

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

**Appendix H**

**CLEAN WATER ACT SECTION 404(b)(1) EVALUATION**

**May 2017**

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

PROPOSED PROJECT: Sabine Pass to Galveston Bay, Texas, Coastal Storm Risk Management and Ecosystem Restoration Final Integrated Feasibility Report and Environmental Impact Statement (covering 3 separate project elements: Orange 3 CSRM Recommended Plan, Port Arthur and Vicinity CSRM TSP Recommended Plan, and Freeport and Vicinity CSRM Recommended Plan)

	Yes	No*
<b>1. Review of Compliance (230.10(a)-(d))</b>		
A review of the proposed project indicates that:		
a. The placement represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the placement must have direct access or proximity to, or be located in the aquatic ecosystem, to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative).	X	
b. The activity does not appear to:		
1) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act;	X	
2) Jeopardize the existence of Federally-listed endangered or threatened species or their habitat; and	X	
3) Violate requirements of any Federally-designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies).	X	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, an economic values (if no, see values, Section 2)	X	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see Section 5)	X	

	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)			
1) Substrate impacts		X	
2) Suspended particulates/turbidity impacts		X	
3) Water column impacts		X	
4) Alteration of current patterns and water circulation		X	
5) Alteration of normal water fluctuation/hydroperiod		X	
6) Alteration of salinity gradients		X	
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
1) Effect on threatened/endangered species and their habitat		X	

2) Effect on the aquatic food web		X	
3) Effect on other wildlife (mammals, birds, reptiles and amphibians)		X	
	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
c. Special Aquatic Sites (Subpart E)			
<p>1) Sanctuaries and refuges</p> <p>No wetland or other special aquatic site impacts are anticipated in conjunction with the Port Arthur and Vicinity or Freeport and Vicinity CSRMs. Wetland impacts of the Orange 3 CSRMs plan were avoided and minimized to the greatest extent practicable by modifying the new levee system's alignment location. Remaining unavoidable impacts of the Orange 3 CSRMs plan to "Sanctuaries and Refuges" would occur to approximately 45.0 acres as shown in the FIFR-EIS. Approximately 28.8 acres would be directly impacted by construction within the right-of-way, while approximately 16.2 acres are remnants that would be not affected by construction, but cut-off from the rest of TPWD property in the area. In the Tony Houseman Wildlife Management Area (WMA), approximately 1.4 acres of the right-of-way impacts are forested wetlands and adjacent waters. In the Lower Neches WMA, approximately 18.9 acres of the right-of-way are wetlands, with the majority of impacts occurring to coastal marsh. The TPWD wetland impacts have been evaluated and quantified with the Wetland Value Assessment model along with all wetland impacts of the Orange 3 CSRMs plan. The plan would not impact any TPWD structures. All impacts are fully compensated by the overall mitigation plan described for the Orange 3 CSRMs plan. TPWD has accepted the feasibility-level impact and mitigation analysis, but wants coordination to continue into the PED phase when further hydraulics and hydrology analysis would be conducted. Final approval or concurrence by TPWD cannot occur until requirements of Chapter 26 of the Parks and Wildlife Code are met, and that would occur after the project is authorized. At this time, no obstacles to this approval have been identified.</p>			X

2) Wetlands No wetland or other special aquatic site impacts are anticipated in conjunction with the Port Arthur and Vicinity or Freeport and Vicinity CSRMs. Direct wetland impacts to approximately 160.2 acres, would result from construction of the Orange 3 CSRMs plan. Indirect impacts on about 2,249.5 acres would be associated with functional impacts to fisheries access and sediment, nutrient and organic matter exchange in the extensive marshes in the lower Cow and Adams Bayous floodplains. These indirect impacts also include limited indirect hydrologic impacts from construction of the levee and surge gates in a few locations. Ecological modeling of impacts of the Orange 3 CSRMs plan has determined that about 143 average annual habitat units (AAHUs) would be lost due to direct and indirect impacts to fresh, intermediate and brackish marsh, and about 43 AAHUs would be lost due to direct and indirect impacts to cypress-tupelo swamp and bottomland hardwood forests, over the 50-year period of analysis (see FIFR-EIS Appendix O). A mitigation plan has been proposed that would provide a total of about 263 AAHUs to fully compensate for the total loss of 186 AAHUs by restoring coastal marsh and preserving forested wetlands in perpetuity.			X
3) Mud flats	X		
4) Vegetated shallows	X		
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Human Use Characteristics (Subpart F)			
1) Effects on municipal and private water supplies	X		
2) Recreational and Commercial fisheries impacts	X		
3) Effects on water-related recreation	X		
4) Aesthetic impacts		X	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	X		

