



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex A

**Clean Water Act Section 401 Water Quality Certification
Clean Water Act Section 404(b)(1) Evaluation**



APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT <i>(33 CFR 325)</i>		OMB APPROVAL NO. 0710-003 Expires October 1996	
<p><i>Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.</i></p>			
<p>PRIVACY ACT STATEMENT</p> <p><i>Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses: Information provided on this form will be used in evaluating the application or a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued.</i></p> <p><i>One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.</i></p>			
(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)			
1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
(ITEMS BELOW TO BE FILLED BY APPLICANT)			
5. APPLICANT'S NAME US Army Corps of Engineers, New Orleans District		8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) Same as Applicant	
6. APPLICANT'S ADDRESS Planning, Programs and Programs and Project Management Division CEMVN-PDN-CEP P.O. Box 60267 New Orleans, LA 70160-0267 ATTN: William P. Klein, Jr.		9. AGENT'S ADDRESS	
7. APPLICANT'S PHONE NOS. W/AREA CODE		10. AGENT'S PHONE NOS. W/AREA CODE	
<i>a. Residence</i>		<i>a. Residence</i>	
<i>b. Business</i> (504) 862-2540		<i>b. Business</i>	
11. STATEMENT OF AUTHORIZATION			
STILES.SANDRA.ELAINE.1230921748 <small>Digitally signed by STILES.SANDRA.ELAINE.1230921748 DN: cn=STILES.SANDRA.ELAINE.1230921748, o=US ARMY CORPS OF ENGINEERS, ou=US ARMY CORPS OF ENGINEERS, email=STILES.SANDRA.ELAINE.1230921748@us.army.mil, c=US</small>		January 5, 2016	
APPLICANT'S SIGNATURE		DATE	
NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY			
12. PROJECT NAME OR TITLE (see instructions) Southwest Coastal Louisiana Revised Draft Integrated Feasibility Report and Environmental Impact Statement			
13. NAME OF WATERBODY, IF KNOWN (if applicable) All of Calcasieu, Cameron and Vermilion Parishes		14. PROJECT STREET ADDRESS (if applicable) All of Calcasieu, Cameron and Vermilion Parishes	
15. LOCATION OF PROJECT Calcasieu, Cameron and Vermilion Parishes _____ COUNTY <u>Louisiana</u> STATE			
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN. (see instructions)			



<p>17. DIRECTIONS TO THE SITE</p> <p>All of Calcasieu, Cameron and Vermilion Parishes</p>
<p>18. Nature of Activity (Description of project, include all features.) <i>Through separate reciprocal authorizations, Congress authorized the investigation of alternatives to: (1) provide hurricane protection and storm damage reduction, and (2) significantly restore environmental conditions that existed prior to the large scale alteration of the natural ecosystem including the Chenier Plain in Calcasieu, Cameron, and Vermilion parishes in Louisiana. The intent is to develop potential solutions to these water resource problems. The impacts described for the National Economic Development (NED) hurricane and storm damage risk reduction objective are programmatic in nature and therefore additional National Environmental Policy Act (NEPA) documents will be prepared at a later date to further analyze in detail site specific project(s) impacts prior to implementation of the NER component of the Project. Hence this Water Quality Certification application is not directed to the programmatic NED Plan. A Water Quality Certification application will be provided following more detailed, feasibility-level analysis for construction.</i></p> <p><i>This Water Quality Certification application is directed to the National Ecosystem Restoration (NER) features that have been developed to a feasibility level of design and are recommended as fully constructible. The NER Tentatively Selected Plan (TSP) includes:</i></p> <ul style="list-style-type: none"> <i>* 9 marsh restoration and nourishment features restoration locations include: (a) three areas on the south side of LA-82 approximately 4.5 miles west of Grand Chenier; (b) Pecan Island west of the Freshwater Bayou Canal approximately 5 miles north of the Freshwater Bayou locks; (c) Christian Marsh located east of Freshwater Bayou Canal and approximately 5 miles north of Freshwater Bayou locks; (d) southern shoreline of GIWW west of the CSC near Black Lake; (e) eastern rim of Calcasieu Lake within the Cameron-Creole Watershed; (f) east of Mud Lake and north of Highway 82; (g) Mud Lake west of Calcasieu Ship Channel adjacent to southern rim of West Cove.</i> <i>* 5 Gulf shoreline protection / stabilization features spanning 252,000 linear feet to reduce erosion of canal banks and shorelines at multiple locations of Gulf of Mexico shoreline from the Calcasieu River to Freshwater Bayou consisting of reef breakwaters located approximately 150' offshore; in addition, approximately 13.4 miles of rock revetment placed at three locations to fortify spoil banks of the GIWW and Freshwater Bayou; rock and breakwaters would also be placed at Holly Beach.</i> <i>*Hydrologic and salinity control feature is the Cameron-Creole Spillway structure south of Lambert Bayou would serve as a drainage manifold and the outfall channel into Calcasieu Lake would be rock-lined for scour protection and built to +2 ft.</i> <i>*Chenier reforestation consists of replanting of 435 seedlings per acre at 10' x 10' spacing, in 35 Chenier locations on 1,400 acres in Cameron and Vermilion parishes.</i> <i>*The CSC Salinity Barrier Navigation Study is recommended as an additional long-range study feature to adequately account for potential environmental benefits, navigation impacts, and engineering. This feature would not be constructed by the proposed action but is recommended for additional study.</i>
<p>19. Project Purpose (Describe the reason or purpose of the project, (see instruction.) <i>NED Objective 1. Reduce the risk of damages and losses from hurricane and storm surge flooding.</i> <i>NER Objective 2. Manage tidal flows to improve drainage, and prevent salinity from exceeding 2 parts per thousand (ppt) for fresh marsh and 6 ppt for intermediate marsh.</i> <i>NER Objective 3. Increase wetland productivity in fresh and intermediate marshes to maintain function by reducing the time water levels exceed marsh surfaces.</i> <i>NER Objective 4. Reduce shoreline erosion and stabilize canal banks to protect adjacent wetlands.</i> <i>NER Objective 5. Restore landscapes, including marsh, shoreline, and cheniers to maintain their function as wildlife habitat and improve their ability to serve as protective barriers.</i></p>
<p>USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED</p>
<p>20. Reason(s) for Discharge <i>*Marsh Restoration: Nine marsh restoration and nourishment features consist of delivering sediments to former marsh areas and eroding marsh areas (minimum of 100 acres efficiency criteria) that have water levels of less than two feet and that have been optimized to preserve or restore critical geomorphologic features to restore vegetated wetlands. This involves excavation of significant quantities and delivery of borrow material to restoration sites through designated corridors. Some restoration sites may require containment to hold sediments in place.</i> <i>*Shoreline Protection: The five Gulf shoreline protection/stabilization features would be used to reduce erosion of canal banks and shorelines in critical areas in order to protect adjacent wetlands and critical geomorphic features.</i> <i>*Hydrologic and salinity control structure is the Cameron-Creole Spillway structure south of Lambert Bayou would serve as a drainage manifold and the outfall channel into Calcasieu Lake would regulate the flow of water in certain areas and inhibit salinity intrusion above a certain threshold.</i> <i>*Chenier reforestation would not involve the discharge of dredged or fill material; rather Chenier restoration consists of replanting seedlings in 35 Chenier locations on 1,400 acres in Cameron and Vermilion parishes.</i></p>
<p>21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards. <i>See tables 2-18a-d</i></p>



