, and then have those comments published so the public can see how the Corps responded with regard to the final "recommended plan". **1**

This removes from the public its ability to review and comment on a "recommended plan". This is not a transparent process to follow and the Sierra Club requests that the Corps put the "recommended plan" out for public review and comment; give at least a minimum of 45 days to review the "recommended plan"; then provide a response to comments for the "recommended plan"; and then publish these responses so the public an see how the Corps responded to public comments.

2) **Page ES-1, ES, Study Purpose and Scope, Pages 1-2 and 1-3, 1.3 Study Purpose and Scope, Page 4-1, 4.1 Problems and Opportunities, Page 7-1, Environmental Consequences, Pages 7-39 and 7-40, 7.13.2 EO 11988 Eight-Step Analysis, All Pages, Draft Appendix A, Measure Information Sheets, Pages 1 and 2, 1.3 Final Array of Alternatives, Draft Appendix C, Economic Analysis, and Pages 1-1 and 2-1 through 2-5,** it is not clear what the Corps means when it says "Because of cost and complexity, the decision was made to include only a programmatic assessment of potential projects in the Galveston region (Galveston, Harris, and Chambers Counties) and potential ER projects throughout the entire six-county study area." The Corps should explain in what sense a "programmatic assessment of potential projects" and "potential ER projects throughout the entire six-county study area" effects NEPA analysis and requirements. **2**

The so-called "programmatic assessment of potential projects" and "potential ER projects" in **Draft Appendix A, Measure Information Sheets,** does not include "all reasonable alternatives" as required by NEPA. The purpose and need statement is so constricted that there is only one alternative, other than No Action, that the Corps analyzes. For instance, there is no alternative that looks at:

a. Have each large industrial facility either improve its existing levee (see **Page 2-19, 2.3.11 Hazardous, Toxic, and Radioactive Waste Concerns,** which refers to above ground tanks, like tank farms) and or construct a levee to protect its property (many companies have excess land where a levee can be built); looks at all of these companies joining together to do this; and or having these companies protect their property using their own money.

b. Have local, state, and federal officials put companies on notice that their fiduciary responsibility to stockholders and their responsibility to the nearby community to be a "good neighbor", not a nuisance", requires that they protect their assets from storm surge and if they do not do this during a storm then it is not an "Act of God" when damage occurs and they will be sued.

c. Certain parts of the coast should have significant buyouts as the best way to go (Bridge City, Gilchrist, Bolivar Peninsula, West Galveston Island, Shoreacres, LaPorte, etc.). There is no alternative that requires that particularly vulnerable areas (mentioned above) protect their public or move them back a safe distance from the Gulf of Mexico or Galveston Bay and that this should be a first step for any storm surge protection plan.

d. The implementation of zoning or protection of the shoreline, within Gulf of Mexico, Galveston Bay, and or other bays to keep these areas undeveloped. There is no alternative that puts protection of the natural shoreline, beach, dune, marshes, and San Luis Pass first rather than looking at these areas after an alternative has been proposed.

e. There is no alternative that results in the creation of a local and or state fund, similar to FEMA's federal floodplain buyout program, that would be available to people before or immediately after a storm so that vulnerable properties could be bought-out at market value when people voluntarily decide that they want to move out of harm's way.

f. There are no alternatives that combine alternatives (structural and or non-structural) in feasible ways to provide for stronger, broader, and more comprehensive results for alternative(s).

g. There are no alternatives that remove all or most subsidies from development of vulnerable areas along the coast so there is not a governmental incentive to build and put people in harm's way.

The Corps has not presented “all reasonable alternatives” as required by NEPA in its “programmatic assessment of potential projects” and “potential ER projects”. Instead the Corps proposes for Galveston Bay, “Ike Dike” and significant parts of “Ike Dike” (elevated highways are the major portion of “Ike Dike”) and other projects in a slightly different, but essentially the same as Ike Dike. The Corps has not done its job. In particular the Sierra Club does not support:

a. **Measure 1, Ike Dike,** the Corps gives an incomplete explanation of environmental impacts including the disturbance of one of the last natural passes on the Upper Texas Coast, San Luis Pass, loss of beach, dune, and marsh habitat in front of the dike, interruption of the sediment movement mechanisms for Galveston Island and Bolivar Peninsula, requirement for perpetual beach re-nourishment, and others.

b. **Measures 3-1, 3-2, and 3-3, Port Arthur, Texas City and Freeport Texas Hurricane Flood Protection,** there is a lack of detailed information about the proposals and mitigation that is required.

c. **Measures 3-4, 3-5, 3-6, 3-7, and 3.8, County-Wide Protection System in Orange and Jefferson Counties,** which would implement huge storm surge protection structures where it is more appropriate to buyout exposed and vulnerable residential and commercial structures.

d. **Measures 3-9, 3-10.1, 3-10.2, 3-10.3, 3-10.4, 3-10.5, and 3-10.6, local surge protection,** for various communities in the Houston Area.

e. **Measures 4-1, 4-2.1, 4-2.2, and 4-2.3, Measure 4-1 and 4-2.2,** are the Ike Dike by another name, and Measures 4-2.1 and 4-2.3, are the Ike Dike extended to Jefferson, Chambers, and Brazoria Counties.

f. **Measure 5-1, Chenier Ridge Restoration,** in Jefferson County this would not work due to climate change and the use of Bermuda Grass would make this a desert for wildlife and native plants.

g. **Measure 5-2, Beneficial Use of Dredged Material for Shoreline Nourishment at Texas Point, Jefferson County,** because there is not enough information about this alternative.

h. **Measures 5-3, 5-6, 5-7, 5-8, 5-11, 5-12, and 5-13, Dune and Beach Restoration at various places,** some of these locations may make sense but there is not enough information about the location and amount of sand available to restore all of these areas in perpetuity. Long-term restoration is in danger due to rising sea level.

i. **Measures 5-5, 5-9, and 5-15, construction of breakwaters at various places,** breakwaters make distribution of sediment via longshore current impossible and San Luis Pass, one of the last natural passes on the Upper Texas Coast, would be modified and disturbed by this proposal.

j. **Measure 5-16, Groin at SH 332, Brazoria County,** this will interfere with longshore current sediment transport.

k. **Measures 6-1.1, 6-2, 6-4.1, 6-5.1, 6-6.1, 6-6.2, breakwaters in various locations,** which would interrupt sediment transport.

l. **Measures 7-1 and 7-2, Shoreline Protection breakwaters for East Bay and Bastrop Bay,** the breakwaters typically interrupt sediment transport.

3) **Page ES-3, Problems and Opportunities and Pages 2-8 and 2-9, 2.3.2 Storm Surge Effects on the Study Area,** the FR/EIS states “Both hurricanes resulted in significant impacts on … forested wetlands” and “as well as downed trees from surge and winds”. These impacts should be presented and discussed. If tree blow down is one of the impacts the Corps should remember that snags (standing dead trees) and downed trees are “biological residuals” that help a forest recover from a “natural disturbance”. They are not inherently bad and in fact are part of the “ecological functions” that the Corps talks about restoring in wetlands. So their presence and function (organic and nutrient sources, erosion control structures, wildlife shelter and food, etc.) and the ecological succession that occurs afterwards are natural and desirable and not bad (impacts). **3**

4) **Page ES-3, Problems and Opportunities and Page 2-8, 2.3.2 Storm Sure Effects on the Study Area,** the FR/EIS fails to state that hurricane storm surge of high salinity water killed, injured, and reduced in number non-native invasive plants like Chinese Tallow. This is a positive effect of storms. Other positive effects are the provision of sites for new vegetation, ecosystem succession, removal or redistribution of excess sediments and organic wastes and nutrients, etc., should be enumerated so the public understands that hurricanes and other storms are "agents of change" which bring both good and bad (in human terms) changes to ecosystems on the coast. **4**

The FR/EIS fails to state that San Luis Pass in one of the last natural passes left on the Upper Texas Coast (see its importance for Piping Plovers mentioned on **Page 2-18, 2.3.8 Threatened and Endangered Species**) and thus it is very important not to alter its current functions via the proposal. The long-term impacts of storms on the environment should be discussed very clearly.

5) **Pages ES-3 and ES-4, Planning Objectives and Page 5-8, 5.4.1 Final Screening Criteria and Page 7-2, 7.1.2 Final Screening Criteria, Draft Appendix B, Plan Formulation,** the only objective that uses the phrase "where feasible" is Objective 3, which deals with coastal habitat. Every other alternative does not have this weakening phrase so that the implementation of Objectives 1, 2, 4, 5, and 6 are not qualified by a phrase that makes implementation less likely. This shows bias by the Corps and less of a commitment to environmental protection, maintenance, and restoration than to economic and human focused financial objectives. Protection of the environment should not be optional in this FR/EIS. **5**

6) **Page ES-4, Planning Objectives,** the FR/EIS states that "reducing life-safety risk is a primary objective of the study". However, the Corps does not conduct a study to determine how much the proposal will induce population growth and increased development in the areas to be armored. A document is used which refers to other states and parts of the United States instead of our area. This is specious reasoning that is not supported by past events.

6

Page 1.3, 1.5 Study Area, Page 4-1, 4.1.1 Problem Statements Page 4, 1.5.1 Project Need, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis, the FR/EIS states that there are five million people that reside in the study area and that 2.26 million of those people, or 45.2%, "live within storm-surge inundation zones". Then the FR/EIS states that in the future there will be nine million people in the next 50 years that will live in the study area. Just using the present 45.2% figure of people that live in the study area (assuming no increase in percent of people that live in the storm-surge portion of the study area) and multiplying this number by nine million means that in 50 years 4,068,000 people will live in the storm-surge portion of the study area (an increase of 1,808,000). More people will be in harm's way and it can no longer be assumed that levees or other structural measures will not fail, since we saw this happen in 2005 in New Orleans with Hurricane Katrina. Using the alternative recommended in the FR/EIS will put more people in harm's way in 50 years and not less. This is in opposition to Objective 2 which calls for a reduction in risk to human life. This proposal does not keep people out of harm's way.

7) **Page ES-4 through ES-6, Formulation of Alternative Plans,** the FR/EIS reports that the Corps cleverly decides that all alternatives, except the one it supports, are not appropriate for some reason(s). This is even though, as mentioned above, that all reasonable alternatives are not considered. This is a sad reflection on the procedure and process used to determine all reasonable alternatives. **7**

8) **Pages ES-6 and ES-7, Future Without Project Condition and Page 3-1, Future Without Project Conditions,** this analysis is not realistic ("... it is assumed that no project would be implemented by the Federal government or by local interests to achieve the planning objective") and is biased since the Corps knows that people will do something to protect their property and lives even if the chosen alternative is not implemented. The Corps should have determined the most likely measures that will be implemented in the next 50 years to address sea level rise, shoreline erosion, and hurricane and storm surge if the chosen alternative is not implemented and then state what these measures are (for instance, zoning and buyouts) and how they affect the objectives. People do not sit idly by and allow themselves and their property to be destroyed. People will either construct some protective measures or implement procedures or will leave the endangered area. **The Corps assumption here is not realistic and should be changed.** **8**

9) **Pages ES-7 and ES-8, Finally Array Evaluation Results and Recommended Plan and Pages 1-4 and 1-5, 1.6 Project Area,** the FR/EIS fails to analyze, assess, and evaluate the impacts of the one alternative (NEPA requires all reasonable alternatives and the Corps is not in compliance with NEPA by evaluating only one alternative other than "No Action" which is required for analysis by NEPA) chosen on nearby areas or parts of this one alternative. For example, all of the human created levees, channels, and other structures in the Freeport area have already caused additional erosion of soil and shoreline and sedimentation in the area (up-coast and down-coast), silting of the San Bernard River outflow to the Gulf of Mexico, loss of soil at state-owned Bryan Beach, and other impacts. When hurricanes or other storms affect the Freeport area storm surge waves will not be able to move inland and dissipate their energy on the beach, marshes, dunes, and other features of the coast because the levees and other structures contemplated or already in place will be in the way. **The impacts on other parts of the Freeport area from further armoring are not discussed or stated. This is a significant deficiency in the FR/EIS.** **9**

10) **Pages ES-8 and ES-9, Public Coordination and Pages 9-1 through 9-3, 9.1 Public Involvement Activities,** the public scoping, etc. was not extensive for the general public. Other than the four scoping meetings the general public, including the Sierra Club, were not invited to "stakeholder briefings" or "resource agency meetings" or had "close communications" with those who want the "Ike Dike" or "SSPEED Center" alternatives. It is particularly inappropriate to include these communications since the Galveston area is not included in this FR/EIS. Another FR/EIS will cover the Galveston area in the future. The Sierra Club considers itself a "stakeholder" but was not invited to briefings. It is not appropriate for the Corps to keep some organizations out of the loop **10**

with regard to information while favoring others. The Corps in summing up what the general public wants said very little about what the Sierra Club comments stated.

11) **Page ES-10, Areas of Controversy and Unresolved Issues,** the Sierra Club disagrees with the Corps that "There are no other controversies or unresolved issues with the study results at this time." These Sierra Club comments state clearly that there are controversies and unresolved issues. 11

12) **Page 1-1, 1.2.1 General Authority and Page 4, 3 Project Authorization, Draft Appendix E, Real Estate,** the Sierra Club does not see any specific "water quality" improvements in this FR/EIS proposed for implementation. 12

13) **Page 1-2, 1.3 Study Purpose and Scope,** the reason this study was expanded and hurried up was due to the response to Hurricane Ike. 13

14) **Page 1-7, 1.10.1 Existing Coastal Storm Risk Management Projects,** it is not clear how long each part of each portion of the one alternative (Orange, Beaumont, Port Arthur, and Freeport areas), will take to construct. In one place in the FR/EIS "three years" is stated but more than three years will be needed to construct all of these projects. The Corps should state clearly how long each project will take to complete in the main body of the FR/EIS so the public knows how much time will elapse between approval and when construction is completed. 14

15) **Page 2.7, 2.3.1 Description of the Ecological Region,** the reference for number of different types of geese is from 1964 (Buller). This reference is 51 years old and many changes have occurred to goose populations and where they reside on the Upper Texas Coast. A newer source of information is needed for this population estimate. 15

16) **Page 2-8 and 2-9, 2.3.2 Storm Sure Effects on the Study Area,** the FR/EIS lacks recent data or documentation for Pre-Ike and Pre-Rita ecological information. 16

17) **Page 2-10, 2.3.3 Attenuation of Storm Surge Impacts by Coastal Wetlands,** the FR/EIS states that "... the model results show that the surge probably increased in height by 1 foot per 8.7 miles of inland penetration because the surge piled up against the levee." The FR/EIS should discuss this scenario and its likelihood with regard to the one alternative that is analyzed that has massive levee and floodwall construction in three locations on the Upper Texas Coast (not to mention Galveston Bay that will have similar proposals in a separate document). 17

18) **Pages 2.10 and 2-11, 2.3.4.1 Sabine Region,** the FR/EIS states that "Remnant dune/beach systems exist along the coastline, although much has been lost through erosion and shoreline retreat, leaving only a low-lying washover terrace." The FR/EIS should also include "sea level rise" as a factor that causes erosion and shoreline retreat. 18

19) **Page 2-13, 2.3.4.2 Galveston Region,** the name of the Scenic Galveston preserve is the "John O'Quinn I-45 Estuarial Corridor" not the "O-Quinn Preserve". The FR/EIS 19

says that “Virginia Point Peninsula Preserve is owned by the GLO”. This is incorrect. Scenic Galveston owns the Virginia Point Peninsula Preserve.

20) **Page 2-20, 2.3.13 Energy and Mineral Resources,** the FR/EIS fails to include fully the costs for moving pipelines, etc., because “In-depth research and surveys would be needed to identify pipelines for detailed pre-construction planning and design”. This means that the costs are underestimated and that the public does not know what the costs of the proposed alternative truly are. **20**

21) **Pages 2-21 and 2-22, 2.3.14 Socioeconomic Considerations,** the FR/EIS verges on “scare-mongering” by reporting how many homes were left standing after stroms. If these areas are that vulnerable then the people should be bought-out so that they are no longer in harm's way. **21**

22) **Pages 3-4 through 3-7, Port Arthur and Vicinity CSRM Project Area and Freeport and Vicinity CSRM Project Area,** local sponsors should fix the deficiencies of their storm surge protection systems. The FR/EIS must state clearly how big a hurricane or storm that each portion of the one alternative (other than No Action) that it analyzes can withstand over the 50 year period. The FR/EIS does not state how many of these storms (strength) each portion of the one alternative it analyzes can withstand. **If the “local sponsor has no current plans to address the risk drivers” then the Corps should not feel obliged to accept this risk and build a project. The local decision-makers have spoken.**

22

The Corps mentions a 130 year event but does not state here how much protection it wants this one alternative to have that it analyzes. If the sponsor has no current plans to address the “structural risk drivers” then the local decision-makers have spoken and the Corps should not feel compelled to bail them out because they are willing to accept the risk by not paying the operation and maintenance costs for protection. If these sponsors cannot guarantee operation and maintenance of the current system of storm protection how will they be able to do so with a more complex and larger system? It is worth noting that the 130 year event system protective capacity that already exists is better than the 100 year event protective capacity that the **Page 3.7, 3.2.1 Initial and Evaluation Array of Alternatives,** is modeled for.

23) **Page 3.9, Orange-Jefferson CSRM,** certain communities could be abandoned (bought-out) but the FR/EIS does not use this alternative as part of the one alternative that is analyzed by the Corps. **23**

24) **Page 3-7 through 3-13, Economic Conditions,** the FR/EIS assumes that all values are estimated correctly and then property will be protected if storm surge is prevented or reduced. This is not accurate since wind causes damage (downed trees, power-lines, damaged roofs that cause rain damage to internal contents of houses, etc.) even if storm surge is prevented or reduced. **24**

25) **Page 3-13 and 3-14, 3.3 Environmental Conditions,** the FR/EIS errs in saying that “tropical storm events, hurricanes … has increased ecosystem vulnerability on the upper Texas coast.” Storms are part of the natural system of disturbance that helps create change in ecosystems, ecological succession, and rejuvenation of ecosystems. Just talking about damage and vulnerability is not ecologically correct. Levees and walls don't help ecosystems. They fragment and alter connectivity between ecosystems and interrupt natural change in ecosystems. **25**

26) **Pages 3-14 through 3-16, 3.4 Life Safety,** it is significant that the FR/EIS does not define “the population at risk and the depth of flooding is evaluated in a risk assessment, which was not performed in this study.” So in reality the public does not know from the FR/EIS what the actual risk is that the proposed alternative is supposed to protect people from. This makes no sense. **26**

27) **Page 3-15, 3.4 Life Safety, Page 44, 2.5.2 Life Safety Considerations, and Page 7-19, 8.1.6 Life Safety, Draft Appendix B Plan Formulation,** the FR/EIS states “Southeast Texas Altering Network”. The Sierra Club assumes the Corps means “Alerting” and not “Altering”. **27**

28) **Pages 3-16 through 3-18, 3.5 Critical Infrastructure, Pages 45-69 2.5.3 Critical Infrastructure, Draft Appendix C, Economic Analysis, and Pages 7-19 through 7-22, 7.1.7 Critical Infrastructure,** it is not clear if the FR/EIS double counts some of the chemical manufacturers and petroleum refineries since Jefferson County is mentioned under two different CSRM's. **28**

The Sierra Club argues that, on a local level, a chemical manufacturing facility and petroleum refinery are not critical infrastructure like roads, schools, hospitals, water treatment plants, waste-water treatment plants, fire departments, and police departments. The FR/EIS should distinguish between what is needed to get people going again locally and what is needed on a larger scale.