	Yes
<b>3. Evaluation of Dredged or Fill Material (Subpart G)</b>	
a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (check only those appropriate)	
1) Physical characteristics	X
2) Hydrography in relation to known or anticipated sources of contaminants	X
3) Results from previous testing of the material or similar material in the vicinity of the project	X
4) Known, significant sources of persistent pesticides from land runoff or percolation	
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	X

6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	<b>X</b>
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

**List appropriate references:**

- 1) USACE. 2008. Final Environmental Assessment – Restoration of the Mouth of the San Bernard River to the Gulf of Mexico, Brazoria County, Texas. Galveston District, Galveston, Texas.
- 2) USACE. 2011. Final Environmental Impact Statement for Sabine-Neches Waterway Channel Improvement Project, Southeast Texas and Southwest Louisiana. Galveston District, Galveston, Texas.
- 3) USACE. 2012. Final Environmental Impact Statement for Freeport Harbor Channel Improvement Project, Brazoria County, Texas. Galveston District, Galveston, Texas.
- 4) USACE. 2015. Appendix N, Hazardous, Toxic and Radioactive Waste Assessment for Sabine Pass to Galveston Bay Integrated Feasibility Report and EIS.
- 5) SOL Engineering Services, LLC. 2012. Letter Report of Results of Sediment and Elutriate Testing and Analysis for Maintenance Dredging of the Sabine-Neches Waterway.

	<b>Yes</b>	<b>No</b>
b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and placement sites and not likely to degrade the placement sites, or the material meets the testing exclusion criteria.	<b>X</b>	

	<b>Yes</b>
<b>4. Placement Site Delineation (230.11(f))</b>	
a. The following factors as appropriate, have been considered in evaluating the placement site:	<b>N/A</b>
1) Depth of water at placement site	
2) Current velocity, direction, and variability at placement site	
3) Degree of turbulence	
4) Water column stratification	
5) Discharge vessel speed and direction	
6) Rate of discharge	
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	
8) Number of discharges per unit of time	

9) Other factors affecting rates and patterns of mixing (specify)	
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**List appropriate references:**

	Yes	No
b. An evaluation of the appropriate factors in 4a above indicates that the placement site and/or size of mixing zone are acceptable.	N/A	

	Yes	No
<b>5. Actions to Minimize Adverse Effects (Subpart H)</b>		
All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

**List actions taken:**

- 1) Silt curtains will be utilized to prevent inadvertent discharge of fill material into adjacent wetlands or waterbodies. Forestry BMPs will be utilized to prevent disturbance of forest floors.

	Yes	No*
<b>6. Factual Determination (230.11)</b>		
A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:		
a. Physical substrate at the placement site (review Sections 2a, 3, 4, and 5 above)	X	
b. Water circulation, fluctuation and salinity (review Sections 2a, 3, 4, and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a, 3, 4, and 5)	X	
d. Contaminant availability (review Sections 2a, 3, and 4)	X	
e. Aquatic ecosystem structure and function (review Sections 2b and c, 3, and 5)	X	
f. Placement site (review Sections 2, 4, and 5)	X	
g. Cumulative impacts on the aquatic ecosystem	X	
h. Secondary impacts on the aquatic ecosystem	X	

<b>7. Evaluation Responsibility</b>
a. This evaluation was prepared by: <b>Janelle Stokes</b> Position: <b>Regional Technical Specialist, Unit A, CESWF-PEC-CC</b>

<b>8. Findings</b>	Yes
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a. The proposed placement site for discharge of or fill material complies with the Section 404(b)(1) Guidelines.	<b>X</b>
b. The proposed placement site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions:	

List of conditions:

c. The proposed placement site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s):			
1) There is a less damaging practicable alternative			
2) The proposed discharge will result in significant degradation of the aquatic ecosystem			
3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem			
<table border="1" style="width: 100%;"> <tr> <td style="width: 30%; vertical-align: top;"> <p>1 November 2016</p> <hr/> <p>Date</p> </td> <td style="width: 70%; vertical-align: top;"> <p style="text-align: center;">BURKS- COPES.KELLY.A.1231450927</p> <p style="text-align: center;">KELLY BURKS-COPES</p> <p style="text-align: center;">Chief, Coastal Section, CESWF-PEC-CC</p> </td> </tr> </table>	<p>1 November 2016</p> <hr/> <p>Date</p>	<p style="text-align: center;">BURKS- COPES.KELLY.A.1231450927</p> <p style="text-align: center;">KELLY BURKS-COPES</p> <p style="text-align: center;">Chief, Coastal Section, CESWF-PEC-CC</p>	<p style="font-size: small;">Digitally signed by BURKS-COPES.KELLY.A.1231450927 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BURKS-COPES.KELLY.A.1231450927 Date: 2016.11.01 10:27:33 -05'00'</p>
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NOTES:

\* A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.