Table 1a: Details of the marsh restoration features of the NER Recommended Plan.

Measure Number	Measure Name	Basin	Marsh Type	Acres Restored	Acres Nourished	Total Acres	Net Benefits (acres)	Average Annual Habitat Units (AAHU)	Borrow Volume (cy)	Borrow Area (acres)	Resourishment Volume (cy)	Initial Construction Costs (US \$)	TY 30 Resourishment (US \$)
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	599	-	599	454	191	5,339,286	139	1,000,000	\$66,593,748	\$17,759,470
3e1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	1,347	734	2,081	1,324	607	9,458,313	314	3,651,841	\$168,194,346	\$70,984,253
47a1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	933	88	1,021	895	272	3,022,782	1,716	1,500,000	\$105,234,982	\$21,239,680
47a2	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,297	126	1,423	1,218	381	8,831,084	1,716	1,500,000	\$97,248,440	\$17,585,890
47e1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,304	4	1,308	1,135	353	8,557,120	1,716	1,800,000	\$95,372,834	\$14,981,607
124c	Marsh Creation at Mlad Lake	Calcasieu	Saline	1,077	708	1,837	1,228	500	10,369,956	531	2,001,611	\$112,219,520	\$24,680,885
124d	Marsh Creation at Mlad Lake	Calcasieu	Brackish	159	448	607	168	4	1,420,943	378	1,200,000	\$28,882,160	\$17,636,205
127c3	Marsh Restoration at Pecan Island	Mermentau	Brackish	832	62	894	735	241	7,301,057	3,950	781,000	\$61,662,041	\$15,683,451
306a1	Raney Marsh Restoration Southwest Portion (Christian Marsh)	Mermentau	Brackish	627	1,269	1,896	743	151	8,128,181	3,950	3,500,000	\$75,885,692	\$37,551,555
Totals				8,175	3,439	11,666	7,900	2,700	62,428,722	14,410	16,934,452	\$811,393,763	\$238,102,996

Table 1a: continued.

Measure Number	Measure Name	State Water Bottoms permanent (acres)	Floatation Footprint (acres)	Disposal Footprint (acres)	Dike Footprint (feet)	Dike Footprint (acres)	State Water Bottoms (temporary)	Dredge Pipeline Route (feet)	Dredge Pipeline Route (acres)	Piping Plover Critical Habitat (acres)	Construction Period
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	139	132	-	44,700	30.8	-	43,942	30	-	16 months
3e1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	314	182	-	97,250	51.4	-	61,497	42	-	33 months
47a1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	68,300	47.0	-	35,519	24	0.14	23 months
47a2	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	41,000	28.2	-	30,898	21	0.14	24 months
47e1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	35,200	24.2	-	29,838	21	0.14	23 months
124c	Marsh Creation at Mlad Lake	531	28	-	78,100	31.5	-	9,485	7	1.8	27 months
124d	Marsh Creation at Mlad Lake	314	182	-	32,500	22.4	-	21,452	15	-	9 months
127c3	Marsh Restoration at Pecan Island	3,950	110	-	46,000	31.7	-	37,074	26	-	12 months
306a1	Raney Marsh Restoration Southwest Portion (Christian Marsh)	3,950	178	-	108,000	74.4	-	59,731	41	-	17 months
Totals		14,347	953	-	551,500	341.6	-	329,4567	227	2.2	184 months



Table 1b: Details of the shoreline protection features of the NER Recommended Plan.

Measure Number	Measure Name	Basin	Marsh Type	Net Benefit (acres)	Average annual habitat units (AAHU)	Shoreline Feature Length (ft)	Rock (tons)	Grade Rock (lbs)	Geosynthetic Fabric (sq yds)	Lightweight Aggregate (tons)	1st Maintenance Lift (tons)	2nd Maintenance Lift (tons)	Initial Construction Costs (US \$)	TY15 Maintenance (US \$)
5a	Holly Beach Shoreline Stabilization - Beachrestoration	Calcasieu	Saline	26	56	46,014	860,540	250	386,480	0	129,081	96,054	\$144,044,021	\$16,786,222
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Meenacutan	Beachish	2,140	622	58,293	968,400	250	47,830	479,150	84,948	0	\$98,499,921	NA
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Meenacutan	Beachish	1,583	466	42,883	687,140	250	363,270	267,000	68,714	0	\$148,870,561	NA
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Meenacutan	Beachish	1,099	312	33,355	561,530	250	344,205	279,030	56,153	0	\$115,270,890	NA
16b	Foodly Spoil Banks of the GJWW and Freshwater Bayou	Meenacutan	Beachish	1,288	279	70,983	617,640	250	516,860	0	92,646	61,764	\$36,018,600	\$5,695,468
Totals				6,135	1,738	251,525	3,595,330		1,958,625	1,315,190	433,442	147,818	\$439,690,993	\$22,481,690

Table 1b: continued.