29) **Pages 3-18 and 3-19, 3.6 Relative Sea Level Change and Page 5-22, 5.4.3 Comparison of Alternative Plans, Page 7-3, 7.1.1 Final Screening Criteria and Page 7-23, 7.1.8 Relative Sea Level Change, Draft Appendix B, Plan Formulation,** at a minimum the 20, 50, and 100 year sea level rise costs/impacts, which include construction, operation, maintenance, repair, replacement, and financing costs that sea level rise creates, must be covered by the FR/EIS. **29**

30) **Page 4-1, 4.1 Problems and Opportunities and Pages 5-4 and 5-5, 5.3.1 Initial Array of Alternatives,** the FR/EIS states the “Problem and opportunity statements … were initially developed in collaboration with … the affected public.” The Sierra Club was not invited to collaborate with the Corps to develop problem and opportunity statements.

The FR/EIS is confusing because it states that “The following in-depth alternative analyses and recommendations do not include CSRM projects in the Galveston Region **30**

or ER projects throughout the six-county study area" but then goes on to prepare Problem Statements, Opportunity Statements, Planning Goals and Objectives, Planning Constraints, and Evaluation Array Alternatives for the Galveston Region and ER projects for the six-county area. This information for the Galveston Region and ER projects should be placed in their respective documents that will be prepared for those proposals and not in this FR/EIS.

31) **Page 4-2, 4.1.1 Problem Statements,** the FR/EIS states that "If the ridges and marshes disappear, saltwater inundation will result … eliminating the protective buffer." The FR/EIS should state clearly if this process is inevitable. **31**

If the area is a "geologically sand-starved system" then it is important not to prepare ER or other alternatives that require beach re-nourishment every few years which will be very expensive and temporary in nature and not in perpetuity. The FR/EIS should determine whether it is worth fighting nature on the inevitable.

A storm track that was 30 miles away is not "slightly to the south". The FR/EIS should define what it means by "slightly" so the public knows how this term is defined and measured.

32) **Pages 4-2 and 4-3, 4.1.2 Opportunity Statements,** the FR/EIS should tell the public what the risks are to "commercial and residential property, real estate, and infrastructure" and how much these risks will be reduced with the proposed alternative. The FR/EIS should also state how "ecotourism and recreation opportunities" will be enhanced. The FR/EIS should state what the risks are for "evacuation routes" and how much they will be reduced. The FR/EIS should state how much environmental damage will be reduced with regard to refinery infrastructure. The FR/EIS should state how communities will be more resilient. Building walls and levees does not make communities more resilient. Building better housing, utilities, emergency services, etc., are examples of more resilient activities. **32**

33) **Page 4-3, 4.2.2 Public Concerns,** the FR/EIS should do a better job of enumerating public concerns. The ones mentioned are not fully descriptive of what the Sierra Club and others submitted. The Corps should attach the scoping comments of the public so that people know who submitted comments and what these comments said. **33**

34) **Page 4-4 4.2.3 Planning Objectives and Page 4-5, Table 4-1 Sabine Pass to Galveston Bay, Texas Planning Objectives and Measurements and Page7-3, 7.1.3 FWOP Conditions Updates for the Final Array of Alternatives,** the NED and RED appear to cover some of the same economic factors and during the analysis process will double count economic importance and under count environmental importance. There appears to be no requirement that all costs which include construction, operation, maintenance, repair, replacement, and financing costs will all be calculated and revealed completely. Environmental quality appears to be given less consideration than **34**

economic factors. The present risk is not given and how much it will be reduced with the proposed alternative.

The FR/EIS states that "The location of the new levee alignment and the design of the culvert system minimized impacts on wetlands and floodplains, both inside and outside the system, to the greatest extent practicable." It would be helpful for the public to see schematics that document the natural flow of water to wetlands and floodplains and then show how the culvert system will duplicate or mimic this system in areal extent, duration, and magnitude.

35) **Page 4-7, 4.3 Related Project Documents and Page 46, 2.6.2 Sabine Region, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS fails to include the 1979 U.S. Army Corps of Engineers study, **"Feasibility Report, Texas Coast Hurricane Study, Volume I, Main Report, and Volume II, Bay Area Report, Galveston Bay Study Segment," and "Sabine Lake Study Area".** This study covers the entire Texas Coast and should be considered and documented in this FR/EIS as being an important source of information for alternatives. **35**

36) **Page 5-1, 5.1 Plan Formulation Rationale,** the "Acceptability" criteria leaves a lot of room for subjectivity and arbitrariness to bias alternative analysis, evaluation, and assessment. The FR/EIS states that "lines of communication were opened with … the affected public." The Sierra Club was not included in stakeholder briefings that the Corps held. This is not good public outreach. **36**

37) **Pages 5-2 and 5-3, 5.2 Management Measures,** nonstructural measures should also include buying lands in the floodplain and surge area that do not have structures on them so that those lands can never be developed and people will not be put in harm's way.

The Charette does not fully cover criteria that should be used when the evaluation of initial array of alternatives was done. Implementation costs (which is not defined so the public does not know what costs this covers), damages reduced, and environmental benefits are criteria chosen for this evaluation. **However, environmental damages caused by an alternative and financing costs of an alternative are not used as criteria. These two criteria should be added to the evaluation of alternatives process.** **37**

38) **Pages 5-4 through 5-9, 5.3.1 Initial Array of Alternatives, 5.3.2 Evaluation Array of Alternatives, 5.3.3 Scoping of Study under 3x3x3 Guidelines, Final Array of Alternatives, 5.4 Comparison of Final Array of Alternative Plans and Decision Criteria, 5.4.1 Final Screening Criteria, and 7 Environmental Consequences,** the FR/EIS so constricts alternatives that it effectively screens out all but the one alternative that is proposed. This means that "all reasonable alternatives" are not evaluated (or compared) in the FR/EIS and that only one alternative, plus the No Action alternative, is analyzed, assessed, and evaluated in the FR/EIS. This does not meet the spirit and letter of NEPA and Council on Environmental Quality (CEQ) regulation/rules.

CEQ regulation/rules, **Section 1502.14 Alternatives including the proposed action,** state that "This section is the heart of the environmental impact statement … it should present the environmental impacts of the proposal and the alternatives **in comparative form,** thus sharply defining the issues and providing a clear basis for **choice among options** … (a) Rigorously explore and objectively evaluate **all reasonable alternatives** … (b) **Devote substantial treatment to each alternative** … so that reviewers may **evaluate their comparative merits** … (c) **Include reasonable alternatives not within the jurisdiction of the lead agency".**

Choosing one alternative to analyze (other than the baseline No Action Alternative) emasculates NEPA and is a false choice because there is not only one alternative that meets the **Page 1-2, 1.3 Study Purpose and Scope.** The actual purpose and scope is not given on **Page 1-2, 1.3 Study Purpose and Scope,** since the FR/EIS simply refers to the "Coastal Texas Protection and Restoration Study" authority and says that CSMR projects are the focus. The purpose is not to look at projects but to respond to need(s) like surge protection. The FR/EIS must do a better job of stating clearly what the purpose and need for the projects are. NEPA and CEQ regulation/rules expect more than one alternative so that the **"comparative merits"** of alternatives are provided to the public. The FR/EIS does not do this and is not in compliance with NEPA and CEQ regulation/rules. **38A**

Page 5-5, Table 5-2 Criteria for Screening Initial Array of Alternatives, "sensitive habitat" is not a broad enough criteria to cover the losses that wildlife will incur. "Wildlife habitat" should be used as the criteria. Operation and maintenance impacts should be considered in addition to construction impacts. **38B**

Page 5-5 5.3.2 Evaluation Array of Alternatives, the FR/EIS does not use environmental quality costs to separate alternatives. Therefore, economic factors, "the primary determining factor was cost" are used to the exclusion of environmental costs of alternatives. This is biased analysis. What further biases the analysis is that the public is not given documentation that can be used to compare all alternatives that were dropped with the alternative that was chosen. This action hides from the public what the "comparative merits" are of all reasonable alternatives and ensures that the FR/EIS is not in compliance with NEPA and CEQ regulation/rules. **38C**

Page 5-9, 5.4.1 Final Screening Criteria, the acronym EAD is not found in the "List of Acronyms" at the beginning of the FS/EIS. This must be changed. It is not appropriate that the 20, 50, and 100 year sea level rise scenarios were not used for the EADs. If the RED and OSE objectives, Objectives 4 and 2, are qualitatively discussed there is no way that economic impacts of petrochemical supply related interruptions and reduced risk to human life can be calculated. However, figures on **Page 4-2, 4.1.1 Problem Statements,** of "$60 billion economic loss due to closure of the Houston Ship Channel" are used which biases this FR/EIS. These statements must be removed because they are supposed to be "qualitative" and not "quantitative". **38D**

39) **Page 5-11, 5.4.2.2 Orange-Jefferson CSRM Project Area, Economic Evaluation,** the FR/EIS states that "Fish and wildlife mitigation costs were included in the economic evaluation." The Corps should state what the costs are and what mitigation will be conducted. In other parts of the FR/EIS, mitigation of wetlands is not documented and will be provided at a later time. The FR/EIS should state whether this is true for this alternative. **39**

40) **Page 5-15, 5.4.2.3 Port Arthur and Vicinity CSRM, Economic Evaluation,** the FR/EIS states "Environmental impacts and associated mitigation cost were not needed in the comparison." The Corps should not be arbitrary and capricious about costs. If there are costs they should be reflected in every alternative and each part of an alternative. The public must have this information so that it can review and comment about the adequacy and appropriateness of environmental costs and mitigation for those costs. **40**

41) **Page 5-15, Dow Barge Canal Protection,** the FR/EIS should contain costs for keeping the dead-end barge canal supplied with sufficient dissolved oxygen (D.O.) so that fish kills or suppression of aquatic habitat and organisms does not occur. There is no such mitigation mentioned in the FR/EIS to address this problem. **41**

42) **Page 5-19, 5.4.2.4 Freeport and Vicinity CSRM, Economic Evaluation,** the FR/EIS states "Environmental impacts and associated mitigation cost were not needed in the comparison." The Corps should not be arbitrary and capricious about costs. If there are costs they should be reflected in every alternative and or part of an alternative. The public must have this information so that it can review and comment about the adequacy and appropriateness of environmental costs and mitigation for those costs. **42**

43) **Pages 5-19 and 5-20, 5.4.2.5 Brazoria and Sabine Nonstructural and Page 7-36, 7.1.15 Sabine and Brazoria Nonstructural Buyouts,** the FR/EIS states that "Buyout opportunities in Brazoria are virtually non-existent and very limited in both Orange and Jefferson Counties … The analysis showed the nonstructural buyouts had negative net benefits and any potential buyouts were screened from the analysis." These statements are misleading and biased. There are many structures that could be bought out to reduce storm surge risk in Brazoria, Jefferson, and Orange Counties. **43**

Page 2-21 of the FR/EIS states when referring to damage caused by Hurricane Ike that "Entire cities were inundated with the mud and debris that accompanied the surge. In the small town of Bridge City, only 14 of 3,400 homes were habitable after the storm". Certainly, a buyout of 3,400 homes would not be insubstantial and it would have positive benefits because any buyouts later, after rebuilding occurs, will be more expensive. The Corps should not bias buyout options in this FR/EIS.

44) **Page 5-20, 5.4.3 Comparison of Alternative Plans, Page 7-34, 7.1.13 Freeport and Vicinity CSRM, South Storm Levee, and Page 19, South Storm Levee Raise, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis**, the FR/EIS states "In the Freeport and Vicinity CSRM project area, all Alternative

Reaches had positive net benefits except the South Storm Levee." If the South Storm Levee reach will be dropped the FR/EIS does not address what happens if this levee fails because it was not strengthened. **44**

Page 5-17, South Storm Levee, states "The south storm levee is a frontal levee that has potential for direct wave impact from the Gulf of Mexico during storm loading." The Corps never discusses what happens if the South Storm Levee fails. The FR/EIS must state what effect this will have on the Freeport and Vicinity CSRM project. Although the Corps states that south of the South Storm Levee there are disposal areas that are as high or higher than the South Storm Levee there is no proposal to consolidate these disposal areas to ensure that they withstand storm impacts. Their failure or erosion could lead to the breach of the South Storm Levee. The FR/EIS must give a complete picture of what happens to the proposal if other structures in the area fail. The impacts must be thorough discussed and mitigated. Just because a levee is tall does not mean that it cannot have weakened areas and cannot fail. Are the disposal areas and South Storm Levee safe?

45) **Page 5-22, 5.4.3 Comparison of Alternative Plans,** no ER projects and their costs were considered important because they were removed from this study as the FR/EIS states, "Objective 3 **(Page ES-3, Objective 3: Maintain and or restore coastal habitat that contributes to storm surge attenuation where feasible for the 50-year period of analysis)** was removed from consideration in this planning study from an ER implementation standpoint. Opportunities to meet these objectives **could be** pursued under different study authorizations."

The Corps admits that there is no guarantee that ER will be pursued merely that it "could be" under some other process. The FR/EIS further states that "The ER objective achieved in this study through avoiding, minimizing … impacts on existing habitats." This is not the same (mitigation) as ER and the Corps is aware of this. Why it would state it in this manner is of great concern. The FR/EIS does not consider the impacts that ER projects can have on protection of people and does not include regular mitigation costs in the project proposals. It is like the "environment" does not exist to the Corps. How shameful and illegal to use NEPA where it does not consider mitigation, costs, and ER. The public must have this information so that it can review and comment on the adequacy and appropriateness of this proposal. The Sierra Club believes this direction for the study is bankrupt, ignores environmental impacts, and mitigation should be in sync with project alternatives. **45**

46) **Page 5-27, 5.4.5 Selection of the Recommended Plan,** the FR/EIS fails to consider non-structural alternatives that move people out of an area (evacuate) if they are elderly, disabled, or lack transportation, move people out of an area who are in good health quicker, etc. These types of non-structural alternatives are much cheaper with a higher benefit-cost ratio than building huge levees and walls.

The reality of the FR/EIS is finally stated here when the FR/EIS says "Most importantly, increased protection would also avoid disruption of significant industrial and manufacturing facilities located in the project area". The FR/EIS never addresses why

these multi-billion dollar corporations cannot and will not protect their assets themselves as required so that stock-holder's interests are protected. The FR/EIS does not address why public money is used for private subsidy, liability, and economic gain. This type of action is crucial to the acceptance of more debt for federal, state, and local governments that have millions, billions, and trillions of dollars of debt. The Corps should ask and answer why is a public subsidy needed when these corporations are able to pay to protect themselves. Failure to invest in protection of assets and safety of the community (the good neighbor policy) makes these corporations unqualified to get public subsidies. The FR/EIS never states why a one foot raise in a levee cannot and should not be paid for by these huge corporations. **46**

47) **Page 5-30, 5.4.5 Selection of the Recommended Plan,** the FR/EIS states "In addition, the current TSP could result in larger future project modifications to account for RSLC in the Orange-Jefferson CSRM project area". This means that this entire FR/EIS is pointless since the public is told that a 1 foot increase is needed but may be required to pay for a 3 foot increase. The public does not know what proposal it should review and comment on. This is arbitrary and capricious since the Corps should decide now what proposal it supports. The FR/EIS states "This expense would be minimal compared to the significant expense of project replacement in the future." This can be said for many projects and makes no sense. Any costs are not "minimal" for taxpayers either locally or federally. **47**

48) **Pages 5-31 through 5-39, 5.4.6.1 WVA Modeling of Alternatives, 5.4.6.2 Orange-Jefferson CSRM Project Area, Table 5-14: Direct and Indirect Wetland Impacts of Orange 1, 2, and 3 Alternatives, 5.4.6.3 Port Arthur and Vicinity CSRM Project Area, and 5.4.6.4 Freeport and Vicinity CSRM Project Area,** the FR/EIS apparently cannot provide impact assessment for all the areas identified as vulnerable to RSLC since it states that it can do this only for "most of the areas". This is not acceptable. The public needs a comprehensive assessment of environmental impacts not an approximation. **48A**

Page 5-33, the FR/EIS does not show what its **flow maintenance plan** is with respect to installation of culverts versus what flows through tributaries right now. The FR/EIS should state what if any tributaries and overflow areas will not be reconnected with culverts, where this happens, and why this happens both inside and outside the levee system. The FR/EIS should state clearly if any freshwater flows and the extent of flows (the area covered) would shrink due to this proposal. **48B**

Pages 5-31 through 5-39, the FR/EIS fails to include cumulative impacts that are due to greater population growth (from 5 million people to 9 million people in 50 years) and greater development that includes more waste-water, hazardous waste, bacteria pollution, air pollution, from just finished and presently expanding refineries and chemical plants and future growth from these facilities and associated businesses. This will occur due to the "false sense of security" that more levees, taller levees, levees covering more area, and other structures will provide. All the Corps has to do is look at when the existing levees were built and what construction occurred after they were built.

Wetlands losses will also be higher due to this increase in population and development but this is not shown on **Table 5-14.** **48C**

Page 5-33, higher tidal inundation does not necessarily improve fisheries since the levees and walls create more fragmentation, less connectivity, the loss of wetlands, the reduction of sediments, organic matter, nutrients, and freshwater in certain areas. Such overly broad and biased statements have no business in an objective FR/EIS. **48D**

Page 5-35, the loss of essential fish habitat (ESH) bottom habitat cannot be mitigated by structures which provide hard bottom habitat in the same area. These are two different habitats and the Corps assumes that it is okay to mitigate "out-of-kind" habitat when this is not the case. Soft bottoms and hard bottoms provide totally different habitat for marine, brackish water, and freshwater organisms. The FR/EIS fails to state that hard bottom habitats may make it easier for invasive species like Zebra Mussels to spread and effect native ecosystems. This is a negative environmental impact that should be acknowledged and analyzed in this FR/EIS. **48E**

Page 5-35, the FR/EIS fails to address light and noise pollution for these alternatives as it should and ignores the cumulative impacts of increased population and development from construction equipment for projects that occur due to the increased population (more air pollution, water pollution, noise pollution, light pollution, etc.).

Page 5-36, the FR/EIS should state plainly how many years it will take (an estimate is fine), from signing the Record of Decision, to build each part of this alternative. The public must know how long they will have to endure impacts (noise, light, air pollution, water pollution, etc.) from the construction of this alternative and what will occur if a storm hits the area before construction is complete. **48F**

49) **Page 6-3, 6.1.1.1 Orange 3 New Levee (11-Foot), Page 6-4, Jefferson Main New Levee (11-Foot), and Page 6-17, Relative Sea Level Change,** the FR/EIS states there is "no provision for future sea level rise, waves on top of the surge level, and additional minimum freeboard for wave overtopping in project design or cost" and "This approach provides information about adjacent impacts but does not include calculation of still water level overtopping." This makes no sense. Such protection should be built into the alternative and cost and environmental estimates should be provided for this level of protection since a proposal without this level of protection would not be safe and appropriate. **49**

50) **Page 6-4, 6.1.1.1 Orange 3 New Levee (11-Foot),** the FR/EIS states "... there are going to be several challenges in implementing this reach of the project that will add considerably to its construction cost." All construction costs, including pipeline and other re-locations, must be part of the estimated cost so the public can see how many tax dollars are required. **50**

51) **Page 6-4, Beaumont A New Levee (12-Foot),** since this proposal will protect ExxonMobil the Corps should ensure that this private, multi-billion dollar corporation **51**

pays for its own protection. There is no need for tax-payer subsidies for additional protection. Exxon/Mobil can take care of itself.