Negative responses to three or more of the compliance criteria at the preliminary stage indicate that the proposed projects may not be evaluated using this “short form” procedure. Care should be used in assessing pertinent portions of the technical information of items 2a-e before completing the final review of compliance.

Negative response to one of the compliance criteria at the final stage indicates that the proposed project does not comply with the Guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the “short form” evaluation process is inappropriate.

Bryan W. Shaw, Ph.D., P.E., *Chairman*  
Toby Baker, *Commissioner*  
Jon Niermann, *Commissioner*  
Richard A. Hyde, P.E., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 17, 2016

Ms. Kelly Burkes-Copes  
Galveston District  
U.S. Army Corps of Engineers  
P.O. Box 1229  
Galveston, Texas 77553-1229

Attention: Ms. Janelle Stokes

Re: Sabine Pass to Galveston Bay Coastal Storm Risk Management and Ecosystem Restoration

Dear Ms. Burkes-Copes:

This letter is in response to your letter dated November 1, 2016, requesting state water quality certification for the US Army Corps of Engineers (Corps), Galveston District and the Texas General Land Office (GLO) proposed Sabine Pass to Galveston Bay, Texas, Ecosystem Restoration (ER) and Coastal Storm Risk Management (CSRM) project. The Recommended Plan proposes to reduce risks of tropical storm surge impacts by constructing a new CSRM system in Orange County, and increase the level of risk reduction and resiliency of the existing Port Arthur and Vicinity and Freeport and Vicinity Hurricane Flood Protection (HFP) systems in Jefferson and Brazoria Counties, Texas, respectively.

The Texas Commission on Environmental Quality (TCEQ) has reviewed the Draft Integrated Feasibility Report and Environmental Impact Statement (Draft IFR-EIS) for the Sabine Pass to Galveston Bay CSRM and ER dated September 2015, the Corps' response to TCEQ comments in a letter dated August 5, 2016, Appendices O and P dated September 2016 of the forthcoming Final IFR-EIS, and related information along with your letter. Although the TCEQ does not typically make a water quality certification decision for an EIS prior to review of the Final IFR-EIS and the Record of Decision (ROD), TCEQ has determined it appropriate to make a decision in this case based on the available information, including the documents noted above. On behalf of the Executive Director and based on our evaluation of the information contained in these documents, the TCEQ certifies that there is reasonable assurance that the project will be conducted in a way that will not violate water quality standards. General information regarding this water quality certification, including standard provisions of the certification, is included as an attachment to this letter.

The Orange 3 CSRM Recommended Plan would consist of a 27-mile long levee and floodwall system along the edge of the Sabine and Neches River floodplains from the City of Orange to the vicinity of Orangefield, Texas. Ecological modeling of impacts of the final



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Orange 3 CSRM Plan determined that 143 average annual habitat units (AAHUs) would be lost due to direct and indirect impacts to fresh, intermediate, and brackish marsh, and 43 AAHUs would be lost due to direct and indirect impacts to cypress-tupelo swamp and bottomland hardwood forests. The Port Arthur and Freeport CSRM Recommended Plans would raise existing levees, construct and reconstruct floodwalls, replace vehicular closure structures and increase resiliency by installing erosion protection. The Port Arthur and Freeport Plans would result in only negligible impacts.

The proposed mitigation plan would provide a total of 263 AAHUs to compensate for the total loss 186 AAHUs by restoring coastal marsh and preserving forested wetlands in perpetuity.

No review of property rights, location of property lines, nor the distinction between public and private ownership has been made, and this certification may not be used in any way with regard to questions of ownership.

If you require additional information or further assistance, please contact Mr. C. Brad Caston, Water Quality Assessment Section, Water Quality Division (MC-150), at (512) 239-4711 or by email at [Charles.Caston@tceq.texas.gov](mailto:Charles.Caston@tceq.texas.gov).

Sincerely,



David W. Galindo, Director  
Water Quality Division  
Texas Commission on Environmental Quality

DWG/CBC/tc

Attachment

cc: Mr. Ray Newby, Texas General Land Office, P. O. Box 12873, Austin, Texas 78711-2873

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**WORK DESCRIPTION:** As described in Draft Integrated Feasibility Report and Environmental Impact Statement (Draft IFR-EIS) for the Sabine Pass to Galveston Bay Coastal Storm Risk Management (CSR) and Ecosystem Restoration (ER) dated September 2015 and Appendices O and P dated September 2016 of the forthcoming Final IFR-EIS.

**SPECIAL CONDITIONS:** None

**GENERAL:** This certification, issued pursuant to the requirements of Title 30, Texas Administrative Code, Chapter 279, is restricted to the work described in Draft IFR-EIS for the Sabine Pass to Galveston Bay CSR and ER dated September 2015 and Appendices O and P dated September 2016 of the forthcoming Final IFR-EIS. This certification may be extended to any minor revision of the project when such change(s) would not result in an impact on water quality. The Texas Commission on Environmental Quality (TCEQ) reserves the right to require full joint public notice on a request for minor revision.