Measure Number	Measure Name	TY 25 Maintenance (US \$)	State Water Bottoms (permanent)	Beachrestoration Footprint (feet)	Floation Footprint (acres)	Disposal Footprint (acres)	State Water Bottoms (Temporary)	Critical Habitat (acres)	Staging Area (acres)	Crown Elevation (feet NAVD86)	Crown Width (feet)	Slopes	Aprons (feet)	Construction Period
5a	Holly Beach Shoreline Stabilization - Beachrestoration	\$11,247,740	57.4	57.4	479	462	941	-	-	3.50	24	2:1	10-ft front & 6-ft back	19 months
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$15,369,345	63.9	63.9	725	711	1436	-	21	3.25	18	2:1	10-ft front & 6-ft back	31 months
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$11,343,672	40.2	40.2	507	487	1004	-	21	3.25	18	2:1	10-ft front & 6-ft back	23 months
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$9,041,421	37.8	37.8	372	289	661	-	21	3.25	18	2:1	10-ft front & 6-ft back	18 months
16b	Foodly Spoil Banks of the GJWW and Freshwater Bayou	\$3,966,404	77.1	77.1	358	-	-	-	-	3.00	4	4:1	none	13 months
Totals		\$50,968,582	278.4	278.4	2441	1959	4042	-	63	-	-	-	-	104 months

Table 1b: continued.

Linear Feet for Access and Temporary Disposal						
Measure	5a1	6b1	6b2	6b3	Total Feet	Miles
Disposal	159,741	239,001	168,533	98,683	665,958	126.1
Equipment Access	161,957	244,857	173,050	126,542	706,406	133.8

Table 1c: Details of the chenier reforestation features of the NER Recommended Plan.

Measure Number	Measure Name	Net Benefits (acres)	Average Annual Habitat Units (AAHUs)	Species	Total Fence Length (feet)	Fence Height (feet)	Planting Density (#/acre)	Spacing (feet)	Initial Construction Costs (US \$)	OMRR&R Costs (US \$)
CR (total)	Chenier Reforestation	1,413	538	Live Oak, Hackberry	150,000	7.5	435	10 x 10	4,138,249	None Planned

Table 1c: continued.

Measure Number	Measure Name	Survival (percent)	Equipment Access Corridor (feet)	Equipment Access Corridor (acres)	State Water Bottoms (Permanent)	State Water Bottoms (Temporary)	Critical Habitat (acres)	Staging Area (acres)	Construction period
CR (total)	Chenier Reforestation	57%	13,867	10	0	0	0	0	95 months

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)
See tables 2-18a-d

23. Is Any Portion of the Work Already Complete? Yes ___ No X IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list.



25. List of Other Certifications or Approvals/Denials Received from other Federal, State or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL	IDENTIFICATION NO.	DATE APPLIED	DATE APPROVED	DATE DENIED
<p>To the best of my knowledge the proposed activity described in my permit application complies with and will be conducted in a manner that is consistent with the LA Coastal Management Program. *Would include but is not restricted to zoning, building and flood plain permits.</p>					
<p>26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.</p>					
<p>STILES,SANDRA ELAINE.1230921 748 SIGNATURE OF APPLICANT</p>		<p>January 5, 2016 DATE</p>			
<p>The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.</p>					
<p>18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.</p>					

*U.S. :1994-520-478/82018



BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

July 6, 2015

Mr. William P. Klein, Jr.
U.S. Army Corps of Engineers, New Orleans District
CEMVN-PDN-CEP
Post Office Box 60267
New Orleans, Louisiana 70026

AI No.: 101235
Activity No.: CER20150002

RE: Southwest Coastal Louisiana
Water Quality Certification WQC 150706-01
Calcasieu, Cameron, and Vermilion Parishes

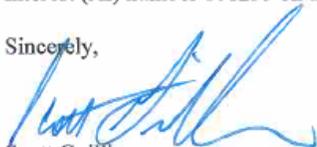
Dear Mr. Klein:

The Louisiana Department of Environmental Quality, Water Permits Division (LDEQ), has reviewed the application to discharge fill to conduct marsh restoration and shoreline protection/stabilization projects in Calcasieu, Cameron, and Vermilion Parishes.

The information provided in the application and the Revised Integrated Draft Feasibility Report and Environmental Impact Statement received March 20, 2015, has been reviewed in terms of compliance with State Water Quality Standards, the approved Water Quality Management Plan and applicable state water laws, rules and regulations. LDEQ determined that the requirements for a Water Quality Certification have been met. LDEQ concludes the discharge of fill material will not violate water quality standards as provided for in LAC 33:IX.Chapter 11. Therefore, LDEQ hereby issues U.S. Army Corps of Engineers, New Orleans District – Southwest Coastal Louisiana Water Quality Certification, WQC 150706-01.

Should you have any questions concerning any part of this certification, please contact Elizabeth Hill at (225) 219-3225 or by email at elizabeth.hill@la.gov. To ensure all correspondence regarding this certification is properly filed into the Department's Electronic Document Management System, please reference Agency Interest (AI) number 101235 on all future correspondence to this Department.

Sincerely,


Scott Guilliams
Administrator
Water Permits Division

c: IO-W
Corps of Engineers – New Orleans District



SECTION 404(b)(1) EVALUATION
Southwest Coastal Louisiana Study
Calcasieu, Cameron, and Vermilion Parishes, Louisiana

I. Project Description

a. Location.

The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN) has prepared an Integrated Final Feasibility Report and Environmental Impact Statement (Integrated Final Report) to evaluate the impacts associated with the Southwest Coastal Louisiana Study. The study area is located in southwest Louisiana and includes all of Calcasieu, Cameron, and Vermilion Parishes, Louisiana. Cameron Parish is located in the southwest corner of Louisiana. The southern boundary of the parish is the Gulf of Mexico. Eighty-two percent of Cameron Parish is coastal marshes. Geographically, it is one of the largest parishes in Louisiana. The parish is chiefly rural and the largest communities are Cameron and Hackberry. Cameron is located along LA-82, while Hackberry is located along LA-27. Other smaller communities include Creole, Johnsons Bayou, and Holly Beach. Calcasieu Parish is located due north of Cameron Parish. The town of Lake Charles is the parish seat, which is the largest urban area in the study area. Only a small portion of the parish is located in the coastal zone. Vermilion Parish is located to the east of Cameron Parish. The southern boundary of the parish is the Gulf of Mexico. Large expanses of Vermilion Parish are open water (lakes, bays, and streams). Approximately 50 percent of the land is coastal marshes. The parish is chiefly rural and the town of Abbeville is the parish seat as well as the largest urban area in the parish. Other communities include Delcambre, Kaplan, and Gueydan, which are all located along LA Hwy 14 in the northern part of the study area. Pecan Island and Forked Island are smaller communities located along LA Hwy 82 in lower Vermilion Parish. Located along LA Hwy 333, Intracoastal City is the nearest access to Vermilion Bay and the Gulf of Mexico in this region and supports the area's oil and shrimp industries.

b. General Description.