52) **Page 6-5, 8-10-Foot I-Wall Raise (1-Foot) and Page 6-7, Old River Levee Raise at DOW Thumb (1-Foot) and Pages 14, 15, 16, 20, 21, 32, and 33, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS for Port Arthur and Vicinity CSRM Project Area refers to a "brittle failure". The FR/EIS should explain what this is so the public understands what is discussed. **52**

53) **Page 6-6, DOW Barge Canal Protection,** the FR/EIS states about the Freeport and Vicinity CSRM Project Area that "Additional tidal circulation would be provided". The Corps should require, as mitigation for this dead-end canal, additional oxygen be placed in the water to reduce the possibility of fish kills in the in-river aquatic ecosystem. **53**

54) **Page 6-7, DOW Barge Canal Protection,** the FR/EIS fails to provide the cumulative impacts of population growth and development due to implementation of the Freeport Harbor Channel Improvement Project. Cumulative actions with impacts include the widening of State Highway (SH) 36 up to and beyond Waller County (Prairie Parkway). This is a connected and cumulative action with environmental impacts that should be assessed with this FR/EIS. **54**

55) **Pages 6-7 through 6-9, 6.1.3.1 Summary of Environmental Impacts,** in the FR/EIS, for Fish and Wildlife Mitigation, the Corps fails to include cumulative impacts on wetlands and other environmental issues due to other past, present, and future foreseeable actions like the Freeport Harbor Channel Improvement Project, widening of SH 36, and the proposed Prairie Parkway. **55**

56) **Pages 6-9 and 6-10, 6.1.3.2 Summary of Conceptual Fish and Wildlife Mitigation Plan and Page 6-12, 6.3 Real Estate Considerations,** the FR/EIS should explain what "to the extent practicable", "to the greatest extent practicable", and "to the extent possible" mean with regard to mitigation and or real estate. **The fact that the mitigation plan is not complete means the public will not be able to comment on it, get a Corps response back as is required by CEQ NEPA regulation/rules, and be able to review and respond to the Corps response**. This means the public cannot easily make its concerns known and get any feedback from the Corps. **Section 1502.14 Alternatives including the proposed action (f),** requires that the Corps "Include appropriate mitigation measures not already included in the proposed action or alternatives" and **Section 1502.16 Environmental consequences (h),** requires the Corps to provide "Means to mitigate adverse environmental impacts (if not fully covered under Section 1502.14(f)". **56**

57) **Page 6-10, 6.1.4 Historic Properties Mitigation,** the FR/EIS fails to provide a mitigation plan which means the public will never get to review and comment on the mitigation plan and see how the Corps responds back to public comments. This leaves the public out of the process and is not what CEQ requires under **Section 1502.14 Alternatives including the proposed action (f),** that the Corps "Include appropriate

mitigation measures not already included in the proposed action or alternatives and **Section 1502.16 Environmental consequences (h),** requires the Corps to provide "Means to mitigate adverse environmental impacts (if not fully covered under Section 1502.14(f)"; **57**

58) **Page 6-12, 6.3 Real Estate Considerations,** the FR/EIS does not state what the environmental impacts are of borrow areas and excavated material disposal areas and how these impacts will be mitigated. **58**

59) **Page 6-13, 6.3.2 Facility Removals/Utility Re-locations,** the FR/EIS does not include "relocation and modification costs in plan formulation costs". Therefore the public does not know the total cost of the proposal. Even if the Corps does not know the precise costs an estimate can be made and added to other costs so the public has a better idea of how many taxpayer dollars are required for this proposal. Transparency is crucial when using taxpayer dollars and for NEPA. **59**

60) **Page 6-14, 6.4 Operations and Maintenance Considerations,** the FR/EIS states "Operation and Maintenance (O&M) of these facilities would be extensive. The TSP will be a complex system constructed in a marine environment." This is why it is critical to give the public the best estimate possible of how much money it will take to operate and maintain these facilities. Transparency is crucial when using taxpayer dollars and for NEPA. **60**

61) **Page 6-15, 6.6.2 Environmental Quality,** the FR/EIS ignores many cumulative actions and impacts of other projects like deepening of the Freeport channel, expansion of SH 36, construction of the Prairie Parkway as well as the overall population growth and residential, commercial, and industrial development that will occur due to normal growth and due to the "appearance of safety" that this proposal provides for people living in the area. **61**

62) **Page 6-15, 6.6.3 Regional Economic Development Benefits (RED),** it is of concern that the FR/EIS fails to use a quantitative model to determine secondary impacts (benefits other than direct damages) since "This information would be used to support a decision to increase the levee height in any of the project areas in support for RED". This means the public is kept in the dark about how benefits are calculated and how the Corps justifies a bigger project. This information should be provided to the public now so that it can review and comment on its adequacy and appropriateness. **62**

63) **Page 6-15, 6.6.4 Other Social Effects (OSE),** the FR/EIS fails to take into account how the proposal will negatively affect life safety risk by giving people a "false sense of security" about their ability to live in a dangerous area. The the Corps should discuss induced development due to the construction of this proposal and not avoid it and say it does not exist. Large corporations would not invest in or would invest less in refineries and petrochemical plants if they could not get protection from storm surge and other storm impacts. **63**

64) **Pages 6-17 and 6-18, 6.7.1.2 Other Engineering Risk and Uncertainty and 6.7.3 Project Cost and schedule Risk Analysis,** the FR/EIS admits that it has not calculated risk which may lead to additional changes and the raising of the height of the project since "the TSP … will be designed as an entire system to perform at a uniform level". Risk deals with probability and the Corps has not provided any probability information about this proposal in this section. **64A**

The Corps admits that there is "no on-the-ground physical survey data" which means that there could be important considerations that have not been discovered about this proposal The Corps admits that there have been "very limited geotechnical investigations"; that "Decisions are yet to made regarding how high the structures will be raised after factoring in relative sea-level rise, wave run-up, and wave overtopping, and evaluating an LPP could result in a substantial increase in hydraulic loading on the structures and will increase the seepage potential, either of which could significantly change the designs of the levee embankments and flood wall as concerned in developing the TSP"; and that "A Cost and Schedule Risk Analysis will be performed on the plan carried forward for feasibility-level design following the concurrent public review." This means that the public will not have transparency and an opportunity to review and comment on the true costs of the proposal. This is not good public administration. **64B**

LLP is not found in the "List of Acronyms" at the beginning of the FR/EIS. The public must know what acronyms mean that are used in the FR/EIS.

65) **Page 6-20 and 6-21, 6.8.1 Clean Air Act and Pages i through Page 11, Draft Appendix I, Clean Air Act Emissions Modeling, September 2015,** the FR/EIS fails to state how many tons of volatile organic compounds (VOC), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), particulate matter (PM 2.5 and PM 10), lead (Pb), air toxics (like benzene, toluene, xylene, 1,3-butadiene, ethylbenzene, etc.), and carbon dioxide (CO2) and other greenhouse gases that this proposal will emit (air pollution) during construction, operation, maintenance, repair, and replacement activities. This air pollution information can easily be calculated using either emission factors or other appropriate air pollution emissions information. The public must have this information so that it can review and comment on it.

The FR/EIS also does not provide air pollution information (tons/year) for the cumulative actions that will have cumulative air pollution impacts for the air pollutants mentioned above or the population growth and residential, commercial, and industrial development that has occurred in the past and present and that will occur in the foreseeable future for 50 years. Many large corporations with refineries and petrochemical plants affected by this proposal (the proposal will provide protection for these facilities) have recently expanded, are in the process of expanding their production units or other facilities, or plan to expand their facilities. The public must have this information so that it can review and comment on cumulative actions and impacts due to air pollution. **65**

66) **Page 6-21, 6.8.2 Clean Water Act,** the FR/EIS does not have any information about the types of water pollutants and the amount of each individual water pollutant that will be discharged due to this proposal. The public must have this information so that it can review and comment on this issue. Certainly, bacteria, D.O., total suspended solids, total dissolved solids, and other water pollution parameters will be affected or discharged due to this proposal. There is no non-point source water pollution plan outlined in the FR/EIS. The Corps should explain what "to the greatest extent practicable" means in relation to water pollution discharged from this proposal. There is no quantification of water pollution so the public cannot determine the magnitude of the problem. **66**

67) **Page 6-22, 6.8.5 Coastal Zone Management Act,** the FR/EIS does not explain to the public what "maximum extent practicable" means with relation to the proposal and the Coast Zone Management Act. The public must have this information so that it can understand how this proposal is consistent with the Coastal Zone Management Act. **67**

68) **Page 6-23, 6.8.9 Federal Water Project Recreation Act,** there is no analysis provided about how it was determined that the "TSP is not expected to have any long-term effects on outdoor recreation opportunities in the area." This seems like an incorrect statement because the proposal will affect where and when people can canoe, kayak, hike, bird, fish, hunt, etc. safely. The public must have this information so that it can review and comment on the FR/EIS statement of "no long-term effects" on outdoor recreation. **68**

69) **Pages 6-23 and 6-24, 6.8.10 Farmland Protection Policy Act of 1981 and the CEQ Memorandum Price and Unique Farmlands,** the FR/EIS fails to tell the public what "to the greatest extent possible" means with respect to the protection of farmland. The FR/EIS fails to look at cumulative impacts on farmland due to cumulative actions like port, road (widening SH 36 and the Prairie Parkway), and other projects and increased population growth and residential, commercial, and industrial development that occurs for all past, present, and future foreseeable actions and the induced development that this proposal will cause for the next 50 years. **69**

70) **Page 6-24, 6.8.11 Executive Order 11988, Floodplain Management,** the FR/EIS states that "The TSP does not support direct or indirect floodplain development within the base floodplain." That is exactly what this proposal does. This proposal gives the appearance that it is safer to live in the project area so that people will develop and live on properties because there is a huge wall/levee around those properties that is supposed to reduce the possibility of storm surge. Cumulative actions will also affect this proposal by an increase in population growth (from 5 million to 9 million) and increased development (more industrial and other development, which is occurring right now and is planned for the future). **70**

71) **Page 6-24, 6.8.12 Executive Order 11990, Protection of Wetlands and Page 9, 5.8 Mitigation, Draft Appendix E, Real Estate and Page 7-24, 7.1.10 Economic Evaluation,** FR/EIS states that the Orange-Jefferson CSRM Plan would convert 400

acres of wetlands to a levee system. The damage is much greater than 400 acres. **Page 6-8, Table 6-1: Direct and Indirect Impact (Intermediate RSLC) – Orange-Jefferson CSRM Plan,** says that total impacts are 2,509.3 acres including 124.8 acres of forested wetlands and 2,384.5 acres of coastal marsh that will be destroyed. The Corps must reveal all wetland impacts in this section so that the public knows what they are and can review and comment on them. **71A**

The FR/EIS does not afford "... the public an opportunity for review" because the complete mitigation plan (only a conceptual one) has not been completed. This means the public does not know what mitigation for wetlands loss will ultimately be proposed. This means the public cannot review and comment on the adequacy and appropriateness of the mitigation plan and get a response back from the Corps because the mitigation plan is not finished and has not been presented to the public in the draft FR/EIS. A complete mitigation plan is needed now for the public to review and comment on. **71B**

72) **Page 6-25, 6.8.15 Executive Order, 13186, Responsibilities of Federal Agencies to Protect Migratory Birds and the Migratory Bird Treaty Act,** the FR/EIS states "The effect of the TSP on migratory bird species has been assessed, and no impacts are expected on migratory birds or their habitat in the project area." **This statement is false. The bottomland hardwood forested wetlands and cypress-tupelo swamps that will be destroyed are important areas that birds use to feed and rest when migrating to Mexico, Central, and South America and back to the United States. The marshes that will be destroyed are important habitats for wading birds, shorebirds, ducks, raptors, etc. The Corps should remove this statement and provide a real analysis that looks at all migratory birds, the habitats they use, and how they will be affected by this proposal.** **72**

73) **Pages 7-1 and 7-2, Protected Lands, 7.1.1 Orange-Jefferson CSRM Plan, 7.1.2 Port Arthur and Vicinity CSRM Plan, and 7.1.3 Freeport and Vicinity CSRM Plan,** it is not clear from the description of the alternative whether Texas Parks and Wildlife (TPWD) Wildlife Management Areas (WMA's) will be effected by this proposal. The FR/EIS should state clearly how this proposal will affect TPWD WMA's. This is especially important with respect to connectivity and fragmentation issues. **73A**

Page 7-2, Table 7-1: Impacts on TPWD Property, the column that is labeled "Other" and the row that is labeled "Total" have 8.8 acres as the impact. However, for the Lower Neches River WMA alone there will be 13 acres of losses and for the Tony Houseman WMA there will be an additional 2.3 acres of loss which is 15.3 acres of total losses for these two WMAs. This summation must be changed. The FR/EIS should state if there will be any connectivity or fragmentation issues caused by the Port Arthur and Vicinity CSRM Plan on TPWD lands. The same is true for the Freeport and Vicinity CSRM Plan especially since the Brazoria National Wildlife Refuge (NWR) and Justin Hurst WMA are located just east and west of the boundaries of the exiting Freeport levee system. **It would appear that connectivity and fragmentation issues already exist due to the existing system and will be worse for wildlife and plants with the new proposal.** **73B**

This is a key point. What happens at the end of each structure with regard to water and energy deflection. For Orange-Jefferson, Port Arthur, and Freeport there are natural lands and developed lands just to the east and west of all of these proposed projects. The FR/EIS fails to state what impacts these areas near the levees/flood walls (shorelines, national wildlife refuges, wildlife management areas, residential areas, etc.) will endure as water is deflected back or in another direction toward these areas. The amount of erosion, the location of erosion, the level of storm surge flood water, the location of storm surge flood water should be clearly analyzed so that environmental impacts at the periphery of these three structural projects will be determined and provided to the public for its review and comment. **73C**

74) **Pages 7.3 and 7-4, 7.2.1 Orange-Jefferson CSRM Plan,** the FR/EIS states that "Deepening the channel would allow the saltwater wedge in the deep draft navigation channel to reach further inland and increase salinity in the Lower Neches and Sabine River channels, as well as Sabine Lake." The Big Thicket National Preserve (BTNP), Beaumont Unit, which was expanded south of the original Beaumont Unit, is below the Lower Neches Valley saltwater barrier and already has been exposed to higher salinity levels in 2011 in cypress swamps. In addition, the storm surge could be directed and more focused due to its deflection from levees/walls on this upstream area of BTNP and other properties which could have additional impacts. Modeling of storm surge conditions and their effects on BTNP, Beaumont Unit, should be conducted by the Corps. The FR/EIS is silent about impacts to the BTNP and how the Corps will address these impacts. This is not acceptable. **74**

Pages 7-4, the FR/EIS states that "The relatively high difference in elevation between the floodplain and the uplands will protect most of the developed upland areas from the effects of RSLC for the period of analysis." However, connectivity and fragmentation will exert further pressure on wildlife and plant migration. The FR/EIS must address this issue. **Page 7-5,** the Corps must state what "to the greatest extent possible" means with regard to minimizing flow impacts.

75) **Pages 7.5 through 7-7, 7.2.1.1 Design Accommodations to Minimize Impacts,** the FR/EIS it is not clear how many of the existing tributaries, drainages, and sheet flow areas (overland flow) will be connected using culverts or other mechanisms. The FR/EIS should state specifically how many of these areas there are, how many will be connected via the proposal, and what surface area drainage will be maintained by the proposal. Culverts must be installed so they are at ground level otherwise during low flow times fish and aquatic organisms will be unable to migrate.

When the FR/EIS states that "Hydrologic flows in the FWP conditions would thus be very similar to FWOP flows in location, duration, and magnitude, both inside and outside of the levee system" it should be specific and state how it defines "similar" and describe what "similar" means for each of these conditions (location, duration, and magnitude).

It is not clear what type of erosion and sedimentation the levee and other parts of the proposal will have on waterways and wetlands. This should be clearly described in the FR/EIS which also should state how often "periodic monitoring" will be done to determine the extent and quality of wetlands and freshwater flows. Constriction of the inlet the FR/EIS states will have "minimal impacts on water surface elevation and salinity within the bayous" but there is no discussion about the organic matter, nutrients, and sediment loads and how these will be affected by the construction of inlets or any other part of the proposal. This should be clearly stated in the FR/EIS. The Sierra Club does not believe that a 50% constriction will have beneficial or neutral effects on any waterway that will be affected by such a proposal. It is particularly unfortunate that there is no "operating plan for the gates" **(Page 7-7)** and therefore the public cannot review and comment on its adequacy and appropriateness. **75**

76) **Pages 7-7 and 7-8, 7.2.1.2 Unavoidable Indirect Impacts,** the FR/EIS states "A few localized indirect hydrologic impacts … identified small areas that would be impounded between the new levee and terrace bluff … would indirectly affect a few areas". It would be helpful to the public if the FR/EIS would state how many areas would be affected, show their locations, tell how many acres at each location will be lost or impacted, and state how the proposal affects adjoining areas. **76**

77) **Page 7-8, 7.2.2 Port Arthur and Vicinity CSRM Plan,** the FR/EIS states "with a few isolated wetland areas … such that improvements would have negligible impacts". It would be helpful to the public if the FR/EIS would state how many areas will be affected, show their locations, tell how many acres at each location will be lost or impacted, and state how the proposal affects adjoining areas. The FR/EIS should state clearly what "negligible impacts" equates to with regard to actual impacts so the public can review and comment on the adequacy and appropriateness of the Corps assessment. **77**

78) **Pages 7-8 and 7-9, 7.2.3 Freeport and Vicinity CSRM Plan,** the FR/EIS states "FWOP forecasts of salinity, marsh loss, and related impacts on plant and animal communities in the study area are important in establishing the baseline condition against which FWP impacts are measured". If this is so then the FR/EIS should state in this section what the forecasts are for salinity, marsh loss, and related impacts in the study area and not just refer to them. The FR/EIS ignores the impacts on terrestrial animals and the impacts on aquatic organisms and ecosystems due to poor circulation and low D.O. levels in the DOW Barge Canal. The "some degree of flow constriction" should be stated in percent so the public knows what level of impact is referred to. **78**

79) **Pages 7-10 and 7-11, 7.4.1 Orange-Jefferson CSRM Plan and Pages 7-12 and 7-13, 7.5.1 Orange-Jefferson CSRM Plan,** the FR/EIS should not focus on the intermediate RSLC scenario but should focus on the high RSLC scenario because predictions of sea-level rise have been going up steadily and the melting of glaciers, Greenland Ice Sheet, and Antarctic have occurred much faster than originally thought. **79**

80) **Page 7-11, 7.4.2 Port Arthur and Vicinity CSRM Plan,** the FR/EIS states that "TSP improvements from the Port Arthur CSRM Plan would result in no impacts on

coastal marsh." This statement ignores uplands that the levee will enclose so that marshes cannot retreat landward. 80

81) **Pages 7-12 and 7-13, 7.4.1 Orange-Jefferson CSRM Plan, 7-13, 7.5.2 Port Arthur and Vicinity, and 7.5.3 Freeport and vicinity CSRM Plan,** the FR/EIS fails to estimate the wetlands and other ecosystem losses (in acres) due to the Section 10/404 program and where their approximate locations will be (which can be done by looking at past permit applications) so that this form of cumulative action and impacts along with population growth and increased development (residential, commercial, and industrial) from past, present, and foreseeable future actions (50 years) and impacts will all be assessed, evaluated, and analyzed so all environmental impacts are truly revealed in the FR/EIS. 81

82) **Pages 7-14 through 7-17, 7.6.1 Fish and Wildlife Impacts, 7.6.1.1 Sabine Region CSRM Plans, and Page 137, 5.6 Maintenance of Ecological Continuity With the Surrounding Area and Within the Region, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "This is a small fraction of the tens of thousands of acres of fish and wildlife habitat present in the study area". This statement does not relate to environmental impacts. It does not give respect to those 200.5 acres of natural fish and wildlife habitat, 128.5 acres of forest wetlands and marsh, and 2,384.5 acres of coastal marsh that will be destroyed by this proposal.