**STANDARD PROVISIONS:** These following provisions attach to any permit issued by the COE and shall be followed by the permittee or any employee, agent, contractor, or subcontractor of the permittee during any phase of work authorized by a COE permit.

1. The water quality of wetlands shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative, and Numerical Criteria.
2. The applicant shall not engage in any activity which will cause surface waters to be toxic to man, aquatic life, or terrestrial life.
3. Permittee shall employ measures to control spills of fuels, lubricants, or any other materials to prevent them from entering a watercourse. All spills shall be promptly reported to the TCEQ by calling the State of Texas Environmental Hotline at 1-800-832-8224.
4. Sanitary wastes shall be retained for disposal in some legal manner. Marinas and similar operations which harbor boats equipped with marine sanitation devices shall provide state/federal permitted treatment facilities or pump out facilities for ultimate transfer to a permitted treatment facility. Additionally, marinas shall display signs in appropriate locations advising boat owners that the discharge of sewage from a marine sanitation device to waters in the state is a violation of state and federal law.

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5. Materials resulting from the destruction of existing structures shall be removed from the water or areas adjacent to the water and disposed of in some legal manner.
6. A discharge shall not cause substantial and persistent changes from ambient conditions of turbidity or color. The use of silt screens or other appropriate methods is encouraged to confine suspended particulates.
7. The placement of any material in a watercourse or wetlands shall be avoided and placed there only with the approval of the Corps when no other reasonable alternative is available. If work within a wetland is unavoidable, gouging or rutting of the substrate is prohibited. Heavy equipment shall be placed on mats to protect the substrate from gouging and rutting if necessary.
8. Dredged Material Placement: Dredged sediments shall be placed in such a manner as to prevent any sediment runoff onto any adjacent property not owned by the applicant. Liquid runoff from the disposal area shall be retained on-site or shall be filtered and returned to the watercourse from which the dredged materials were removed. Except for material placement authorized by this permit, sediments from the project shall be placed in such a manner as to prevent any sediment runoff into waters in the state, including wetlands.
9. If contaminated spoil that was not anticipated or provided for in the permit application is encountered during dredging, dredging operations shall be immediately terminated and the TCEQ shall be contacted by calling the State of Texas Environmental Hotline at 1-800-832-8224. Dredging activities shall not be resumed until authorized by the Commission.
10. Contaminated water, soil, or any other material shall not be allowed to enter a watercourse. Noncontaminated storm water from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. Storm water runoff from construction activities that result in a disturbance of one or more acres, or are a part of a common plan of development that will result in the disturbance of one or more acres, must be controlled and authorized under Texas Pollutant Discharge Elimination System (TPDES) general permit TXR150000. A copy of the general permit, application (notice of intent), and additional information is available at:  
[http://www.tceq.texas.gov/permitting/stormwater/wq\\_construction.html](http://www.tceq.texas.gov/permitting/stormwater/wq_construction.html) or by contacting the TCEQ Storm Water & Pretreatment Team at (512) 239-4671.

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U.S. Army Corps of Engineers  
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12. Upon completion of earthwork operations, all temporary fills shall be removed from the watercourse/wetland, and areas disturbed during construction shall be seeded, riprapped, or given some other type of protection to minimize subsequent soil erosion. Any fill material shall be clean and of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters.
13. Disturbance to vegetation will be limited to only what is absolutely necessary. After construction, all disturbed areas will be revegetated to approximate the pre-disturbance native plant assemblage.
14. Where the control of weeds, insects, and other undesirable species is deemed necessary by the permittee, control methods which are nontoxic to aquatic life or human health shall be employed when the activity is located in or in close proximity to water, including wetlands.
15. Concentrations of taste and odor producing substances shall not interfere with the production of potable water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, result in offensive odors arising from the water, or otherwise interfere with reasonable use of the water in the state.
16. Surface water shall be essentially free of floating debris and suspended solids that are conducive to producing adverse responses in aquatic organisms, putrescible sludge deposits, or sediment layers which adversely affect benthic biota or any lawful uses.
17. Surface waters shall be essentially free of settleable solids conducive to changes in flow characteristics of stream channels or the untimely filling of reservoirs, lakes, and bays.
18. The work of the applicant shall be conducted such that surface waters are maintained in an aesthetically attractive condition and foaming or frothing of a persistent nature is avoided. Surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.
19. This certification shall not be deemed as fulfilling the applicant's/permittee's responsibility to obtain additional authorization/approval from other local, state, or federal regulatory agencies having special/specific authority to preserve and/or protect resources within the area where the work will occur.