The Southwest Coastal Louisiana Study is comprised of two components consisting of a nonstructural National Economic Development (NED) plan and a National Ecosystem Restoration (NER) plan. The NED Recommended Plan (RP) would not impact waters of the United States and is therefore not subject to this evaluation. The NER RP is the Small Integrated Restoration Alternative, a comprehensive ecosystem restoration plan addressing land loss and ecosystem degradation. The NER RP is cost effective, and is the least-cost comprehensive best buy plan. The NER RP would minimize land loss; enhance plant productivity by reducing major stressors; and reinforce and protect critical landscape features. Table 1 provides a brief description of the NER RP measures. **Tables 2a, 2b, and 2c** provide the NER RP measure details, description of construction equipment, and quantities and types of fill to be placed in wetlands. **Figures 1, 2 and 3** display locations of the NER RP measures.

There are a total of 49 ecosystem restoration features or measures:

- 9 Marsh Restoration measures
- 35 Chenier Reforestation measures; construction of these measures would not impact waters of the United States and are therefore not part of this 404(b)(1) evaluation
- 5 Shoreline Protection measures
- The Calcasieu Ship Channel Salinity Barrier measure is being recommended for long-term study.
- The Cameron-Creole Spillway Salinity Control Structure measure is being recommended for long-term study.
- Two marsh restoration measures would be located partially on U.S. Fish and Wildlife Service (USFWS) lands. Measure 124d Marsh Restoration at Mud Lake would be located on Sabine National Wildlife Refuge (NWR). Measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR (**Figure 4**). While USACE believes that these features are worthy of recommendation, USACE has determined that these features would more properly be



implemented by USFWS. Therefore, USACE will not seek authorization and funding of these features. Rather USACE will recommend to USFWS that it consider seeking independent Congressional authorization and funding for implementation of these features by USFWS.

Table 1. NER RP Feature Construction Benefits

	Category	ID	Description	Net Acres	Net AAHUs
Mermantau/Teche-Vermilion (Plan M-4)	Marsh Restoration ¹	47a1	Marsh restoration using dredged material south of LA-82, about 4.5 miles west of Grand Chenier. 933 marsh acres would be restored and 88 acres would be nourished from 3M cubic yards of dredged material with one renourishment cycle.	895	272
		47a2	Marsh restoration using dredged material south of LA-82, approximately 4.5 miles west of Grand Chenier. 1,297 marsh acres would be restored and 126 acres would be nourished from 8.8M cubic yards of dredged material with one renourishment cycle.	1,218	381
		47c1	Marsh restoration using dredged material south of LA-82, approximately 4.5 miles west of Grand Chenier. 1,304 marsh acres would be restored and 4 acres would be nourished from 8.6M cubic yards of dredged material with one renourishment cycle.	1,135	353
		127c3	Marsh restoration at Pecan Island, west of the Freshwater Bayou Canal and approximately 5 miles north of the Freshwater Bayou locks. 832 marsh acres would be restored and 62 acres would be nourished from 7.3M cubic yards of dredged material with one renourishment cycle.	735	241
		306a1	Rainey marsh restoration at Christian Marsh, east of the Freshwater Bayou Canal and approximately 5 miles north of the Freshwater Bayou locks. 627 marsh acres would be restored and 1,269 acres would be nourished from 8.1M cubic yards of dredged material with one renourishment cycle.	743	151
	Shoreline Protection/Stabilization ¹	6b1	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 11.0 miles of Gulf shore protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore consisting of geotextile fabric and stone built to an 18 ft crest width.	2,140	625
		6b2	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 8.1 miles of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore using geotextile fabric and stone built to an 18 ft crest width.	1,583	466
		6b3	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 6.3 miles of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore using geotextile fabric and stone built to an 18 ft crest width.	1,098	312
		16b	Fortify spoil banks of Freshwater Bayou. Approximately 13.4 miles of rock revetment at three critical locations to prevent shoreline breaching. Rock revetment would be built to +4 ft with a 4 ft crown. Two maintenance lifts would be required.	1,288	279
	Chenier Re-forestation	CR	13 separate chenier locations would be replanted. Approximately 435 seedlings per acre, at 10 ft x 10 ft spacing, with invasive species control incorporated ³ .	281	96



Calcasieu/ Sabine (CM-4) (Includes all measures in this table)	Marsh Restoration ¹	3a1	Beneficial use of dredged material from the Calcasieu Ship Channel. Located adjacent to the south shore of the GIWW west of the Calcasieu Ship Channel near Black Lake. Restore 599 marsh acres with 5.3M cubic yards of dredged material with one renourishment cycle.	454	191
		3c1 ²	Beneficial use of dredged material from the Calcasieu Ship Channel. Located adjacent to the eastern rim of Calcasieu Lake and situated within the Cameron-Creole Watershed area. 1,347 marsh acres would be restored and 734 acres would be nourished from 9.4M cubic yards of dredged material with one renourishment cycle.	1,324	607
		124c	Marsh restoration at Mud Lake. Located adjacent and north of Highway 82 and east of Mud Lake. 1,077 marsh acres would be restored and 708 acres would be nourished from 10.4M cubic yards of dredged material with one renourishment cycle.	1,228	500
		124d ²	Marsh restoration at Mud Lake. Located west of the Calcasieu Ship Channel and adjacent to the south rim of West Cove. 159 marsh acres would be restored and 448 acres would be nourished from 1.4M cubic yards of dredged material with one renourishment cycle.	168	4
	Shoreline Protection/Stabilization ¹	5a	Holly Beach Shoreline Stabilization Breakwaters. Construction of 8.7 miles of rock and low action breakwaters and is a continuation of existing breakwaters. Crown elevation of +3.5 ft with a crown width of 24 ft. Two maintenance lifts would be required.	26	56
	Chenier Re-forestation	CR	22 separate chenier locations would be replanted. Approximately 435 seedlings per acre, at 10 ft x 10 ft spacing, with invasive species control incorporated ³ .	1,132	442
	TOTALS			15,448	4,976

1- Renourishment and maintenance lifts are considered an OMRR&R cost and are a 100% NFS responsibility. Renourishment material would come from the site of the initial dredging effort.