This is not a small number of wetlands and fish and wildlife habitat that will be lost. The Corps should not try to diminish the impacts that will occur but must own up to them and simply state the facts. To suggest that "fish and wildlife would be able to move out of construction corridors into adjacent habitat and avoid harm" is not ecologically and biologically feasible since most habitats are probably already at their carrying capacities and added numbers of animals will usually result in death for those animals whose habitat has been destroyed and whose territory no longer exists. 82

The FR/EIS should explain what "when practicable" means in relation to the avoidance of nesting of birds. The assumption that "Terrestrial wildlife would be able to cross earthen levee segments to access remaining habitat on either side" ignores that many species of wildlife including insects, annelids, crustaceans, reptiles, amphibians, small mammals, etc., will be exposed to more predation, desiccation, and other impacts if they try to cross 10-13 foot tall levees. For many wildlife species, crossing these levees will be impossible, their habitat will be permanently fragmented, and connectivity will cease. This is how real biological and ecological processes work and the Corps should state this instead of attempting to make excuses about environmental impacts and losses.

The loss of or impact on 7.7 stream miles of Cow Bayou and 4.4 stream miles of Adams Bayou is a tremendous loss of habitat and the Corps should propose at least an equal number of linear feet for stream mitigation. This means that 40,679.1 linear feet of stream mitigation for Cow Bayou and 23,245.2 linear feet for Adams Bayou is needed. The Corps should hold itself to the same or greater mitigation that it requires for Section

404 permit applicants especially since the Corps is a leader and by example should show how a government takes responsibility for its negative environmental actions.

Page 7-17, the FR/EIS should state how "greatest extent possible" will be implemented for fisheries damage. The FR/EIS should state what the specific impacts are on the 7.7 miles of Cow Bayou and 4.4 miles of Adams Bayou that must be mitigated via "National Marine Fisheries Service (NMFS) design recommendations" and give some idea of what these recommendations will be. The public must have this information so that it can review and comment about the adequacy and appropriateness of the description of impacts and mitigation proposed. The Sierra Club does not believe that a 50% reduction in cross-sectional area of a bayou will not have a significant impact. The Corps must mitigate for this impact.

83) **Pages 7-17 and 7-18, 7.6.1.2 Freeport and Vicinity CSRM Plan and Page 7-19, 7.6.2.1 Sabine Region CSRM Plans,** the FR/EIS suggests that "fish and wildlife would be able to move out of construction corridors into adjacent habitat and avoid harm" and "displacement of finfish and shrimp species … during levee system construction would be temporary and individuals should move back into these specific areas once the project is complete" is not ecologically and biologically feasible since most habitats are probably already at their carrying capacities and added numbers of animals will usually result in death for those who habitat has been destroyed and whose territory no longer exists.

83

The assumption that "Wildlife access is unobstructed across the levees along these levee segments … Terrestrial wildlife would be able to cross earthen levee segments to access remaining habitat on either side" ignores and does not acknowledge that many species of wildlife, including insects, annelids, crustaceans, reptiles, amphibians, small mammals, etc., will be exposed to more predation, desiccation, and other impacts if they try to cross 10-13 foot tall levees. For many wildlife species this will be impossible to successfully accomplish and their habitat will be permanently fragmented and connectivity will cease. This is how real biological and ecological processes work and the Corps should state this instead of attempting to make excuses for environmental impacts and losses.

84) **Pages 7-18 and 7-19, 7.6.2 Essential Fish Habitat Impacts, 7.6.2.1 Sabine Region CSRM Plans and Pages 7-19 and 7-20, 7.6.2.2 Freeport and Vicinity CSRM Plan,** the loss of ESH bottom habitat (soft bottom) cannot be mitigated by structures which provide hard bottom habitat in the same area. These are two different habitats and the Corps assumes that it is okay to mitigate "out-of-kind" habitat when this is not the case. Soft bottoms and hard bottoms provide totally different habitat for marine, brackish water, and freshwater organisms. The FR/EIS fails to state that hard bottom habitats may make it easier for invasive species like Zebra Mussels to spread and effect native ecosystems. This is a negative environmental impact that should be acknowledged and analyzed in this EIS.

84

The functional loss of marsh systems should be known now so that the public can review and comment on its adequacy and appropriateness and get a Corps response

back. If this information is in the Final FR/EIS then there will be a 30 day period where comments could be provided by the public (15 days less than for the draft FR/EIS) and there is no requirement in CEQ NEPA regulation/rules that the Corps respond to public comments and publish those responses. Thus, transparency of Corps actions suffers and the public loses a chance to learn.

85) **Pages 7-20 and 7-21, 7.7 Water and Sediment Quality Impacts, 7.7.1 No Action Alternative for All CSRM Plans,** the FR/EIS fails to address possible low D.O. levels in the Dow Barge Canal. The FR/EIS states that "Little Cypress Bayou also exhibits water toxicity" but does not explain what this means. The public must have this information so that it understands all the impacts of this proposal and background information. **85**

86) **Page 7-23, 7.7.3 FWP Alternative for Brazoria Region and Page 7-31, 7.1.13 Freeport and Vicinity CSRM, Dow Barge Canal Protection,** the FR/EIS states that "Effects of the proposed surge gate on the DOW Barge Canal are expected to be minimal" but does not say why that is the case. The Corps should state what the D.O. and other water quality levels are. Certainly, mitigation to increase circulation and D.O. makes sense for this proposal. **86**

87) **Pages 7-23 through 7.25, 7.8.2 FWP Alternative – All CSRM Plans, 7.8.2.1 Air Emission Impacts and 7.8.2.2 Greenhouse Gas Impacts,** it is amazing that the Corps does not include equipment lists and proposed operations in an appendix and does not have a summation of them in the FR/EIS. This does not make sense and with-holds from the public information that it should have. The FR/EIS also ignores population growth and increases in residential, commercial, and industrial development air pollution (including past, present, and future foreseeable air pollution for 50 years) like the massive future just completed, currently constructed, and soon implemented refinery and petrochemical expansions. This oversight is not appropriate.

Greenhouse gas air pollution is a responsibility of the Corps and its supposed helplessness "there are no implementing regulations to direct development of these analyses for Federal projects" makes no sense especially since the CEQ December 18, 2014 guidance gives a considered direction and method that the Corps can use to determine greenhouse gas emissions and their mitigation.

The Sierra Club strongly recommends that the Corps implement in the FR/EIS climate change mitigation. The Corps should prepare and include in the FR/EIS a climate change ecological resilience and resistance plan (CCERRP) for the proposal. The CCERRP would assess the biological and ecological elements in the project area and the effects that climate change has had and will have on them. The CCERRP would also assist plants, animals, and ecosystems in their adaptation to climate change and would require monitoring of changes and mitigation measure effectiveness. The CCERRP would also determine how climate change emissions can be reduced in this proposal. The CCERRP would be based on:

a. Protection of existing functioning ecosystems in the project area. **87**

b. Reduction of stressors on ecosystems in the project area.

c. Restoration of natural functioning ecological processes in the project area.

d. Use of natural recovery in the project area, in most instances.

e. Acquisition of buffers and corridors to expand and ensure connectivity of ecosystems in the project area.

f. Intervention to manipulate (manage) ecosystems in the project area only as a last resort.

g. Reduction of climate change emissions (carbon footprint) due to the proposal or mitigation for the CO2 and methane that is released via carbon sequestration.

88) **Page 7-35, 7.11.2 FWP Alternatives – All CSRM Plans,** the FR/EIS states that "recommends intensive cultural resources investigations" but this should be done now so that the results are reported to the public in the FR/EIS and the public can then review and comment on the adequacy and appropriateness of the surveys and mitigation for cultural resources. **88**

89) **Page 7-36, 7.12 Prime and Unique Farmlands, 7.12.1 Orange-Jefferson CSRM Plan, 7.12.1.1 No Action Alternative,** the FR/EIS states "Impacts on prime farmland during the FWOP condition would occur primarily from industrial, commercial, and or residential development, and continue according to expected trends of population growth and development in each area." The Corps should state clearly what the "expected trends of population growth and development" are for each area which are, in part, the cumulative actions and impacts. The public must have this information so that it can review and comment on the adequacy and appropriateness of this information, its environmental impacts, and mitigation for those impacts. **89**

90) **Pages 7-40 through 7-42, 7.13.2 EO 11988 Eight-Step Analysis,** the FR/EIS states that "The proposed Action would not induce development in the base floodplain." There is no documentation provided which supports this assertion or that cumulative impacts will not occur in non-floodplain area. After all, floodplains change over time particularly due to urbanization. All indications are that after construction of new or improvement of existing levees that people will want to build and live in more residential, commercial, and industrial developments. This has already happened with the federal flood insurance program which subsidized rebuilding in the floodplain after Hurricanes Rita and Ike and since 1968. If the town of Bridgeport had almost no houses that were not damaged (14 of 3,400) but now is built back then it is obvious that subsidies play a role in whether people go or remain in harm's way. In fact the Proposed Action is an example of a federal subsidy and does support direct or indirect floodplain development within the base floodplain.

The FR/EIS states that there are five million people that reside in the study area and that 2.26 million of those people, or 45.2%, "live within storm-surge inundation zones". Then the FR/EIS states that in the future there will be nine million people in the next 50 years that will live in the study area. Just using the present 45.2% figure of people that live in the study area (assuming no increase in percent of people that live in the storm-surge portion of the study area) and multiplying this number by nine million means that in 50 years 4,068,000 people will live in the storm-surge portion of the study area (an increase of 1,808,000). **90**

More people will be in harm's way and we can no longer assume that levees or other structural measures will not fail, since we saw this happen in 2005 in New Orleans with Hurricane Katrina. The alternative recommended in the FR/EIS will put more people in harm's way in 50 years and not less people in harm's way. This is in opposition to Objective 2 which calls for a reduction in risk to human life. It does not appear that this proposal keeps people out of harm's way.

91) **Page 7-43, 7.15.2 FWP Alternatives – All CSRM Plans,** the proposal does in fact lure new people in and existing people continue to live in harm's way, in the floodplain and storm surge zone which will increase the risk of harm if over-topping or failure of a levee/wall occurs. The Corps already earlier in the FR/EIS **(Pages 3-1 through 3-7)** stated that local entities have not maintained current levees and other flood control and storm surge structures to appropriate standards. With more people at risk because of population growth and increased development, both normal and induced, this risk due to local entity inaction will increase. This is not where we want to put people's lives and property. **91**

92) **Page 7-47, 7.16.1.3 Sabine Region Resource Impact Evaluation,** the FR/EIS states that "Impacts of the TSP in the Sabine Region would not be sufficient, when combined with past, present, and reasonably foreseeable future impacts to lead to significant degradation of the region"s environment … would result in negligible environmental impacts." This makes no sense when the FR/EIS states on **Pages 7-3 and 7-4** that "Deepening the channel would allow the saltwater wedge in the deep draft navigation channel to reach further inland and increase salinity in the Lower Neches and Sabine River channels, as well as Sabine Lake." Already the Big Thicket National Preserve (BTNP), Beaumont Unit, which was expanded south of the original Beaumont Unit where the Lower Neches Valley saltwater barrier is has been exposed to higher salinity levels in 2011 in cypress swamps.

In addition, the storm surge could be directed and more focused due to its deflection off of the levees/walls on upstream areas where there is BTNP and could have additional impacts. Modeling of storm surge conditions and their effects on BTNP, Beaumont Unit, should be conducted by the Corps. The FR/EIS is silent about impacts to the BTNP and how the Corps will address these impacts. This is not acceptable. The FR/EIS is silent about impacts to the BTNP and how the Corps intends on address these impacts. This is not acceptable. **Degradation of a National Park System unit is not acceptable. This is a significant environmental impact that this proposal and all cumulative** **92**

actions with environmental impacts has and analysis with mitigation must be done.

93) **Pages 7-48 through 7-51, 7.16.2.1 Brazoria Region Past or Present Actions,** the FR/EIS fails to describe the widening of the Gulf Intracoastal Waterway from 125 feet to over 200 feet in many places along the Texas Coast, from Sabine Lake to Freeport. This is a massive environmental impact that has destroyed coastal wetlands, prairie, and other habitats. However, the FR/EIS ignores these impacts. The FR/EIS also ignores the impacts of past residential, commercial, and industrial development and does not provide any quantification of the destruction that has occurred (number of acres or square miles covered by development, number of wetlands destroyed, etc.). This is an incomplete analysis for cumulative actions and impacts and is not sufficient for NEPA analysis. There is no quantification of the tons of air pollutants that are released annually and over the past, present, and foreseeable future time periods. The analysis does not discuss the change in the in-river estuary on the Brazos River from brackish to marine and the sedimentation and other impacts that have occurred by moving the entrance of the Brazos River and the impacts this has had on the San Bernard River and other shoreline locations. **93**

94) **Page 7-51, 7.17 Any Adverse Environmental Impacts That Cannot Be Avoided Should the TSP Be Implemented,** the FR/EIS low-rates the environmental impacts by using the figures of 359 acres of marshes and forested wetlands. **Page 7-41** of the FR/EIS states that the figures are 140 acres of forested wetlands and 2,411 acres of coastal marsh that would be impacted. The Corps must reveal the true and complete environmental impacts at the appropriate places in this FR/EIS. **94**

95) **Page 7-52, 7.20 Energy and Natural or Depletable Resource Requirements and Conservation Potential of Various Alternatives and Mitigation Measures,** the FR/EIS fails to mention the additional energy that will be used to operate, maintain, repair, and replace the proposal. This is a massive amount of energy that will be used for 50 years if not in perpetuity to keep these structures in good condition. **95**

96) **Pages 8-4, 8.2 Cost for the Recommended Plan and Page 8-5, 8.5.1 USACE Campaign Plan,** the FR/EIS fails to provide a full cost accounting for the proposal. The financing costs, operation costs, maintenance cost, repair costs, and replacement costs are not fully provided. In fact, on **Page 8-5** the Corps admits that "The cost estimate for the TSP has not been developed at this point in the study." The public must have this information now to determine if it wants to use taxpayer monies. **96**

97) **Pages 8-5 and 8-6, 8.5.2 Environmental Operating Principles and Page 4-3, 4.3 Methodology to Analyze Environmental Criteria,** the FR/EIS states that "Sustainability was an integral consideration in the development of flood risk reduction recommendations." However, no flood risk has been calculated with a probability number and provided to the public in this section. This proposal is not sustainable because it puts more people in harm's way in an environment where sea level is rising

and where constant attention in perpetuity will have to be paid to the erosion around the levees/walls as the water levels rise. 97

The FR/EIS states “A thorough NEPA and engineering analysis has ensured that we will meet our corporate responsibility”. **The Corps is not a corporation. The Corps is a part of the United States Government. The Corps must understand that it must be responsible and accountable to the public and not “corporate responsibility”.**

98) **Page 3-1, 3.1.1 Initial Screening of Measures Criteria and page 4-1, 4 Basis for Choice, Draft Appendix B, Plan Formulation,** the initial screening criteria should have a fourth criteria, damage, degradation, or destruction of acres of ecosystems. The environment as a “wounded entity” must be recognized and alternatives that minimize these wounds chosen. Focusing on so-called “environmental benefits” ignores the costs to the environment due to the existence of the alternative and its construction, operation, maintenance, repair, and replacement. 98

99) **Pages 3-1 and 3-2, 3.1.2 Initial Screening of Measures Prior to Alternative Formulation, Table 3-2 Measures Eliminated from Further Consideration, Draft Appendix B, Plan Formulation,** the FR/EIS states that “If a measure could not meet at least one objective, the measure was dropped from further consideration in plan formulation”. The Corps failed to adhere to this requirement because Measure 3-4, Measure 3-8, Measure 3-10.1,and several other measures in Table 3-2 do meet at least one objective. 99

100) **Page 4-2, 4.2 Methodology to Analyze Economic Criteria,Draft Appendix B, Plan Formulation,** the FR/EIS refers to “projects exceed project costs” and “alternative that most reasonably maximizes net economic benefits” but as the FR/EIS has shown all the “project costs”, like pipeline relocations and complete mitigation plans, are not factored into the “project costs” in many of the sections/chapters/tables that are represented. The Corps must state what “most reasonably maximizes” means in relation to economic and environmental costs and damages. In the last paragraph the Corps leaves out “repair costs” as part of “total annual costs”. This is not appropriate and should be changed. 100

101) **Page 4-3, 4.3 Methodology to Analyze Environmental Criteria, Draft Appendix B, Plan Formulation,** the FR/EIS fails to state clearly what “sustainability” means with regard to Corps policy and this project. This must be addressed. 101

102) **Page 4-3, 4.5 Key Uncertainties, Draft Appendix B, Plan Formulation,** the FR/EIS uses data for sea level rise that is 28 years old (NRC, 1987), and 8 years old (IPCC, 2007). There should be newer data on sea level rise including a new IPCC report from 2014. The Corps must use the latest scientific data for this FR/EIS. 102

103) **Pages 5-1 through 5-4, 5.2.2 Galveston Region, Table 5-2 Galveston Region, Initial Array of Alternative Plans, Draft Appendix B, Plan Formulation,** the Sierra Club does not support Ike Dike, Ike Dike derived alternatives, or alternatives with parts 103

of Ike Dike in them including G1, G2, and G3 due to their costs, negative environmental impacts, and ability to place people into harm's way.

104) **Page 5-5, 5.3 Initial Screening Criteria, Table 5-4 Criteria for Screening Initial Array, Draft Appendix B, Plan Formulation,** the initial array screening criteria should have a fourth criteria, damage, degradation, or destruction of acres of ecosystems. The environment as a "wounded entity" must be recognized and alternatives that minimize these wounds chosen. Focusing on so-called "environmental benefits" ignores the costs to the environment due to the existence of the alternative and its construction, operation, maintenance, repair, and replacement. **104**

105) **Page 5-5, 5.3.2 Environmental Benefit Criterion, Draft Appendix B, Plan Formulation,** the FR/EIS states "It was assumed that environmental benefits would be equal to the acres protected from storm surge damages". The acres protected may degrade due to levee/wall impacts. The assumption that storm surge, which is a natural disturbance, should be treated the same way as human destruction is antithetical to natural ecosystem restoration and planning. Storm surge, is a natural disturbance, reorders ecosystems, creates new ecosystems, removes other ecosystems, creates successional areas for replenishment and rejuvenation, moves and redistributes sediments within and out of ecosystems, frees organic matter and nutrients for additional incorporation into ecosystems, etc.