2- Features 3c1 and 124d are partially located on USFWS property. While USACE believes that these features are worthy of recommendation, USACE has determined that these features would more properly be implemented by USFWS.

3- Costs to ensure the minimum survival percent are considered 'construction' and will be cost-shared accordingly.



Table 2a: Details of the marsh restoration measures of the NER Recommended Plan.

Measure Number	Measure Name	Basin	Marsh Type	Acres Restored	Acres Nourished	Total Acres	Net Benefits (acres)	Average Annual Habitat Units (AAHU)	Borrow Volume (cy)	Borrow Area (acres)	Renourishment Volume (cy)	Initial Construction Costs (US \$)	TY 30 Renourishment (US \$)
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	599	-	599	454	191	5,339,286	139	1,000,000	\$66,593,748	\$17,759,470
3c1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	1,347	734	2,081	1,324	607	9,458,313	314	3,651,841	\$168,194,346	\$70,984,253
47a1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	933	88	1,021	895	272	3,022,782	1,716 ¹	1,500,000	\$105,234,982	\$21,239,680
47a2	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,297	126	1,423	1,218	381	8,831,084	1,716 ¹	1,500,000	\$97,348,440	\$17,585,890
47c1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,304	4	1,308	1,135	353	8,557,120	1,716 ¹	1,800,000	\$95,372,834	\$14,981,607
124c	Marsh Restoration at Mud Lake	Calcasieu	Saline	1,077	708	1,837	1,228	500	10,369,956	531	2,001,611	\$112,219,520	\$24,680,885
124d	Marsh Restoration at Mud Lake	Calcasieu	Brackish	159	448	607	168	4	1,420,943	378	1,200,000	\$28,882,160	\$17,636,205
127c3	Marsh Restoration at Pecan Island	Mermentau	Brackish	832	62	894	735	241	7,301,057	3,950 ²	781,000	\$61,662,041	\$15,683,451
306a1	Rainey Marsh Restoration Southwest Portion (Christian Marsh)	Mermentau	Brackish	627	1,269	1,896	743	151	8,128,181	3,950 ²	3,500,000	\$75,885,692	\$37,551,555
	Totals			8,175	3,439	11,666	7,900	2,700	62,428,722	7,028	16,934,452	\$811,393,763	\$238,102,996

1- This borrow source provides the sediment for all three restoration features but the full amount of available material will not be dredged each cycle. Therefore this total acreage is only counted once in the column total.
 2- This borrow source provides the sediment for both restoration features but the full amount of available material will not be dredged each cycle. Therefore this total acreage is only counted once in the column total.



Table 2a: continued.

Measure Number	Measure Name	Impact to State Water Bottoms permanent (acres)	Floatation Footprint (acres)	Disposal Footprint (acres)	Dike Footprint (feet)	Dike Footprint (acres)	Impact to State Water Bottoms (temporary)	Dredge Pipeline Route (feet)	Dredge Pipeline Route (acres)	Piping Plover Critical Habitat (temporary impact acres)	Construction Period
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	139	132	-	44,700	30.8	-	43,942	30	-	16 months
3c1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	314	182	-	97,250	51.4	-	61,497	42	-	33 months
47a1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	68,300	47.0	-	35,519	24	0.14	23 months
47a2	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	41,000	28.2	-	30,898	21	0.14	24 months
47c1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	35,200	24.2	-	29,858	21	0.14	23 months
124c	Marsh Restoration at Mud Lake	531	28	-	78,100	31.5	-	9,485	7	1.8	27 months
124d	Marsh Restoration at Mud Lake	314	182	-	32,500	22.4	-	21,452	15	-	9 months
127c3	Marsh Restoration at Pecan Island	3,950	110	-	46,000	31.7	-	37,074	26	-	12 months
306a1	Rainey Marsh Restoration Southwest Portion (Christian Marsh)	3,950	178	-	108,000	74.4	-	59,731	41	-	17 months
	Totals	14,347	953		551,50	341.6		329,456	227	2.2	---



Table 2b: Details of the shoreline protection measures of the NER Recommended Plan.

Measure Number	Measure Name	Basin	Marsh Type	Net Benefits (acres)	Average annual habitat units (AAHU)	Shoreline Feature Length (ft)	Rock (tons)	Grade Rock (lbs)	Geotextile Fabric (sq yds)	Lightweight Aggregate (tons)	1st Maintenance Lift (tons)	2nd Maintenance Lift (tons)	Initial Construction Costs (US \$)	TY15 Maintenance (US \$)
5a	Holly Beach Shoreline Stabilization – Breakwaters	Calcasieu	Saline	26	56	46,014	860,540	250	386,460	0	129,081	86,054	\$144,044,021	\$16,786,222
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	2,140	625	58,293	868,480	250	447,830	479,150	86,848	0	\$198,480,921	NA
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	1,583	466	42,883	687,140	250	363,270	357,010	68,714	0	\$145,876,561	NA
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	1,098	312	33,355	561,530	250	244,205	279,030	56,153	0	\$115,270,890	NA
16b	Fortify Spoil Banks of the GIWW and Freshwater Bayou	Mermentau	Brackish	1,288	279	70,983	617,640	250	516,860	0	92,646	61,764	\$36,018,600	\$5,695,468
	Totals			6,135	1,738	251,528	3,595,330		1,958,625	1,115,190	433,442	147,818	\$639,690,993	\$22,481,690



Table 2b: continued.

Measure Number	Measure Name	TY 25 Maintenance (US \$)	Impacts to State Water Bottoms (permanent)	Breakwater Footprint (feet)	Flotation Footprint* (acres)	Temporary Disposal Footprint* (acres)	Impact to State Water Bottoms (temporary acres)	Critical Habitat (acres)	Temporary Staging Area (acres)	Crown Elevation (feet NAVD88)	Crown Width (feet)	Slopes	Aprons (feet)	Construction Period
5a	Holly Beach Shoreline Stabilization – Breakwaters	\$11,247,740	57.4	57.4	479	462	941	-	-	3.50	24	2:1	10-ft front & 6-ft back	19 months
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$15,389,345	65.9	65.9	725	711	1436	-	21	3.25	18	2:1	10-ft front & 6-ft back	31 months
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$11,343,672	40.2	40.2	507	497	1004	-	21	3.25	18	2:1	10-ft front & 6-ft back	23 months
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$9,041,421	37.8	37.8	372	289	661	-	21	3.25	18	2:1	10-ft front & 6-ft back	18 months
16b	Fortify Spoil Banks of the GIWW and Freshwater Bayou	\$3,966,404	77.1	77.1	358	-	-	-	-	3.00	4	4:1	none	13 months
	Totals	\$50,988,582	278.4	278.4	2,441	1,959	4,042	-	63	-	-	-	-	---

*- Access for heavy equipment to construct shoreline stabilization features consists of dredging a channel in open water to allow construction equipment to reach shoreline areas and placing the dredged material alongside the channel so the necessary channel depth is maintained. This material stored adjacent to the channel will be returned to the access channel after construction. These impacts are temporary and will naturally revert to existing conditions over time.

Table 2b: continued.

Linear Feet for Access and Temporary Disposal							
Measure	5a	6b1	6b2	6b3	16b*	Total Feet	Miles
Disposal	159,741	239,001	168,533	98,683	0	665,958	126.1
Equipment Access	161,957	244,857	173,050	126,542	0	706,406	133.8

*- No dredging or temporary disposal is anticipated for Feature 16b since Freshwater Bayou has adequate water depths to allow the necessary construction equipment access.



Table 2c: Details of the chenier reforestation measures of the NER Recommended Plan.

Measure Name	Net Benefits (acres)	Benefits (AAHU)	Species	Total Fence Length (feet)	Fence Height (feet)	Planting Density (#/acre)	Spacing (feet)	Min. Survival % at Year 4*	Equipment Access Corridor (feet)	Equipment Access Corridor (acres)	State Water Bottoms (permanent)	State Water Bottoms (temporary)	Critical Habitat (acres)	Staging Area (acres)
Chenier Reforestation (CR)	1,413	538	Live Oak; Hackberry	150,000	7.5	435	10 x 10	57%	13,867	10	0	0	0	0

*- For a given planting, a minimum of 250 seedlings/saplings per acre must be present (with a 60 to 40 hard mast to soft mast ratio) at the end of the fourth year (i.e., Year 5) following successful attainment of the one-year survivorship criteria. Costs to ensure the minimum survival percent are considered 'construction' and will be cost-shared accordingly.