Storm surge is not the problem. It is the failure of the Corps and others to prevent human created environmental destruction that makes natural ecosystems more vulnerable to storm surge effects. The focus should be on stopping or reducing significantly the human created environmental destruction that makes ecosystems more vulnerable than normal to storm surge effects. These projects or proposals do the opposite and create conditions for further environmental degradation. **Natural ecosystems do not need protection from natural storm surge but need protection from human created environmental destruction and built environments. In other words, the Corps assumes that it has to "protect Nature, from Nature" a ridiculous concept that will not work.** **105**

The Corps relies on the National Wetlands Inventory information without telling the public about its flaws and correcting for those flaws so that wetlands information will be as accurate as possible. The U.S. Fish and Wildlife Service has admitted that the National Wetlands Inventory underestimates wetlands in some areas.

106) **Page 5-6, 5.3.3 Implementation Costs Criterion, Draft Appendix B, Plan Formulation,** the FR/EIS states that "Rough order of magnitude costs were refined". As used in other parts of the FR/EIS this means a 10 times costs figure (ten times higher or ten times lower costs). This is not a "rough order of magnitude". The Corps should explain how it can use costs that may be 10 times higher or lower than the figure calculated as acceptable. The public must have accurate cost figures so that it can determine whether the costs of a proposal are worth the public tax dollars to be spent. **106**

107) **Page 5-6, 5.3.4 Environmental Impacts Criterion, Draft Appendix B, Plan Formulation,** the FR/EIS should use environmental flows, both inflows into bays and estuaries and instream flows, as a criterion for judging the environmental impacts of proposals. **107**

108) **Pages 5-6 through 5-20, 5.4 Initial Screening of Alternatives, Draft Appendix B, Plan Formulation,** the FR/EIS admits that "Additional study is needed, as described below, to determine if the environmental effects of these surge barriers will be positive or negative." The Corps is choosing alternatives based in part on environmental benefits and impacts but admits that it does not know if surge protection alternatives have positive or negative impacts on the environment. If this is not known then these alternatives should not be chosen during the screening process. These alternatives are not ready for screening because their impacts cannot be determined. For instance, it appears logical to assume that the natural San Luis Pass will be negatively affected by the Ike Dike or similar alternatives because this pass will have huge structures placed within it that will alter flows, amounts of flows, direction of flows, and sediment, organic matter, and nutrient existence, distribution, and deposition. But the advocates of Ike Dike have ignored this real possibility in public right up to the release of the FR/EIS.

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It is also logical to assume that the Ike Dike or similar alternatives will eventually result in the loss of beach, dune, and marsh habitats seaward of FM 3005/SH 87 even with attempts to create dunes because of storm and high tide energy impacts on a solid structure. But the advocates of Ike Dike have ignored this real possibility in public right up to the release of the FR/EIS. An Ike Dike or similar project or proposal will not reduce salinity but will interfere with flow of waters, organic matter, sediment, and nutrients.

109) **Pages 5-21 through 5-25, 5.5 Evaluation Array of Alternative Plans Carried Forward, Table 5-11 Qualitative Analysis of Environmental Impacts Sabine Region and Galveston Region, Draft Appendix B, Plan Formulation,** the FR/EIS fails to recognize the alteration of sediment transport that many of these alternatives will have. Also "expanded right-of-way" (ROW) issues are not discussed. The Corps should state how much additional ROW is needed for each alternative. San Luis Pass environmental impacts are ignored. Operation, maintenance, repair, and replacement impacts are ignored. These tables need to be totally redone to accurate reflect potential environmental impacts and their costs. **109**

110) **Page 5-27, Table 5-15, Summary of Screening of Galveston Region Alternatives for Evaluation Array, Draft Appendix B, Plan Formulation,** the FR/EIS for the G6 Alternative, states that it was eliminated "due to extremely high implementation costs". The FR/EIS should discuss what this means with regard to ER measures and why G2 is not also eliminated because they appear to have many of the same costs. **110**

111) **Page 6-5, 6.2.2 Hydraulic and Hydrology (H&H) Analysis, Draft Appendix B, Plan Formulation,**the FR/EIS states that "There would be some storage volume in the **111**

Neches River basin behind the gate". The FR/EIS should state what this volume is so the public understands the magnitude.

112) **Page 6-13, 6.2.5 Wetlands and Hydrology, Draft Appendix B, Plan Formulation,** it is of great concern that the FR/EIS admits that "there is no line item cost for environmental mitigation in cost comparison presented below … Therefore, it is not possible to determine with this preliminary analysis which alternative would require the most mitigation". On the one hand this statement does not make sense. The Corps states in the FR/EIS that it assumes that 50% reduction in the width (instream flow interference) is acceptable for Adams and Cow Bayous. Therefore it should be able to compute costs based on this absurd allowance of environmental impacts. But it does not. This is another way that the environment gets short-shrift in this analysis of damages and costs. The public must have environmental costs, both damages and the mitigation costs, that it will take to somewhat offset the environmental damages. The public cannot review and comment on the acceptability of these damages and costs if they are not calculated and presented. **112**

113) **Page 6-14, 6.2.6 HTRW, Draft Appendix B, Plan Formulation,** the FR/EIS assumes that each alternative "is likely to affect roughly the same number of archaeological sites". This is not true. For instance, in the same paragraph where this statement is made, **Cultural Resources,** the Corps states that the No-Gate Alternative has 11 archaeological sites, 1 National Register District, 4 cemeteries and 2 historic markers" while the Gate Alternative has "9 archaeological sites, the Navy Park Historic District, the Hollywood Community cemetery, and 1 historic marker". **As the Corps knows the value of the site depends on its richness in archaeological artifacts and historical record. These sites cannot be assumed to be equivalent and have the same mitigation costs.** **113**

114) **Page 5-15, 6.2.8 Economic Analysis, Draft Appendix B, Plan Formulation,** it does not make sense for the FR/EIS to make the No-Gate Alternative configured to provide the same level of protection as the Gate Alternative since the entire purpose for the Gate Alternative is to provide more protection. This negates the Gate Alternative's reason for its greater costs. **114**

115) **Page 7-1, Final Array of Alternatives, Draft Appendix B, Plan Formulation,** the FR/EIS states "The Lone Star-like conservation plan non-structural alternative was also screened out, as it was not implementable by USACE." This statement is in violation of the NEPA CEQ regulation/rules which states in **Section 1502.14 Alternatives including the proposed action**, "In this section … (c) Include reasonable alternatives not within the jurisdiction of the lead agency." **The Corps cannot simply throw-out the Lone Star conservation plan non-structural alternative because it cannot be implemented by the Corps. The Corps must put this alternative back in and conduct the appropriate environmental and economic cost analysis.** **115**

116) **Page 7-6, 7.1.4 Existing Hurricane Flood Protection Facilities and Page 7-16, Freeport and Vicinity CSRM, Draft Appendix B, Plan Formulation and Page 12, 1.8.2 Port Arthur and Vicinity CSRM, Draft Appendix D, Engineering Design, Cost**

Estimates, and Cost Risk Analysis, the FR/EIS states that "The sponsor is in the process of correcting these items. The potential failure issues addressed in this study are not considered an O&M responsibility … the local sponsor has no current plans to address the risk drivers for the engineering concerns in the FWOP conditions. It is assumed in the FWOMP conditions, no other actions to reduce the risk will take place by others."

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The Corps should state clearly how the sponsor's failure to address "potential failure issues" that are O&M will affect the proposal if the sponsor does not fix the O&M issues. The proposed alternative is even more complex and larger than the present one. How will the sponsors be able to maintain a new and bigger project? The statement that it is assumed that no other actions will occur to reduce the risk if the proposal is not implemented does not make sense. If the proposal is not approved then people will address flood and storm surge issues in some other ways.

117) **Page 7-11, 7.1.5 Economic Evaluation, Draft Appendix B, Plan Formulation,** the FR/EIS does not consider wave run-up and overtopping but instead uses still water levels to compute economic efficiency. If one of the problems is storm surge damage and breaching of levees/flood walls, then it does not make sense to ignore wave run-up, overtoppping, tides, and other phenomena that will make storm surge worse and increase the risk of damage to levees/flood walls.

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118) **Page 7-19, 7.1.6 Life Safety and Page 7-22, 7.1.7 Critical Infrastructure, Draft Appendix B, Plan Formulation,** the FR/EIS states "This does not include transportation routes for population evacuation or those at work in commercial or industrial areas." The cost of improved evacuation should be considered as a non-structural method to reduce deaths and injuries.

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119) **Pages 7-42 and 7-43, 7.1.18 Selection of the Recommended Plan, Draft Appendix B, Plan Formulation,** the FR/EIS fails to consider evacuation which would reduce both deaths, injuries, and minor property damage.

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120) **Page 7-53, 7.1.21 Separable Elements, Draft Appendix B, Plan Formulation,** the FR/EIS fails to examine how the entire Upper Texas Coast will be impacted (shoreline erosion, natural ecosystems, wildlife, etc.), if all the proposals for Orange and Jefferson Counties, Beaumont, Freeport, and Galveston Bay are constructed, operated, maintained, repaired, replaced, and financed, four million more people move into the area, and the additional residential, commercial, and industrial growth occurs in the next 50 years. These are foreseeable cumulative actions with impacts that should be assessed, analyzed and evaluated in this FR/EIS but are not.

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121) **Page 2, 1.4.2 Port Arthur and Vicinity CSRM, Draft Appendix C, Economic Analysis,** the FR/EIS states that a plan formulation was not conducted for Port Arthur. The Semi-Quantitative Risk Assessment (SQRA) is not final." The FR/EIS should explain how this risk assessment is "semi-quantitative" and why it is not "quantitative". The public must have this information and in a final form so that it can review and

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comment on its adequacy and appropriateness. The Corps should finalize the SQRA and then release it to the public for review and comment.

122) **Page 5, 1.4.3 Freeport and Vicinity CSRM, Draft Appendix C, Economic Analysis,** the FR/EIS states "Other performance issues … were the result of deferred local sponsor maintenance or alterations that local industrial stakeholders have constructed over time". The FR/EIS should clearly show how these "performance issues" will be resolved so that any new construction is not endangered by these actions. **The FR/EIS must clearly document that if local sponsors are not able to keep up with maintenance of the existing system how they will be able to maintain appropriately a more complex and larger system.** 122

123) **Page 9, 2.1.2 Fragility Curves, Draft Appendix C, Economic Analysis,** the FR/EIS relies on "average still water levels for damage estimates". This makes no sense. It is the overtopping, waves, tidal influences, and other factors that make the damage more severe or that will lead to system failure. By only looking at "average still water levels" the Corps underestimates damages and the fragility of alternatives. 123

124) **Page 21, 2.2.4 Depth-Damage Functions, Draft Appendix C, Economic Analysis,** it is of concern that the FR/EIS does not use depth-damage functions from the Texas Coast but relies on those from Louisiana. There is no documentation that shows that such data from Louisiana is appropriate for Texas. 124

125) **Page 23, 2.4.1 Orange-Jefferson CSRM, 2.4 Alternative Analysis, Page 32, 2.4.2 Port Arthur and Vicinity CSRM, and Page 33, 2.4.3 Freeport and Vicinity CSRM, Draft Appendix C, Economic Analysis,** it is of concern that a "rough order of magnitude costs" was used to identify benefits. This means that the costs could be 10 times higher or lower. This is not an accurate figure to use in calculating benefits due to reduction of damages. 125

126) **Pages 23 and 31, 2.4.1 Orange-Jefferson CSRM, 2.4 Alternative Analysis, Draft Appendix C, Economic Analysis,** the FR/EIS states that "Operation, Maintenance, Repair, Replacement and Rehabilitation (with the exception of mitigation) was not taken into account". This makes no sense. The use of proportionality breaks down because some alternatives or parts of alternatives are larger in scale or more complex than others. In addition, the total costs are of importance and of concern to taxpayers who want to determine whether they support such an expensive proposal. 126

127) **Pages 34 through 36, Tables 2-10, 2011, and 2-12, 2.4.3 Freeport and Vicinity CSRM, Draft Appendix C, Economic Analysis,** it is not clear what the pay-off time-frame is. The FR/EIS should clearly state how many years will it take to pay-off each project in the proposal. 127

128) **Page 37, 2.4.3 Freeport and Vicinity CSRM, Draft Appendix C, Economic Analysis,** the FR/EIS states "at the East Storm Levee, $1.3 to $3.8". The Sierra Club assumes the Corps meant $1.3 million to $3.8 million. 128

129) **Page 37, 2.4.4 Brazoria and Sabine Non-Structural, Draft Appendix C, Economic Analysis and Pages 2-4 through 2-6, 2 Management Measures, Table 2-1 Sabine Pass to Galveston Bay, Texas Structural Measures, and 2.1 Non structural Measures, and 2.2 Structural Measures, Draft Appendix B, Plan Formulation,** the Corps does not give nonstructural alternatives a chance to work. What makes sense is to see which residences, commercial properties, and industrial properties could be bought out first before construction of levees/walls. By buying out first this ensures that if there is a structural alternative that it is as small as possible (smaller footprint) and thus will cost as little as possible. **129**

If the structural alternative fails during a storm then all of these properties could flood which means that not only would there be a cost for fixing the structural alternative but also a cost for all the properties damaged inside of it. With a buy-out the residence, etc., is gone forever and there is no danger of further costs due to damage, destruction, loss of life, or injury because the people are gone. Buy-outs are the cheapest thing to do first to reduce risk and eliminate possible damage, death, and injury. After buy-outs then you can look at other more structural alternatives. A combination alternative like this, that is several tiered or layered makes sense to reduce the liability of the government and reduce damage, death, and injury to people and their properties.

130) **Page 1, 1.2 Scope of Effort, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should explain what "maximum extent possible" means with regard to acquiring information to develop plans and designs for the project. **130**

131) **Pages 2 and 3, 1.4 Project Areas, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** if the FR/EIS truly wants to cover nonstructural buyouts it should consider these first before any engineering project is contemplated and then see how the buyout program affects the engineering alternatives. **131**

132) **Page 6, 1.6.1 Design Considerations, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS refers to a "balanced approach in planning". The Sierra Club perceives that this "balanced approach" has not worked for this project because non-structural methods have not been chosen, used, or even given much consideration and any balance with the environment was lost a long time ago when development and economic activities destroyed and degraded so much of natural ecosystems. **132**

133) **Page 7, 1.6.1 Design Considerations, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should inform the public how the Corps "reasonably maximizes" the expected net benefits with regard to "the explicit trade-off between risks and costs" and the environment. **133**

134) **Page 7, 1.6.1 Design Considerations, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "As the project features are further developed, they likely will be raised to accommodate future sea-level rise, wave run-up, and overtopping to the extent practicable". This means in **134**

essence that these are cumulative impacts from future foreseeable actions and should be addressed in the FR/EIS.

135) **Page 8, 1.6.2 Relative Sea-Level Change and Pages 30, 1.10.1.1 Orange 3 Reach, and 31, 1.10.1.2 Jefferson Main Reach, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states "it was assumed that the applied range of future SLC would be the same across the system; therefore, there was no need to include or incorporate this criterion in the screening process … SLC is not accommodated in the TSP concept designs as of yet, but is a consideration the PDT recognizes needs to be addressed in the project. This will be done when the TSP is further developed." These statements are not acceptable. This is another way that the Corps underestimates the costs of the alternative so the public, which pays with taxpayer dollars, does not know the cost. This is not a transparent process for the public. **135**

Pages 8 and 9, the FR/EIS states that "Adaptive strategies could be employed to address higher change potential for sea-level rise over the project's service life, which is assumed to extend well beyond the 50-year period assumed for the economic analysis." If this is so then the Corps should give an estimate of how much longer the project will last beyond 50 years and consider this as a cumulative action whose impacts should be considered in the FR/EIS.

136) **Page 10, 1.8.1 Orange-Jefferson CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** if ExxonMobil has already constructed a levee then let them pay for any further construction. Certainly, this company can afford to do its own storm surge protection plan especially since the Corps stated that little damage occurred due to storm surges from Hurricanes Ike and Rita. See **Page 93, 2.15.4 Consideration of Storm Surge Damages in Port/City of Beaumont,** where it says that 87% of the damage claims were debris removal and there was minimal damage to infrastructure or facilities. **136**

137) **Page 12, 1.8.2 Port Arthur and Vicinity CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "This is a fairly frequent event for still water overtopping". The Corps should define what "fairly frequent" means. **137**

138) **Page 13, 1.8.2 Port Arthur and Vicinity CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the Corps should define what it means by "catastrophic failure" so that the public understands this phrase.

Pages 13 and 18, If there is "additional project scoping" the public should have the opportunity to review and comment on any changes proposed. **138**

Page 13, it is disconcerting that the "Port Arthur SQRA has not yet been done". The public should be provided this information so that it can review and comment on it.