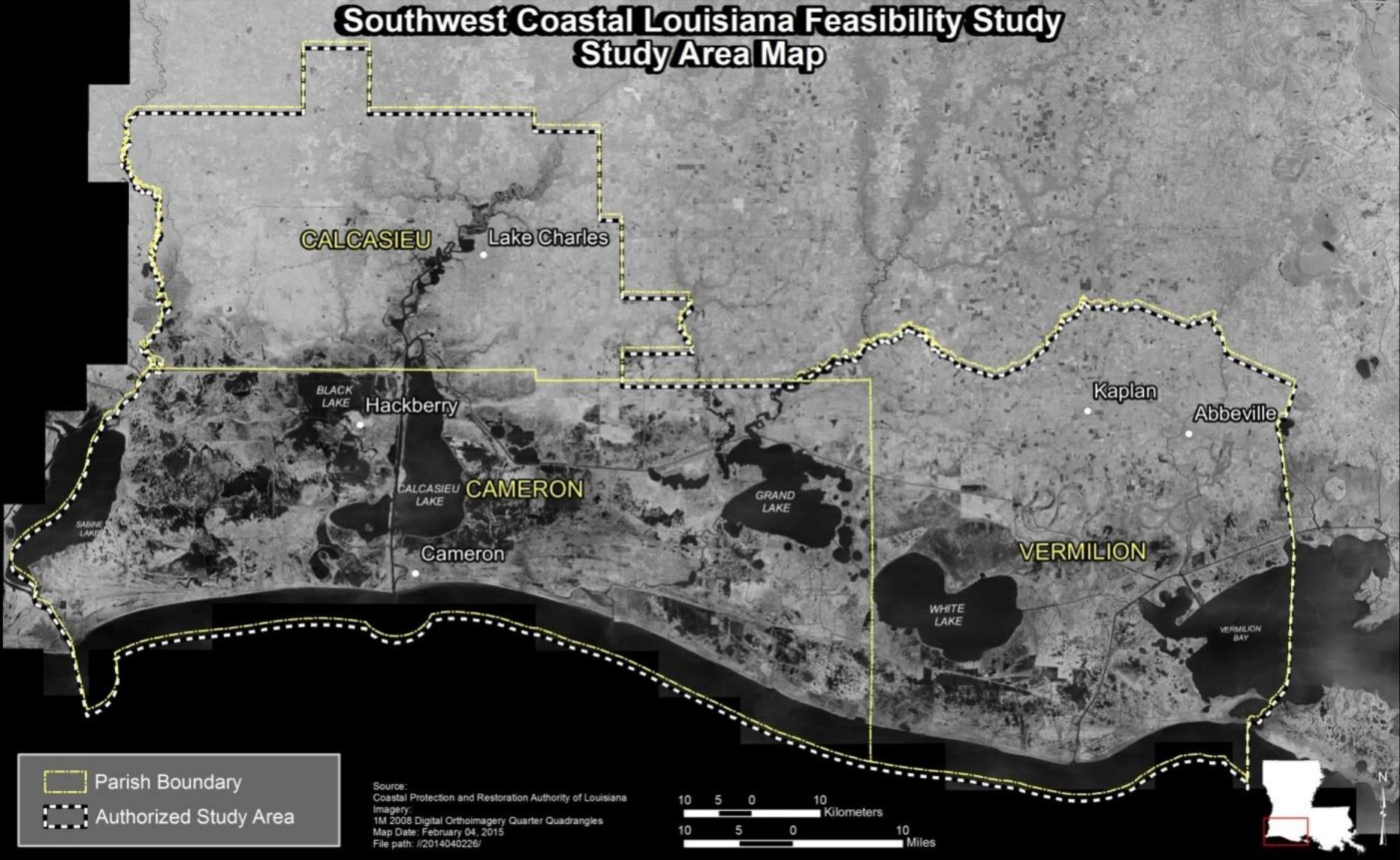


Figure 1. Southwest Coastal Louisiana Project Area

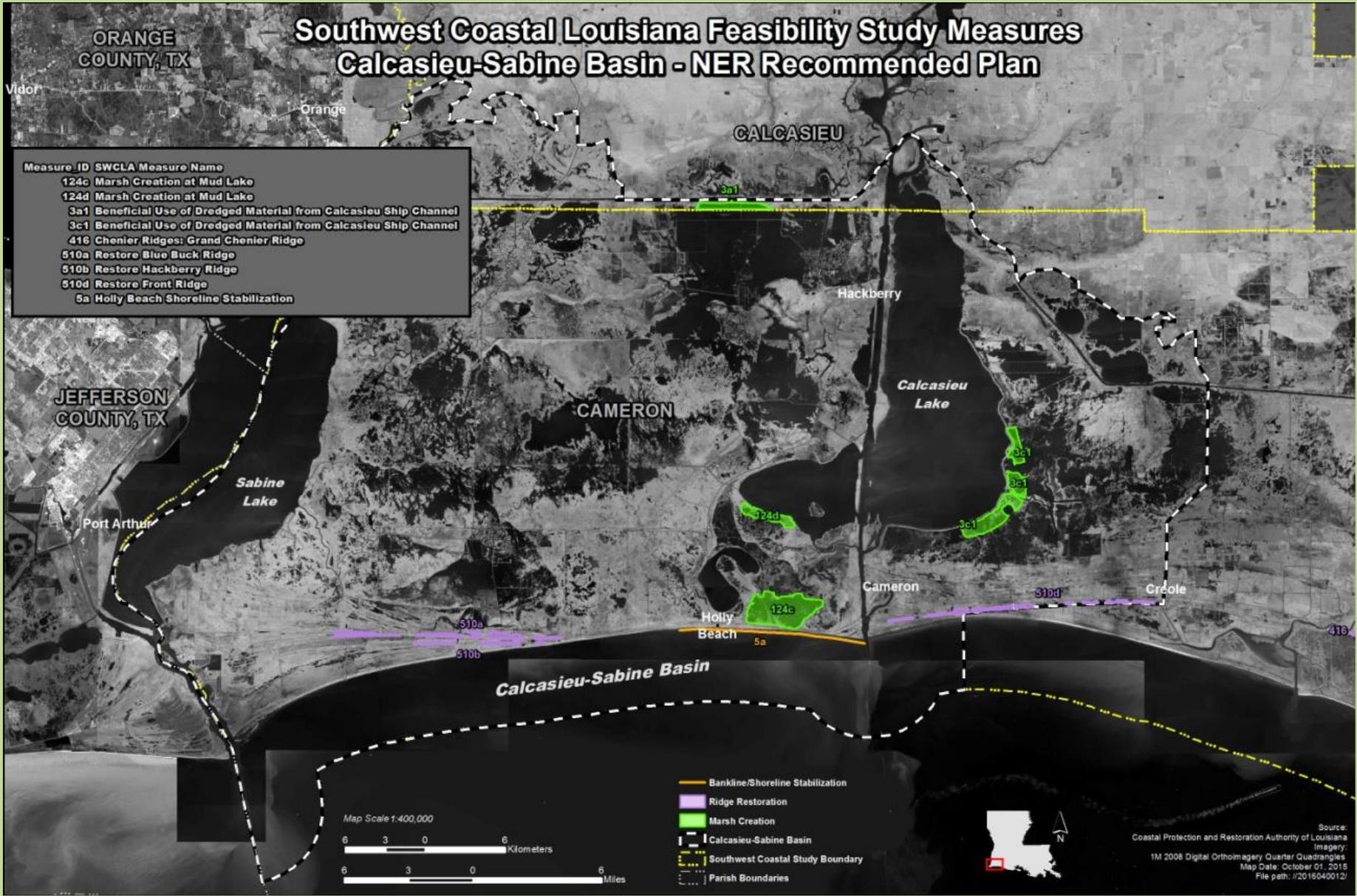


Figure 2. NER RP Measures in the Western Portion of the Study Area.