139) **Page 17, 1.8.3 Freeport and Vicinity CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** "LSAC" is not in the list of acronyms at the beginning of the FR/EIS. **139**

140) **Page 18, 1.8.3 Freeport and Vicinity CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should use a final report of the SQRA for Freeport and not just a draft. The FR/EIS never discusses how it will ensure that a larger and more complex levee system will be maintained when the local sponsors have had problems with maintenance of the present less complex and smaller levee system. **140**

141) **Page 20, Old River at Dow Thumb, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** "FOS" is not found in the list of acronyms at the beginning of the FR/EIS. **141**

142) **Page 43, 2.3.4 Tropical Cyclones and Floods of Record, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** Hurricane Carla occurred in 1961 and not 1962. **142**

143) **Page 44, 2.5 Analysis of Hydraulic Loading for Flood Protection Systems, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,**the overtopping analysis is done at the 100 year level when a number of the levees provide protection at the 130 year protection level. The Corps should explain the reason for this difference. **143**

144) **Page 59, 2.9.3 Wave Overtopping Analysis Methods and Page 64, 2.12 TSP/NED Plans Compared to Recommended FEMA Certification and USACE Accreditation Heights, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "various methods for calculating overtopping are not consistently conservative". This is of concern because then you cannot build additional strength into a design. The Corps should state how it will compensate for this fact. The public should be told how this will be handled. This is very important since only the 50% level of assurance is applied for the feasibility study when at least a 90% level is needed. **144**

145) **Page 60, 2.10.1 General Process, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS weakens designs for climate change impacts by using the low sea level rise estimate for earthen levees and the intermediate sea level rise rate for flood walls. The high sea-level rise rate should be used because the indications are that sea level is rising much faster than anticipated and to ensure that additional strength will be built into structural alternatives. **145**

146) **Page 64, 2.11 Adjacent Impacts, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should state what the cost will be for "minor surge protection features" so the public knows this. **146**

147) **Page 76, 2.13.5 Predicted Future Rates of RSLC – 100-year Sea-Level Change, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** it is of concern that “detailed modeling has not occurred yet”. There is no reason to wait to model how sea level rise will affect the Upper Texas Coast and this proposal. 147

148) **Page 83, 2.13.7 Additional Climate Change Considerations, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should be corrected here. The statement that “many of the water shortages occur in the drier east part of Texas” is incorrect and should be changed to “drier west part of Texas”. 148

149) **Page 85, 2.13.8 Conclusions and Recommendations Regarding RSLC, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the Sierra Club prefers an anticipatory/conservative approach especially with buyouts so that people are permanently kept out of harm's way. 149

150) **Page 88, 2.14 Interior Drainage, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should state clearly how it will ensure that “known deficiencies of interior drainage structures” are addressed. The FR/EIS should state what these specific “deficiencies” are and what is the schedule to fix them. 150

151) **Page 103, 2.15.10 Pumps and Page 117, 2.17.7 Pumps, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the Sierra Club has not seen in the FR/EIS any mention of the need for back-up pumps in case the main pump fails. The Corps should indicate whether back-up pumps will be installed and what is the cost for back-up pumps. 151

152) **Page 110, 2.17.2 Cow Bayou Analysis, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that “Inlet constricts the outflow such that there is some increase in both the magnitude and duration of the stormwater flooding in the marsh.” The Corps should state clearly what “some increase” means with respect to magnitude and duration. 152

153) **Page 110, 2.17.3 Adams Bayou Analysis, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should state clearly what “very near” means (distance) with regard to the location of the proposed structure on Adams Bayou near the Sabine River. 153

154) **Pages 113 and 114, 2.17.5 Discussion and Conclusions of Cow and Adams Proposed Gate Structures, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should state clearly how much water back-up will occur due to these structures. In addition, “significant impacts” should be defined quantitatively and the criteria used to make this statement revealed. The FR/EIS should define what “significant constriction” is and what “minimal impacts on water surface elevation and salinity” are. The Corps should also state quantitatively what “additional impoundment” of stormwater will occur behind the structures. 154

155) **Page 117, 2.17.7 Pumps, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "Smaller features … and other features for wildlife will be included". The Corps should state what these "features" are, what their purpose is, and where they will be installed. **155**

156) **Pages 135, 137, and 139, 5.2 Design of Positive Environmental Attributes into the Project, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the use of native grasses is mentioned for levees. **The Corps should provide a list of native grasses it will choose from. Of course, Bermuda grass is not a native grass.** **156**

157) **Page 135, 5.2 Design of Positive Environmental Attributes into the Project, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS refers to the use of reinforcement mats for levees. The Corps should state what is the life span of these mats, how they will be replaced when their life span is reached, and if they will not be replaced how much of the strength of the levee is compromised when their life span is reached. **157**

158) **Page 136, 5.4 Beneficial Uses of Spoil or Other Project Refuse During Construction and Operation, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should state what the environmental impacts are of spoil, where the spoil will be deposited, and how the environmental impacts of spoil will be mitigated. **158**

159) **Page 137, 5.6 Maintenance of Ecological Continuity With the Surrounding Area and Within the Region, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS should explain "maximum extent possible" with regard to "resiliency elements". **159**

160) **Page 143, 6.1.2.1 Orange-Jefferson County HFPP, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FR/EIS states that "The proposed Orange County reach alignment will cut through several forested areas … In deriving the TSP cost and NED Plan costs, the acreage of forests within the preliminary construction easements was not estimated." The Corps should provide an estimate of forest loss for the public. In addition, the Corps should demonstrate what mitigation will take place due to the loss of these forests. Part of the mitigation should be fore the fragmentation and loss of connectivity that the levee will cause. The public must have this information so that it can review and comment on this "significant" environmental impact. The cost of this mitigation should be revealed now to the public. **160**

161) **Page 1, 1 Purpose and Page 15, 11 Facilities/Utilities/Pipeline Relocation and Removals, Draft Appendix E, Real Estate,** although the **Purpose** refers to rights-of-way, in other places in the FR/EIS the Corps states that pipeline estimates have not been made. The actual field conditions should already have been examined and a preliminary estimate provided to the public about pipeline removals and costs. Thus the current real estate costs are vastly underestimated, are inaccurate, and provide very **161**

little useful information for the public. The public must have this information so that it can review and comment on the costs of the proposal.

162) **Draft Appendix K, Coordination Act Report, Draft Appendix P, Mitigation Plan and Incremental Analysis and Monitoring Plan, and Draft Appendix Q, Wetlands Value Assessment Sensitivity Analysis,** all three of these documents should be available now so that the public can review and comment on their adequacy and appropriateness and then see what the Corps response is to their comments in the Final FR/EIS. By failing to have these documents available now, the Corps avoids having to respond to any public comments (during a short 30-day comment period) in writing and still will be in compliance with NEPA and CEQ regulation/rules. The Corps should practice transparency and give the public 45 days for public comments when these currently unavailable documents are complete and then should respond to public comments and provide the Corps responses to the public in writing so that the public can see how the agency addressed its concerns and issues. **162**

163) **Page 13, 4.5 Emergent Marsh Loss, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS gives annual percent change of sea level rise from low to intermediate scenarios and low to high sea level scenarios but fails to give the annual percent change for intermediate to high scenarios. The public must have this information so that it can see the full range of sea level change for each of the different scenarios. **163**

164) **Page 15, 5 WVA Modeling Methodology, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS fails to conduct sensitivity analyses on the modeling method (WVA) that calculates impacts and leads to mitigation. This is not transparent for the public because this information will not be available until the Final FR/EIS when public comments are not required to be reviewed and a response given by the Corps in writing. The public is unable to determine what the actual impacts are and how the Corps proposes to mitigate them. The Corps should put out the sensitivity analysis and have a public review and comment period and then publish its response to each comment so the public knows what is being done and why. **164**

It is of concern that the habitat variable habitat suitability relationships within the WVA models have not been verified by field experiments or validated via a “rigorous” scientific process. It is also of concern that a number of the variables are defined by the Coastal Wetlands Planning, Protection, and Restoration Act and not by local conditions on the Upper Texas Coast that are related to coastal marshes and bottomland hardwood forested wetlands. **The Corps should use a different model that is verified and validated via field experiments or a “rigorous” scientific process. The public needs a model that can be trusted to give accurate and precise results. The public does not need the WVA which is being worked on so that results can be determined with the appropriate accuracy and precision.**

165) **Pages 16 and 17, 5.2 Wetland Vegetation Mapping, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS uses out-of-date National Wetland

Inventory and 2015 Google Earth imagery information. What is needed is ground-truthing of wetlands locations, acres, and types. Without this the Corps is simply guessing what is or is not a wetlands. Both the National Wetland Inventory and Google Earth are not 100% accurate and miss wetlands. The public must have an accurate and thus ground-truthed accounting of wetlands that exist, that will be damaged or destroyed, and a complete mitigation plan for those wetlands that will be destroyed or degraded. **165**

The marshes that are aggregated by type do not include salt marsh (include fresh, intermediate, and brackish). Salt marsh also must be aggregated by type and acres.

166) **Page 24, 5.4 Data Collection/Groundtruthing, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS states that groundtruthing was based upon field investigations and "previous observations". The Corps must state clearly what this means with regard to how field investigations are different than previous observations. **166**

The use of August 24 and 25, 2004 and October 21, 2004 data means that this information is at least 11 years old. Many changes to wetland acres could have occurred in 11 years due to human and natural activities. This data is too old to use and more recent data should be collected and used so that the wetlands information is accurate and precise.

167) **Page 26, 6 FWP Analysis of Direct Impacts and Pages 43 through 45, 6.4 Summary of Direct Impacts-Intermediate RSLE Scenario, Draft Appendix O, Wetland Value Assessment Modeling and Pages 7 through 9, 1.6.1 Design Considerations, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the high sea level change scenario should be used because updates on sea level change are showing higher change quicker and to be conservative about wetland losses and mitigation needed for those losses. **See Pages 9 and 10, 1.8.1 Orange-Jefferson CSRM, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** which states that "Noteworthy of the areas is that they are highly susceptible to rising sea level, with studies suggesting that region relative sea-level rise rates … have been significantly higher than presumed eustatic rise rates." **167**

168) **Page 26, 6.1.1 V1 Emergent Marsh, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS states that "100 percent shallow water is assumed to have minimal habitat suitability … optimal vegetative coverage is assumed to be 100 percent … This assumption diverges from the general biological understanding that optimum cover falls in the 60 to 80 percent range. Selection of 100 percent marsh cover as the optimal habitat conditions is based upon several factors.".

The FR/EIS should state clearly what factors override the biological understanding that 60-80% marsh coverage is optimal. Currently, the Corps provides no documentation for its assumption that 100% is optimal for vegetative marsh coverage.

The assumption that "100 percent shallow water is assumed to have minimal habitat suitability" is contradicted on **Page 27, 6.1.2 V2 Percent Submerged Aquatic**

Vegetation, which refers to SAV, a type of wetland that needs shallow water and therefore documents that not all shallow water has "minimal habitat suitability". In addition, on **Page 29, 6.1.3 V3 Interspersion,** the FR/EIS states "The marsh/open-water edge provides cover for postlarval and juvenile organisms. Smaller, isolated ponds are less turbid and contain more aquatic vegetation, thereby providing more suitable waterfowl habitat" which contradicts the assumption that shallow water has "minimal habitat suitability". Finally, **Page 30, 6.1.4 V4 Percent Open Water less than 1.5 feet**, the FR/EIS states "Deeper water is assumed to be less biologically productive than shallow water because sunlight, oxygen, and temperature are reduced as depth increases. Shallow water also provides better bottom access for waterfowl, better foraging habitat for wading birds, and more-favorable conditions for the growth of aquatic vegetation … Optimal shallow-water conditions in fresh/intermediate marsh are assumed when 80 to 90 percent of the open water is equal to or less than 1.5 feet deep." **168**

Page 27, the FR/EIS states that "It was assumed that the emergent marsh that is lost is converted to water, and therefore the acres lost from the marsh are added to the water acres." This assumption is faulty. The loss could be due to emergent marsh that was legally or illegally filled or dredged for development.

169) **Page 31, 6.1.5 V5 Salinity, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS should not use salinity as a double count for vegetation and fish and wildlife. Salinity impacts on both are very variable depending on the wildlife species of interest. Salinity should be used once for vegetation only. **169**

170) **Page 33, 6.2.1 V1 Stand Structure Draft Appendix O, Wetland Value Assessment Modeling,** for swamp modeling, the FR/EIS states that tree species composition is not considered a limiting factor. There is no documentation to support this assertion. Some trees have a different decomposition rate for leaves, different nutrient content, different rate of decay and cavity formation, etc. The Corps should document its assertion here. **170**

171) **Pages 34 and 35, 6.2.2 V2 Stand Maturity and Page 39, 6.3.2 V2 Stand Maturity, Draft Appendix O, Wetland Value Assessment Modeling,**, the FR/EIS uses 16 inches for bald-cypress and 12 inches for water tupelo as older canopy-dominant and co-dominant trees. These diameters are very small and larger trees, in general, are more attractive to wildlife due to cavity formation which is due to decay rates and probability. The most important item for wildlife in swamps for trees is that they be mature or even better old-growth in size and age. Optimum growth conditions on managed lands should not be used for rate of tree growth for natural areas because they assume a higher rate of growth than occurs naturally. **171**

172) **Page 36, 6.2.3 Water Regime, Draft Appendix O, Wetland Value Assessment Modeling,** the use of existing water surface elevations in the Sabine and Neches Rivers is based upon data that is 14 years old. Changes may have occurred in water surface elevations. The Corps should re-verify the data to ensure it reflects current conditions for water surface elevations. **172**

173) **Page 37, 6.3.1 V1 Tree Species Composition, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS assumes that "more production of mast and other edible seeds is better than less, and that hard mast is more critical than soft mast because it is available during late fall and winter and has high energy content." This assumption does not take into account that different leaves and mast may have different microbes or different decomposition rates which affects the lower part of the food chain/web which ultimately affects food and wildlife populations. More than what the model presents must be taken into account for bottomland hardwood forested wetlands. **173**

174) **Pages 41 and 42, 6.3.6 V6 Surrounding Land Use, Draft Appendix O, Wetland Value Assessment Modeling and Page 18, Draft Appendix D, Engineering Design, Cost Estimates, and Cost Risk Analysis,** the FS/EIS states that "The review group had no specific information regarding future land use or development changes in the areas surrounding the construction right-of-way." It would not be difficult to ask local entities, like cities and counties, what future growth they have permitted or that they envision in their local plans. In addition, the group could get information from the Corps about legal and illegal Section 10/404 permits in the past and extrapolate that out to the future. Finally, Google Earth could be used to look at rate of loss of wetlands for swamps and bottomland hardwood forested wetlands and use this as an approximate figure for future growth. Since the group knows that 4 million additional people will be in the project area in the next 50 years the amount of land space needed for that increased population could be determined and could then be distributed according to past growth patterns. There are estimates by U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department about losses of certain kinds of wetlands over a certain year period or estimated as loss/year. **There is no excuse for not preparing or getting information that tells you what land and wetlands losses may occur in the future.** **174**

The assumption on **Page 42** that "changes in surrounding land use would occur with or without the project" is a false assumption when looking at how roads and other developments from the past have provided access and a "sense of protection" which induced growth.

175) **Pages 42 and 43, 6.3.7 V7 Disturbance, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS fails to analyze the impacts that disturbance will have with regard to non-native invasive plant species and feral hog spread. **This should be done since one of the most important problems is how fragmentation and a lack of connectivity allow non-native species to invade and or take over natural habitats. This proposal will create more disturbance and stress for habitats both within the outside the levees/flood walls.** **175**

176) **Page 46, 7 FWP Analysis of Indirect Impacts of Orange-Jefferson CSRM Plan, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS ignores most cumulative impacts that population growth of 4 million additional people will have (or the proportionate share for Orange-Jefferson Counties) and residential, commercial, and industrial development will have.

This makes no sense when the FR/EIS states on **Pages 7-3 and 7-4** that "Deepening the channel would allow the saltwater wedge in the deep draft navigation channel to reach further inland and increase salinity in the Lower Neches and Sabine River channels, as well as Sabine Lake." Already the Big Thicket National Preserve (BTNP), Beaumont Unit, which was expanded south of the original Beaumont Unit and south of the Lower Neches Valley saltwater barrier, has been exposed to higher salinity levels in 2011 in cypress swamps. **176**

In addition, storm surge could be directed and more focused due to its deflection off of the levees/walls on upstream areas like BTNP property and could have additional impacts. Modeling of storm surge conditions and their effects on BTNP, Beaumont Unit, should be conducted by the Corps. The FR/EIS is silent about impacts to the BTNP and how the Corps will address these impacts. This is not acceptable. The FR/EIS is silent about impacts to the BTNP and how the Corps intends on address these impacts. This is not acceptable. Degradation of a National Park System unit is not acceptable. This is a significant environmental impact that this proposal and all cumulative actions with environmental impacts has and analysis with mitigation must be done. The FR/EIS fails to quantify the impacts so that the public knows how many areas, both inside and outside the levee/flood wall system, will be impacted and how they will be impacted.

177) **Pages 51 through 55, 7.1.3 WVA Coastal Marsh Modeling of Indirect Impacts, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS refers on **Pages 51 and 52** to "Lumping all polygons of one marsh type for the WVA modeling … The total amount of the classified water in each basin … is included in the V1 water acres". This may obscure where the losses occur and what level of impacts occur in what geographic area for open water and marshes. The model may dilute impacts on better areas and increase impacts on poorer areas. It is a concern that the model may average out or oversimplify what occurs during a model run. **177**

Page 54, the FS/EIS states "Impact to fisheries access (V6) were assessed based on limited, preliminary information". The Corps should state when the information will not be limited or preliminary and will be made available to the public for review and comment and Corps response.

Page 55, the Crops must do more than "final design **will attempt** to minimize impacts". The final design "must" minimize" impacts.

178) **Page 56, 7.1.4 Intermediate and High RSLE Scenarios and Page 69, 7.2.2.3 FWP Condition, Draft Appendix O, Wetland Value Assessment Modeling,** the FS/EIS states that "indirect fisheries impacts were not modeled for the intermediate and high RSLR scenarios". This is not good. This many underestimate impacts due to sea level rise.

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When the FR/EIS states that "Higher tidal inundation would improve fisheries access even with the structures in place" this does not necessarily relate to better fishing. The key is the condition of the habitat.

179) **Pages 56 through 63, 7.2.1.2 FWP Condition, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS should state clearly how much flow is needed for flap gates and other culverts to open and allow flow. **Page 57,** the FR/EIS should state what the "greatest extent possible" means when dealing with impacts on the floodplain. **179A**

Page 58, the FR/EIS states that "Hydrologic flows in the FWP condition would thus be very similar to FWOP flows and in location, duration and magnitude, both inside and outside of the levee system." The Corps should quantitatively show what "very similar" means. **179B**

Page 58, the FR/EIS should determine how it will monitor if "Groundwater flow from shallow aquifers may be affected by compaction … due to the weight of the overlying levee, or by construction of seepage barriers beneath the levee". **179C**

Page 58, the monitoring and adaptive management plan should be available now so that the public can review and comment on its adequacy and appropriateness. **179D**

Page 59, the Sierra Club believes that the statement that "no direct impacts were identified on most of the marshes, bottomland hardwoods and swamps located inside and outside the levee system" is overly broad and does not tell the public how many, where, and how many acres of marshes bottomland hardwoods and swamps located inside and outside the levee have indirect impacts. **179E**

Page 59, use of 20 year old data for "pattern and growth of development" that appears to be from another part of the United States is not sufficient for this analysis. We need something that is local and is up-to-date. **179F**

Page 59, the FR/EIS fails to tell how many areas, acres, and types of wetlands are caught between the new levee and bluff and would be cutoff from daily tidal inundation or have disrupted hydrology and impounded rainwater, and eventually die. **179G**

Page 59, if construction zone impacts would block the flow of small channels feeding adjacent marsh or swamp then as mitigation a connection to these areas for water should be provided if at all possible. **179H**

Page 63, the FR/EIS should commit to levee realignment and not say "may be recommended" and may be possible".

180) **Page 67, 7.2.2.3 FWP Condition, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS states that "Daily flooding of natural areas and wetland creation would occur as they would have under the FWOP condition … in the FWOP condition with only minimal differences … It is assumed that this development would continue in the FWOP condition, and therefore the alternative would cause no impacts related to induced development ".

No matter how the proposal attempts to mimic the natural flooding of wetland areas there will be a difference because some wetlands will be destroyed, some wetlands will be degraded, and some of the floodplain will be developed due to the levees/flood walls. The Corps should quantify the "minimal differences" so that the public can understand what this term means. Of course there will be induced development since protection and more access to the property with levees and flood walls will occur. To suggest otherwise ignores past development history. The quantification of this induced development must be presented in the FR/EIS so the public will have an opportunity to review and comment on this environmental impact. Some type of mitigation should be required for this induced development since more land will be paved (impervious surface) and there will be more non-point source water pollution runoff and more wetlands will be degraded or destroyed. **180**

181) **Page 70, 8.1 Summary of TSP Impacts and Mitigation Needs, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS calls mitigation costs small but the actual mitigation plan and cost are not known to the public. The Corps must be transparent and not release a FR/EIS that is incomplete and does not have important information that the public should have available for review and comments and then a Corps response to comments. This is a transparency issue where the Corps does not show the public what mitigation will cost and there is no complete mitigation plan. **181**

182) **Pages 70 through 74, 8.2 Description of Potential Mitigation Sties and Conceptual Mitigation Plans, Draft Appendix O, Wetland Value Assessment Modeling,** the FR/EIS should state clearly what "to the extent practicable" means with regard to avoided or minimized adverse impacts on ecological resources. The public deserves to know what this truly means from the Corps perspective.

Page 71, the fact that the FR/EIS states that "Selection of potential mitigation sites and modeling of benefits will be conducted in coordination with resource agencies," just means that the public does not get to have meaningful input about these mitigation sites and the mitigation plan which has not been completed .

Page 71, the FR/EIS states that there could be "possible improvements to the forested wetland areas targeted for conservation." The Corps should be transparent and state what these "possible improvements" are. The public should know so that it can review and comment on their adequacy and appropriateness. **182**

Page 73, the FR/EIS should state clearly what it means when it says "Other benefits could b earned by making improvements". Earned by whom, for what, and for how long? Will this mitigation be done in perpetuity?

Page 74, the FR/EIS states that "during final feasibility planning, fully-realized mitigation plans will be developed in consultation with the resource agencies and presented in the FIFR-EIS". This means the public has taken away from it the opportunity to review and comment on these mitigation plans (fully-realized) and then have the Corps respond to

its comments in writing. It is not in the spirit of NEPA to reduce transparency by conducting important analysis and planning for the final EIS and not for the draft EIS. Shame on the Corps for steering important analysis and planning to a part of the NEPA process where the public has less input and less transparency about what the Corps thinks about the public's comments.

183) **Attachment C, WVA Model Output of Direct Impacts, Draft Appendix O, Wetland Value Assessment Modeling,** there are incorrect calculations on many of the 13 sheets. For instance:

1. a. Sheet 1, BH2, Net (FWP-FWOP), is listed as -2.18 and it should be -2.19

b. Sheet 2, BH12, Net (FWP-FWOP), is listed as -0.30 and it should be -0.31

c. Sheet 3, S3, Net (FWP-FWOP), is listed as -3.12 and it should be -3.11

d. Sheet 4, S9, Net (FWP-FWOP), is listed as -14.43 and it should be -14.44

e. Sheet 7, F-5, Net (FWP-FWOP), is listed as -1.01 and it should be -1.02

f. Sheet 8, F-7, Net (FWP-FWOP), is listed as -0.60 and it should be -0.59

g. Sheet 8, F-8, Net (FWP-FWOP), is listed as -3.12 and it should be -3.11

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h. Sheet 9, F-9, Net (FWP-FWOP), is listed as -9.00 and it should be -9.01

i. Sheet 4, I-1, Net (FWP-FWOP), is listed as -1.78 and it should be -1.77

j. Sheet 4, B-3, Net (FWP-FWOP), is listed as -4.42 and it should be -4.43

2. The “Net Impacts” figures, shown on sheets 5 through 13, do not have a formula for how they are derived so that the public knows what this phrase is and means, how these figures were derived, and thus the public cannot check these figures for accuracy.

184) **Attachment D, WVA Model Output of Indirect Impacts, Draft Appendix O, Wetland Value Assessment Modeling,** there are incorrect calculations on many of these 15 sheets. For instance:

1. a. Sheet 1, BH Indirect-1, Net (FWP-FWOP), is listed as -0.29 and it should be -0.30

b. Sheet 2, S Indirect-2, Net (FWP-FWOP), is listed as -0.77 and it should be -0.78

c. Sheet 3, F Indirect-2, Net (FWP-FWOP), is listed as -5.18 and it should be -5.17

d. Sheet 4, F Indirect-3, Net (FWP-FWOP), is listed as -5.76 and it should be -5.75; and Open Water is listed as -24.32 and it should be -24.31

e. Sheet 7, B Indirect-3, Net (FWP-FWOP), is listed as -3.57 and it should be -3.56

f. Sheet 8, B Indirect-5, Net (FWP-FWOP), is listed as -25.27 and it should be -25.26 **184**

g. Sheet 10, B indirect 3, Net (FWP-FWOP), is listed as -2.78 and it should be -2.77

2. The “Net Impacts” figures, shown on sheets 3 through 15, do not have a formula for how they are derived so that the public knows what this phrase is and means, how these figures were derived, and thus the public cannot check these figures for accuracy.

The Sierra Club appreciates this opportunity to comment. Thank you.

Sincerely,

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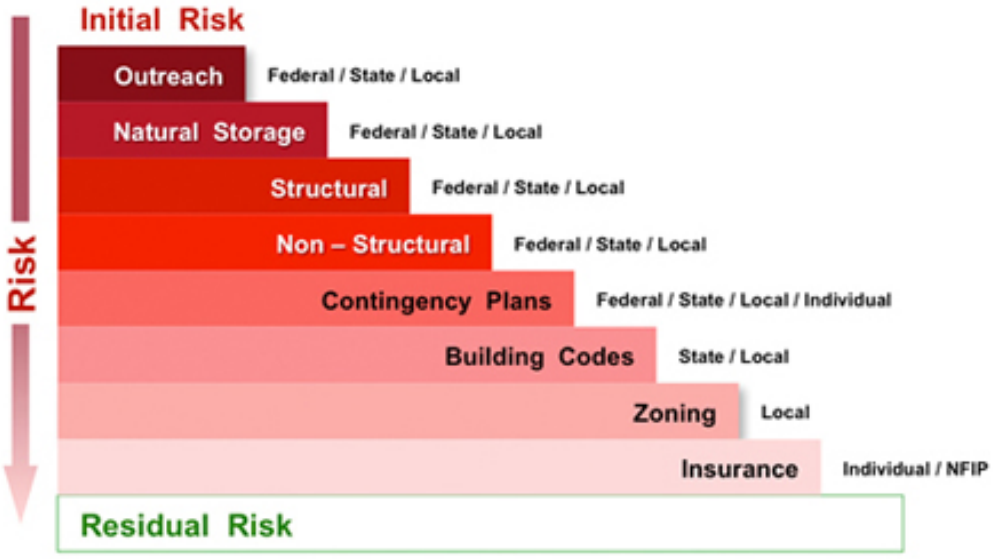
RESPONSE TO COMMENTS

Comment No.	Response
1	The DIFR-EIS described and compared impacts of all alternatives in the final array. In addition, direct impacts have been developed using a conservatively-wide construction right-of-way. This was done to ensure that impacts of the Recommended Plan have been disclosed. If changes to the TSP result in a Recommended Plan with significantly different impacts from those disclosed in the EIS, then a supplemental report will be provided for public review.
2	This feasibility report presents a programmatic overview of CSRM problems and opportunities in the central Galveston region (Galveston, Harris, and Chambers Counties) and a programmatic assessment of ER opportunities for the entire six-county study area. The programmatic assessment is a listing and screening of measures identified as having high potential to demonstrate Federal interest and result in successful CSRM and ER projects. The list of measures is provided in Appendix A. The only measures and alternatives fully evaluated by this feasibility study, with the intent of recommending a plan for Congressional review and authorization, are those associated with a new storm surge risk reduction system for the Orange-Northeast Jefferson County area, and improvements to the existing Port Arthur and Freeport Hurricane Flood Protection projects. No recommendations regarding the feasibility or impacts of the remaining measures are included in this feasibility report; thus detailed analysis of their impacts in this NEPA document is not required. These measures could be fully analyzed in future, separate feasibility studies.
3	Comment noted.
4	Section 2.3.2 of the Main Report summarizes both long-term positive and negative effects of storm surge on the region. An exhaustive list of effects is not needed to comply with the purpose of NEPA.
5	Protection of the environment is not optional and has not been considered so in development of the Recommended Plan.
6	Repairs and reconstruction of homes, industry and infrastructure damaged by Hurricane Ike occurred in the absence of a coastal storm risk management project. The three study areas developed and will continued to grow because of multiple benefits present in the area which are unrelated to the proposed coastal storm risk reduction project. The proposed project would reduce the risk of storm surge damages and loss of life in currently developed areas of Orange County; it would not reduce surge risks to undeveloped areas. Other non-structural measures, such as evacuation plans, would also be utilized to reduce residual risks. Proposed improvements in Jefferson and Brazoria Counties would affect areas which are already behind existing levee projects.
7	There is no ironclad rule governing the scope of the alternatives to be included rather the development of alternatives should be guided by the rule of reason. The “rule of reason” requires the planning process to set forth only those alternatives necessary to permit a reasoned choice. The study is not required to report on every conceivable alternative in the

	study area, rather the USACE only should consider a reasonable range of potential feasible alternatives to satisfy the planning objectives. We fully understand that other conceivable alternatives may exists, but the responsibility for flood risk management in the United States is a shared responsibility between multiple Federal, state, and local government agencies with a complex set of programs and authorities. For example, other flood risk management measures may still exist but they could be addressed under local and state programs. The figure below provides a general overview of the concept of shared responsibility for addressing flood risk management. 
8	Historically, stainability or growth of populations in the study area is highly dependent upon the major employment sectors, not necessarily impacts from episodic storm events. Due to the close proximity to waterways and intermodal transportation connections we would not expect to see large scale relocations of population densities even under the future without scenario. Measures implemented outside of the federal action under the FWOP conditions would be highly speculative and would not allow for a baseline assessment of the proposed federal action. Analysis shows that estimates for expected annual damages under the current conditions are largely consistent with the historical post-flood response by the affected population, and that while there remains uncertainty with respect to possible future post-flood responses as flood risk increases over time, the range of scenarios considered does not change relative to the actions of others nor is the economic justification of the project compromised.
9	The Port Arthur and Freeport CSRM Plans consist of modifications to existing levee systems. The report clearly states that no new levee segments are proposed as part of these modifications. Thus, there would be no impacts associated with new levees or levee extensions.
10	The comments of all parties are summarized for the draft and final reports. Contrary to the assertion, the Sierra Club was not specifically excluded from scoping efforts.
11	This section has been revised in the FIFR-EIS.
12	The project authorization includes broadly applicable language to facilitate plan formulation. Study objectives and project purposes are refined during plan formulation.

13	Comment noted.
14	Detailed plans and construction periods were developed during final feasibility analysis and presented in the FIFR-EIS. This cost estimate includes costs for pipeline and other relocations, and mitigations costs. Cost estimates presented in the DIFR-EIS were developed based on costs from similar recent projects, which included pipeline and relocation costs. Estimated mitigation costs for the Orange-Jefferson CSRM Plan were included in the total project costs presented in the DIFR-EIS.
15	The referenced information is not critical for plan formulation or selection. It will be removed from the FIFR-EIS.
16	The FIFR-EIS contains general information on the existing conditions sufficient for development of the future without-project condition and evaluation of project impacts.
17	The Engineering Appendix (Sections 2.5 through 2.13) describes the hydrology and hydraulics analysis and results regarding storm surge impact areas and water elevations, wave run-up, induced damages to adjacent areas, relative sea level rise, and implications for levee heights. No significant impacts from induced damages were identified for the Recommended Plan.
18	Relative sea level rise will be added to factors causing erosion and shoreline retreat.
19	The names will be corrected in the final report.
20	See Response 14
21	The DIFR-EIS is merely attempting to accurately portray historic disruptions that have occurred after a large storm event such as Hurricane Ike. During the formulation of alternatives, buyouts was analyzed for those areas that would not be protected by structural alternatives but were not found to be economically justified per Corps policy. While life safety is a concern when formulating potential alternatives, an incremental component such as this would have to be economically justified. Outlying properties such as these may be candidates for participation in other programs that local jurisdictions can pursue such as FEMA's Hazard Mitigation program and can be carried out in conjunction with ongoing studies.
22	The local sponsor is responsible for maintenance of any existing system and is responsible for any deficiencies that may arise due to a lack maintenance. Alternatives for the two existing CSRMs were developed to provide a uniform level of protection. The IFR-EIS describes the level of risk reduction for the recommended alternative at each of the existing CSRMs.
23	See Response 22
24	Damage estimates discussed in the report are associated with storm surge impacts, only.
25	Comment noted; the text references other viewpoints.
26	See Response 22
27	The text will be revised.
28	The areas protected by the Jefferson component of the Orange-Jefferson and the Port Arthur CSRM are roughly the same therefore the listing of critical infrastructure in Jefferson County will be identical. Damage estimates were however modeled as independent events therefore no double-counting (relative to potential damages) exists. Since the Jefferson component has been dropped from the recommended plan, the critical infrastructure associated with the Orange-Jefferson CSRM in Jefferson County needs to be removed. We argue that refining and petrochemical manufacturing are critical infrastructure since they comprise a significant portion of the economic activity in the region and a significant

	portion of the refining and petrochemical manufacturing capacity of the nation as a whole. A significant storm event would potentially have far-reaching economic and societal consequences should these facilities become incapacitated including sharp rises in gasoline prices and/or gasoline shortages. Also, without these facilities, much of the other types of critical infrastructure, particularly those involving water, public safety, health, and education would not exist in the area.
29	Construction cost associated with sea level rise has been included in the overall cost for the final recommendation. Details related to future sea level and potential impacts the O&M plan, will be further developed under PED and future O&M manuals. The current recommendation uses an average annual O&M cost based on the selected sea level rise rate.
30	The final report will be revised to say "Problem and opportunity statements …were initially developed after scoping comments were received from...,and the affected public." In addition, the Congressional authorization for this study required that all six counties be addressed in the report; therefore, potential CSRM and ER measures for the whole study are discussed and measures are described in Appendix A. An alternatives evaluation and environmental impact analysis of CSRM measures for the Galveston region and ER projects may be conducted under a separate feasibility study.
31	Problem statements will be reworded to use less definitive verbs.
32	Specific risk to the commercial and residential property, real estate, and infrastructure has been included in the Economics appendix. As stated under comment #7 buying down flood risk is a shared responsibility between multiple Federal, state, and local government agencies with a complex set of programs and authorities. The USACE will continue to engage local sponsors to further reduce communities risk through program such as the Silver Jacks Program http://silverjackets.nfrmp.us/. Program such as this allows the USACE to improve and increase flood risk communication and present a unified interagency message. The opportunities were only used to develop the planning objectives for the study and guide in selection of the TSP. The fundamental purpose of the final recommendation for addressing Coastal Storm Risk Management. "Ecotourism and recreation opportunities" is beyond the scope of the water resource study, but this information will be passed along to the appropriate agencies and the USACE will continue to look to partner with others to develop ecotourism and recreation opportunities under the PED phase, but the cost for these features would have to independent of the final recommendation.
33	Sierra Club scoping comments, dated February 28, 2012, are included in Appendix F, pdf document page 32.
34	Appendix D (Engineering) Sections 2.15-2.17 provides a detailed analysis of the interior drainage analysis. It explains how flows would be maintained at FWOP levels. Main Report Section 7.2.1.1, Design Accommodations to Minimize Impacts, Figure 7-1, Sabine Regions Sub-basins and Drainages, and Engineering Appendix 2.15.5 describe the interior drainage analysis and design/location recommendations for the culvert system.
35	Section 5.2 of the Main Report will be revised to acknowledge that this reference was utilized in developing alternatives.
36	The Sierra Club was included on the mailing list for scoping comments and public comment on the draft report.
37	Environmental benefits were only used to screen the initial array of measures; environmental impacts were used as criteria in all subsequent screenings of alternatives.
38A	The study evaluated more than one alternative in sections 5.2, 5.3 and 5.4 of the DIFR-EIS.

38B	Sensitive habitat is a broad term which includes wildlife habitat. Operation and maintenance impacts were not an appropriate criteria for this early screening.
38C	Refer to Response 37. In addition, based on the results of the preliminary comparison of CSRM alternatives called the Gate and No Gate alternatives, the Neches River Gate alternative was eliminated from further consideration. Referenced statements have been taken out of context, and do not include explanatory material both before and between the quoted fragments. The screening was based primarily on cost since both the Gate and No Gate alternatives reduced the risk of storm surge to the same upland areas. A total cost was developed for the Gate and No Gate alternatives based on a previous Orange County engineering report. These costs did include environmental mitigation, although environmental mitigation was not called out as a specific line item in the cost comparison. Since mitigation costs developed by Orange County included only direct construction impacts, they could not be used to accurately compare alternatives when one of them, the Gate Alternative, would have more widespread impacts on the river system's hydrology, floodplain wetlands and fishery access. The section concluded that costs for mitigation of indirect impacts for either alternative would be dwarfed by construction costs, and therefore, environmental mitigation costs would not affect plan selection. Similarly, costs for cultural resource mitigation would be very small in comparison to construction costs, and also would not affect plan selection.
38D	The acronym for Expected Annual Damages (EAD) will be added to the FIFR-EIS. The DIFR-EIS clearly stated that levee system heights might be increased when RSLC was incorporated into the final design. Additional analyses in the final feasibility phase have resulted in the inclusion of the appropriate still water levels, RSLC and wave run-up components in the design of levee system heights for the Recommended Plan.
39	The DIFR-EIS identified a "Tentatively Selected Plan" (TSP) and a "Conceptual Mitigation Plan". Impacts of the TSP were clearly and thoroughly identified and disclosed. The types of mitigation anticipated at that time were discussed in the Main Report Section 6.1.3.2 and in Appendix O, section 8.0, and thus provided an opportunity for the public to review and comment on proposed mitigation in compliance with 40 CFR Section 1502.14 and 1502.16. Costs of the conceptual mitigation were considered in comparing alternatives presented in the DIFR-EIS. The report clearly stated that a final mitigation plan would be developed in compliance with Federal law. A final mitigation plan and the costs of that plan are presented in the FIFR-EIS.
40	Refer to Response 14
41	The DOW barge canal is a dead-end, artificial canal leading into the heart of the Freeport industrial zone. It has very little habitat value and therefore environmental impacts are negligible.
42	The sentence will be revised to clarify that no environmental impacts have been identified for the Freeport CSRM Plan, and therefore no mitigation costs, were included in the net benefit comparison table.
43	Refer to Response 21.
44	The type, purpose and condition of the other levees in the Freeport area have been taken into account in evaluating alternatives. Impacts associated with the proposed Freeport and Vicinity CSRM Plan are described in the FIFR-EIS. Refer to Response 21.
45	Refer to Response 39.
46	Refer to Response 21.

47	Refer to Response 1.
48A	We agree that the whole affected area needs to be assessed for impacts, and the environmental analysis in the DIFR-EIS and FIFR-EIS did just that. The report states that "No FWP impacts were identified for most of the areas vulnerable to RSLC in the FWOP condition." In other words, no RSLC impacts were identified for most of the affected area, but a few low lying areas would be inundated. The report includes descriptions of the areas that would be inundated.
48B	Refer to Response 34.
48C	The types of impacts described here are future without-project (FWOP) impacts. The impacts shown in Table 5-14 are net future with-project impacts; these are the direct and indirect impacts estimated to occur with project construction and relative sea-level rise. Cumulative impacts are addressed separately in Section 7.16.
48D	The report referenced the specific impacts of the proposed surge gates in the Cow and Adams Bayous. In this specific locale, higher tidal inundation would improve fisheries access, even with the structures in place. This is due to the particular configuration of the floodplains and structure locations. The statement was not overly broad or biased as asserted by the commenter. The environmental impact of the structures was acknowledged in the DIFR-EIS and the FIFR-EIS. Regarding estuarine soft bottom impacts from installation of the Adams and Cow Bayou surge gates, this water area has been included in the WVA impact analysis, and the loss will be fully compensated by shallow water restoration in association with marsh mitigation.
48E	Noise impacts have been addressed in the Main Report (Section 7.9). No light impacts are anticipated during construction as work would be restricted to day light hours. Both are temporary impacts and therefore do not affect cumulative impacts.
48F	It is not possible to estimate the time lapse between signing the Record of Decision and the start of construction. This is dependent upon approval from the Office of Management and Budget, Congressional authorization and Construction would take place in sequential phases over a series of years, and therefore, construction would be occurring in any one area for a much shorter duration of time.
49	Refer to Response 38D.
50	The costs utilized in the DIFR-EIS were conservatively high to ensure that inefficient plans were eliminated from consideration. Final estimated construction costs, which include pipeline and other relocations, have been presented in the FIFR-EIS
51	Further evaluation of the Beaumont A Alternative has resulted in it being eliminated from the Recommended Plan.
52	Rapid break.
53	Refer to Response 41.
54	Proposed improvements to the existing Port Arthur and Freeport HFPs do not increase the area of protection and thus have limited potential for increasing cumulative impacts. Projects referenced in the comment are not associated with the improvements proposed by this study and are part of the future without-project condition.
55	Impact analysis has determined that impacts are not sufficient to create a tipping point for affected resources (wetlands); the mitigation plan addresses incremental impacts of the recommended plan, not all impacts occurring in the future without the project.
56	Refer to Response 39. In addition, the term "to the extent practicable" is utilized by many regulations. It is not defined by the regulations because its meaning is commonly understood.

57	Compliance with the National Historic Preservation Act, including potential mitigation of historic property impacts, will be achieved with execution of the Programmatic Agreement that was provided for public review and comment in Appendix L of the DIFR-EIS. The PA includes a stipulation (Stipulation I, Section 3, Paragraph a, Subsection (2)) regarding the need to provide opportunities for public comment.
58	The referenced section refers to standard USACE Real Estate requirements language. Other sections of the report state that the plan assumes that borrow material will be obtained from commercial sources (Main Report Sections 7.4.1, 7.7.2; Appendix D, Section 5.1). If new borrow areas are identified during final feasibility planning or prior to construction, these areas will be evaluated for impacts in coordination with the resource agencies and the appropriate NEPA document will be prepared. Staging areas needed to support construction would be located in previously disturbed or non-wetland upland areas.
59	Appendix D, Section 9.2, states that alternative costs "…were developed using a Class 4 parametric approach using both historical and unit costs." Historical costs were based on total costs from a recent engineering evaluation of essentially the same project, and include all costs, including relocation costs.
60	Operations and maintenance costs will be developed for the Recommended Plan and provided in the FIFR-EIS.
61	The cumulative impacts section includes a discussion of potential FWOP impacts to wetlands from other past, present and reasonably foreseeable projects in the study area (including the authorized Freeport Harbor Channel deepening project, the authorized Sabine-Neches Waterway deepening project and others. Wetland impacts are the only significant environmental impacts that have been identified for the TSP. Only negligible impacts have been identified for the Freeport and Port Arthur CSRM Plans. NEPA documents, per 40 CFR 1500.1 must concentrate on issues that are truly significant to the action in question, rather than amassing needless detail. A lengthy recitation of all possible developments in the project area is not significant to the action in question
62	While RED is one of the accounts to be considered when developing project alternatives, the determination of a recommended plan rests in the identification of the NED per Corps policy. Since RED was determined to be relatively proportional to NED across all alternatives, RED itself would not change the overall ranking of alternatives. While RED benefits can help tell the story of a recommended plan, the current Corps model for assessing RED benefits was of little use due to the configuration of the study.
63	Refer to Response 6.
64A	Refer to Response 38D
64B	Refer to Response 1. In addition, the acronym will be added to the Main Report Acronym List.
65	Section 6.8 (Consistency with Other State and Federal Laws) of the Main Report provides a summary of the status of compliance with applicable laws and regulations. Impacts analyses, such as those referenced here, are presented in Section 7.8 (Environmental Consequences) of the Main Report and in many cases, additional supporting analyses are presented in appendices. In this case, Section 7.8 and Appendix I, Chapter 2 report the air quality impacts of the TSP in tons/year of air pollutants that would be released by equipment to be used in constructing the projects and evaluate the overall air emissions impacts for the Sabine and Brazoria regions.
66	Refer to Responses 56 and 65. In addition, Section 7.7 and Appendix H report the TSP water and sediment quality impacts for the Sabine and Brazoria regions.
67	Refer to Response 56.

68	The Federal Water Project Recreation Act focuses on providing opportunities for fish and wildlife enhancement and recreation in conjunction with Federal water development projects if non-Federal sponsors agree to share construction costs and be responsible for operations and maintenance. No opportunities for enhancement were identified and thus no impacts to outdoor recreation in the area in anticipated.
69	Refer to response 56. In addition, as reported in Section 7.12.1 of the Main Report, prime farmland impacts in Orange and Jefferson counties represent about 0.3 percent and 0.005 percent, respectively, of the total farmland in each county. Clearly, this represents a negligible cumulative impact. The Port Arthur and Freeport CSRM plans have no prime farmland impacts.
70	See Section 7.13 of the Main Report for an evaluation of floodplain impacts.
71	The comment that over 2,000 acres of wetlands will be destroyed is incorrect. As stated in Section 7.6.2.1, indirect functional losses would occur to a total of 2,137 acres of marsh. Total direct and indirect impacts of the Recommended Plan would result in the actual loss of about 272.5 acres of marsh and forested wetlands. In addition, refer to Response 39.
72	Refer to Response 65. In addition, Section 7.6.1 of the Main Report presents an analysis of connectivity/fragmentation impacts. The Orange CSRM Plan is the only part of the Recommended Plan that involves construction of a new levee system. The alignment for this plan has been placed along the upland-floodplain transition. The upland area consists of urban, residential and industrial areas, and thus therefore the levee systems does not fragment natural habitat. Impacts resulting from the impoundment of small areas of the floodplain by the alignment would be fully compensated by the mitigation plan.
73A	Section 7.1.1 of the Main Report clearly states that the Recommended Plan would impact the Tony Houseman and Lower Neches River Wildlife Management Areas.
73B	The subtotals and totals in Table 7-1 of the Main Report have been checked and are correct. As stated in the report, the Freeport CRSM plan include no new levee segments and thus does result in fragmentation/connectivity impacts
73C	Refer to Response 17.
74	Refer to Responses 17 and 72.
75	Refer to Response 34. In addition, Operating Plans are always developed after completion of the feasibility report. They are based on issues and concerns that have been presented in the draft report and subject to public review and comment. The Operating Plan would be developed in consultation with resource agencies during the Pre-Construction Engineering and Design (PED) Phase.
76	Areas of indirect hydrologic impacts are described in Appendix O, Section 7.1.
77	No environmental impacts have been identified for the Port Arthur CSRM Plan. The term “negligible” was used to be conservative in the impact assessment.
78	Refer to Response 41.
79	The report discusses a range (from low to high) of potential relative sea level change (RSLC). This range is prescribed by USACE guidance.
80	Refer to Response 9.
81	Refer to Response 61.
82	Refer to Responses 71 and 72. In addition, the impacts to Cow and Adams Bayou are functional impacts, not direct impacts. The amount of impact and the appropriate compensation will be determined with the WVA model.
83	Refer to Response 72.

84	Refer to Responses 39 and 48D.
85	Response 41. In addition, the Recommended Plan will have no impacts in the Little Cypress Bayou area.
86	Refer to Response 41.
87	Air emissions modeling and a summary of impacts are reported in Appendix I. The Recommended Plan does not cause climate change. Project impacts are being addressed within the context of future without-project conditions that are affected by climate change. Only impacts that result from project construction or operation will be addressed by the mitigation plan.
88	Refer to Response 57.
89	Refer to Response 69.
90	Refer to Response 6.
91	Refer to Response 6.
92	Refer to Response 17. In addition, the Recommended Plan would not impact the Big Thicket National Preserve
93	Section 7.16.2.3 discusses the cumulative impacts of the multiple USACE projects that have been constructed in the Brazoria region, including the GIWW, the Brazos River Diversion Channel, and the Freeport Harbor Channel 45-foot project.
94	Refer to Response 71.
95	Section 7.20 of the Main report will be revised to acknowledge energy needed to operate and maintain the new levee system.
96	Refer to Response 14.
97	Refer to Response 6. In addition, “corporate” has more than one acceptable definition. In this case, the term is defined as a group of people authorized to act as a single entity and recognized as such in law.
98	Refer to Response 37.
99	Refer to Response 2.
100	“Most reasonably maximizes” is a USACE policy requirement; it is interpreted according to the specifics of each individual project.
101	The meaning of the word or phrase in question is commonly understood.
102	The study utilized the RSLC methodology required by USACE and the recent IPCC reports. The IPCC citation in Appendix B will be revised to 2014.
103	Refer to Response 2.
104	Refer to Response 37
105	The positive and negative effects of storm surge on the coastal environment were presented in Section 2.3.2 of the main report. Environmental benefits were only used to screen the initial array of measures, as a quick measure of the size of area over which environmental impacts of storm surge, such as scour and saltwater intrusion, would occur in the absence of the measure. Environmental impacts were used as criteria in all subsequent screenings of alternatives.
106	These estimates were for plan comparison purposes only. They were conservatively high to ensure that inefficient plans were identified and eliminated. The actual cost of the recommended plan will be presented in the FIFR-EIS.
107	The referenced initial screening criteria included “system-wide hydrologic impacts” as noted in Table 5-4.

108	Refer to Response 2.
109	Refer to Response 2.
110	Refer to Response 2.
111	Refer to Response 40.
112	Refer to Response 40.
113	Refer to Response 40.
114	Refer to Response 40.
115	An additional assessment is being conducted to reinforce the determination that non-structural alternatives were not appropriate for this study. The only area where non-structural alternatives may be applicable is at the Jefferson-Orange CSRM where there is no existing system. Nonstructural alternatives (particularly permanent evacuations) make sense in areas with wide variations in topography and considerable numbers of structures being damaged at frequent events. Orange County is the antithesis of this. The topography is flat and a significant number of structures do not begin to get damaged until the 20-year event. For this event, over 3,000 single- and multi-family houses would need to be evacuated in order to have a reasonable impact on reducing storm damages. Taking out this many structures would have a detrimental impact on area's tax base and therefore would more than likely not be supported by an implementing sponsor. The Lone Star conservation plan would likewise not be appropriate for this area, as it would require acquisition of large areas of private property from willing sellers and conversion of suburban communities to fish and wildlife conservation areas. This would likewise have an adverse effect on the area's tax base and the social fabric of this community.
116	The potential failure issues associated with this language of the report concern the overtopping failure probability of the Freeport and Port Arthur levee systems. The potential failure issues associated with this project are currently not an operations and maintenance concern borne solely by the sponsor. The current status of the O&M issues to be addressed will not affect the recommended plan of this project. The recommended plan for both Freeport and Port Arthur are relatively the same size and scope of what the sponsor's currently maintain and in one case, there is possibility for less maintenance with this project. The recommended plan for the Orange county area will have a different sponsor than the Port Arthur or Freeport levee systems. This report makes the assumption that if this project is not implemented then both the Freeport and Port Arthur systems would have no avenue to address overtopping of the levee system due to RSLC. There might be things that could happen, but at this time, the assumption made by the USACE will remain as stated.
117	Refer to Response 38D.
118	Refer to Response 115.
119	Refer to Response 115.
120	Refer to Response 2.
121	Due to the Port Arthur SQRA being in a draft status at the time of this report submittal, some of the results from the finalized Freeport SQRA were utilized in determining the path forward for the system. The SQRA is currently not a document that goes through the public commenting process. It is finalized through extensive reviews within the USACE

	and then released to the public. The public can then provide concerns, but the USACE will not change the findings of the SQRA.
122	The maintenance concerns of the system are not due to an issue with the local sponsor 'not being able to keep up' with the maintenance issues. These concerns are present due to more stringent USACE guidance and policy concerning operations and maintenance of levee systems. The sponsor currently has a plan in place to address these maintenance issues and is continually working to resolve the issues.
123	Refer to Response 38D.
124	Depth-damage functions that had previously been used in previous studies for the Texas coast were deemed to be inappropriate because they did not account for saltwater effects of short durations. Due to this being one of the first studies in the Southwestern Division to be conducted under the Corps' Planning Modernization where time and funds are limited, this particular study did not have the time nor the funding to develop Texas Coast-specific depth-damage functions. The use of the New Orleans functions was vetted and approved through the Corps' vertical team early on in the study.
125	Refer to Response 124.
126	Refer to Response 124.
127	Refer to Response 124.
128	Refer to Response 124.
129	Refer to Response 115.
130	Refer to Response 101.
131	Refer to Response 115.
132	Refer to Response 115.
133	Refer to Response 37.
134	Refer to Response 61.
135	Refer to Response 38D. The USACE, as part of efforts to reduce the time and tax dollars that it takes to complete studies, has required the use of SMART Planning guidelines in preparing new feasibility reports such as this one. These requirements, which were codified in law by the Water Resources Reform and Development Act of 2014 (P.L. 113-121, June 10, 2014), specify the level of detailed analysis to be performed in developing the Tentatively Selected Plan (TSP) and relegate detailed design effort to the final feasibility analysis. The guidelines also set much shorter time frames for the completion of feasibility reports. These changes are intended to reduce the length of the report in compliance with 40 CFR 1500.4, while adequately addressing all potential significant impacts of the proposed project.
136	Refer to Response 51.
137	"Fairly frequent" has now been computed and is estimated on an annual basis at two-thirds of a percent chance (0.67%/yr).
138	Refer to Responses 1, and 115. "Catastrophic failure" means that it is breached.
139	LSAC will be added to the Acronym List in the Main Report.
140	Refer to Response 115.
141	FOS will be added to the Acronym List in the Main Report.

142	The year in which Hurricane Carla occurred will be corrected in Appendix D.
143	There are no 130-year overtopping projections. We have computed 1yr, 2yr, 5yr, 10yr, 20yr, 50yr, 100yr, 500yr.
144	In subsequent phases of the project, more detailed analyses will be conducted and will possibly lead to utilization of a higher level of assurance.
145	Since the submittal of the report the USACE has changed what RSLC scenario it will use for the project. The project currently will utilize the intermediate level for all features. Currently all features on the project have the capability to be adaptable to higher RSLC scenarios, if found to be necessary in the future.
146	Since submittal of this draft report, the adjacent impacts were calculated and are considered negligible. The language stated above has been removed from the report.
147	Modeling has been completed for the project. During subsequent phases of the project, a more extensive analysis will be completed. The report states “More detailed engineering analyses will be conducted during the PED phase.”
148	The referenced statement in Section 2.13.8 of Appendix D will be corrected as suggested.
149	Comment noted.
150	Refer to Response 34.
151	Refer to Response 34.
152	The estimated increases are shown in the tables in the same section (2.17.3) of Appendix D.
153	The distance can be estimated by looking at the figure in the report.
154	Sensitivity analyses, conducted to investigate the impacts of differently-sized constrictions, determined that water surface elevation and salinity impacts described in this section, are robust.
155	This level of detail will not be determined until pre-construction engineering and design phase.
156	Refer to Response 155.
157	Refer to Response 155.
158	Excavated material generated as a by-product of construction will be used in the construction of the levee system. Thus, environmental impacts have already been identified in the direct impact analysis.
159	Refer to Response 101.
160	Environmental impacts associated with loss of forested wetlands are described in detail in Sections 7.5 and 7.6 of the Main Report, and in Appendix O.
161	Pipeline relocation costs were embedded in the unit costs used to prepare the estimate. The report will be revised to report the correct information and for consistency.
162	Refer to Responses 39 and 135.
163	The information provided supported the analysis presented. The percent change from intermediate to high is between those already provided and can easily be interpolated by the reader.
164	Refer to Response 39. In addition, the WVA models were developed for habitats like those found in the project area. Independent review of the model has confirmed that it is applicable and appropriate for determining impacts and quantifying mitigation in the project area.
165	As explained in Appendix O, marsh vegetation mapping is based on a USGS 2010 classification; forested wetland acreages utilized the 1992 National Wetland Inventory but

	were also updated using current imagery, and spot checked by groundtruthing. Groundtruthing of 100 percent of a project area of this size is simply not possible. The marsh classification determined that while salt marsh is present to the south, there is none in the project area.
166	Spot checking confirmed that the reference areas had not changed to any significant degree and therefore the data was applicable.
167	Refer to Response 38D.
168	As explained in Appendix O, some aspects of the WVA Coastal Marsh Model concerning variables 1, 2, and 3 were found to have been defined primarily by policy and/or functional considerations of Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). These concerns are being evaluated with a sensitivity analysis to be presented in Appendix Q. As directed by HQUSACE, plan formulation for this study will be based on V 1.0 of the WVA model. The WVA model has undergone an independent technical review to ensure that it is a technically and theoretically sound and functional tool that can be applied to planning studies. This review (Final Model Review Report for the Wetland Value Assessment Models, dated 31 August 2010, Battelle Memorial Institute) determined that the model and its accompanying documentation are theoretically appropriate and technically sound. Furthermore, an agency technical review determined that the WVA model has been correctly applied to the S2G study. The WVA Model is a quantitative, habitat-based assessment methodology initially developed for use along the Louisiana coast but it has been confirmed that it is appropriate for application through the Galveston Bay region of the upper Texas Gulf coast. The same types of coastal habitat (Chenier Plain, emergent coastal marsh, bottomland hardwoods, and cypress-tupelo swamp) are present throughout the Sabine-Neches coastal watershed in both Texas and Louisiana, and in fact are a continuation of the same system. In addition, the areas contain the same fish and wildlife communities and similar soils and topography.
169	Refer to Response 168.
170	Refer to Response 168.
171	Data from optimum growth conditions results in a conservatively high impact estimate.
172	Based on current RSLR rates, the change in water surface over that time period would be around 3 inches, which is well within the range of error for any of the calculations and estimates used for this modeling effort.
173	Refer to Response 168.
174	Refer to Response 168.
175	Refer to Response 168.
176	Refer to Response 192.
177	Refer to Response 1. In addition, models are intended to be a simplification of reality and average conditions are typically utilized. Where possible, conservative assumptions were used that over-predict impacts so that impacts are not understated.
178	Refer to Response 168.
179A	Specifics regarding culverts and flap gates will be determined with final design. The reference on page 57 will be revised to state that the impacts will be minimized such that remaining impacts are negligible.
179B	Details on the interior drainage analysis is presented in Appendix D, Sections 14 – 17.

179C	As stated in the report, the location and extent of ground water flows will be determined during final design.
179D	The monitoring and adaptive management plan must be developed for the final mitigation plan, which cannot be finalized until the recommended plan is finalized.
179E	The referenced report studied general human behavior that is not geographically dependent.
179G	Details on indirect impacts are presented in Appendix O, section 7.2.2.3.
179H	Refer to Response 179G.
180	The Recommended Plan protects areas that have already been developed; it is not unreasonable to assume that developed areas will continue to be developed as they have in the past. This is not a project-related impact and therefore mitigation would not be required.
181	Refer to Response 39.
182	Refer to Responses 39 and 56.
183	These differences are the result of rounding and do not affect the results. Revisions are not appropriate. Formulas used in the WVA models are provided in the USFWS references for these models which are cited in the References section.
184	Refer to Response 183.