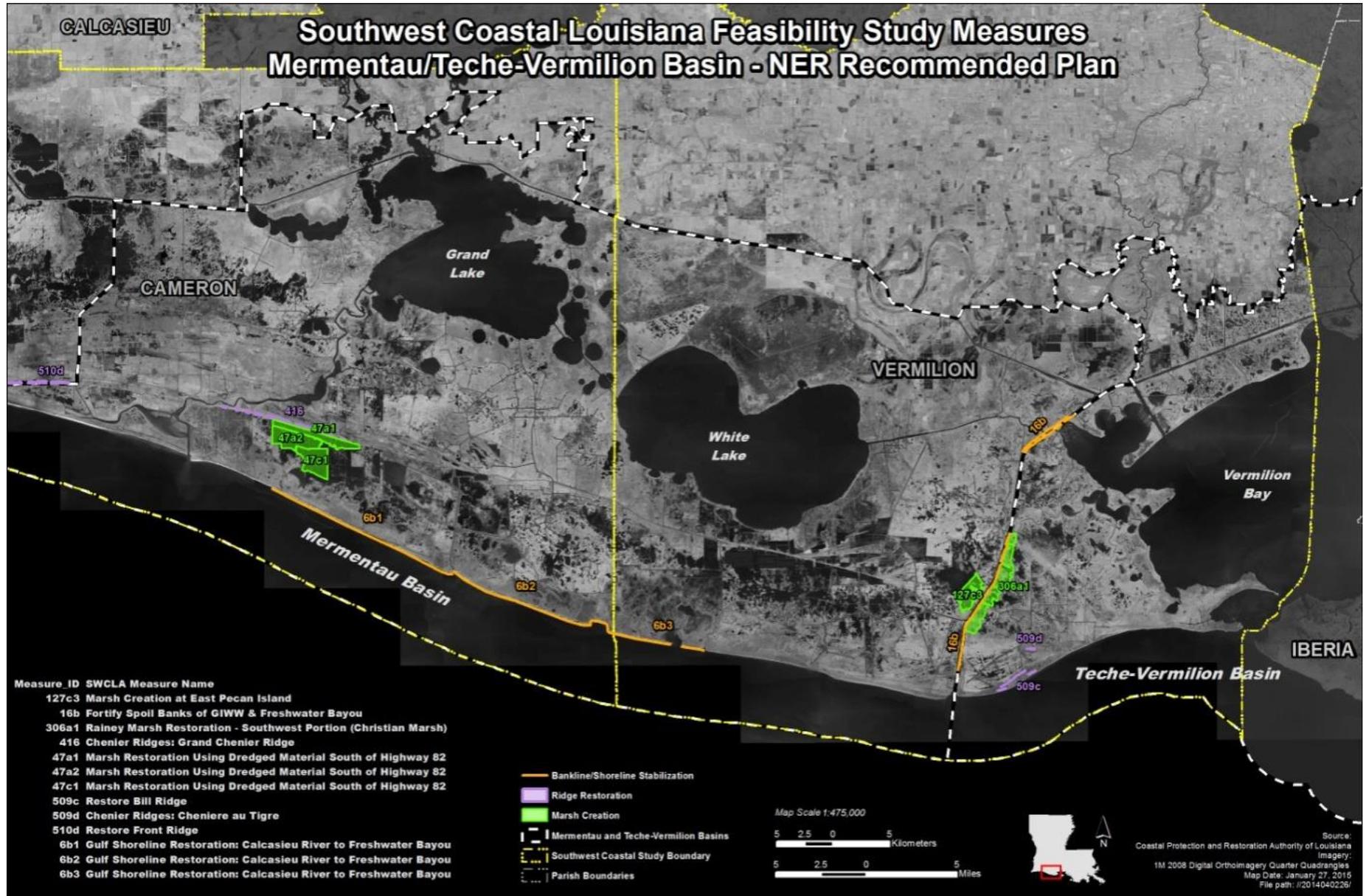


Figure 3. NER RP Measures in the Eastern Portion of the Study Area.

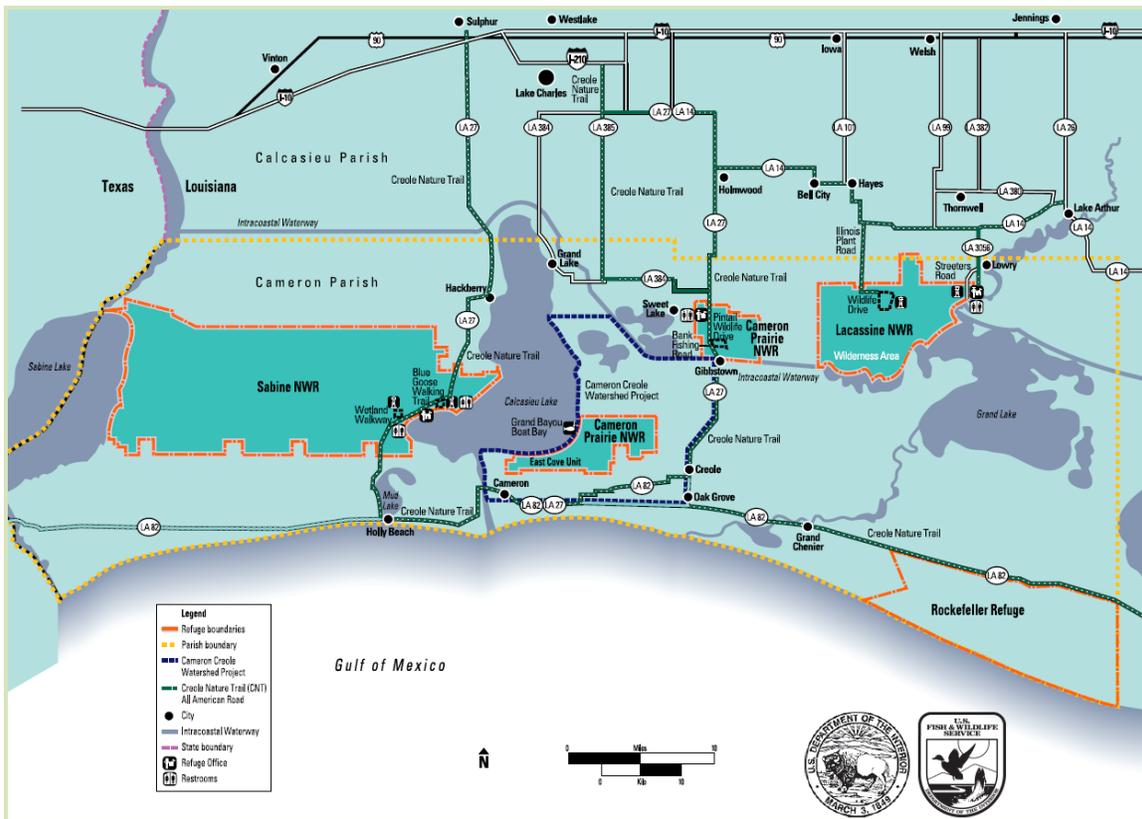


Figure 4. Sabine and Cameron Prairie Nation Wildlife Refuges.

Coastal Restoration Projects Impacted by NER RP Measures: Many of the NER RP measures would be constructed in the immediate vicinity of other coastal restoration projects, such as the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) projects (**Figure 5**). **Table 3** lists the names of other coastal restoration projects within the Southwest Coastal Louisiana project area corresponding to **Figure 5**. The following projects would be impacted by the implementation of the NER RP.

- Shoreline protection Measure 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and CS 33 (Cameron Parish Shoreline).
- Project CS-59 (Oyster Bayou Marsh Creation and Terracing) would be directly impacted by construction of the NER RP marsh restoration measure 124c (**Figure 6**). Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation) would be directly impacted by construction of the NER RP marsh restoration measure 3c1 (**Figure 7**). Due to the close proximity, the proposed NER RP measures would be constructed to avoid existing coastal restoration project by construction of temporary containment/exclusion dikes that would contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing coastal restoration project sites. Temporary containment/exclusion dikes would be allowed to degrade naturally to restore connectivity with surrounding areas or they would be degraded by the NFS the third year following completion of construction, whichever occurs first.

Mitigation Projects Directly Impacted by the NER RP Measures: In addition to above cited coastal restoration projects, existing mitigation projects, identified by Mitigation Manger Kelley Templet with the LADNR, Office of Coastal Management, were constructed by various companies (e.g., oil and gas, Union Pacific, and others) and are designed and constructed to offset unavoidable anticipated losses to wetlands from permitted activities.



Figure 8 and **Table 4** contain information about mitigation projects that occur within the project area. In most instances, these mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. Where overlap occurs, proposed NER RP measures would not be constructed until the mitigation projects satisfy their permit obligations.

Fact Sheets located in Appendix K of the Integrated Final Report and EIS contain additional NER RP measure details, description of construction equipment, and quantities and types of fill to be placed in wetlands. *The proposed action itself consists of measures to minimize the adverse effects of storm water erosion and thus requires no separate measures or controls for compliance with CWA Section 402(p) and LAC 33:IX.2341.B.14.j.*

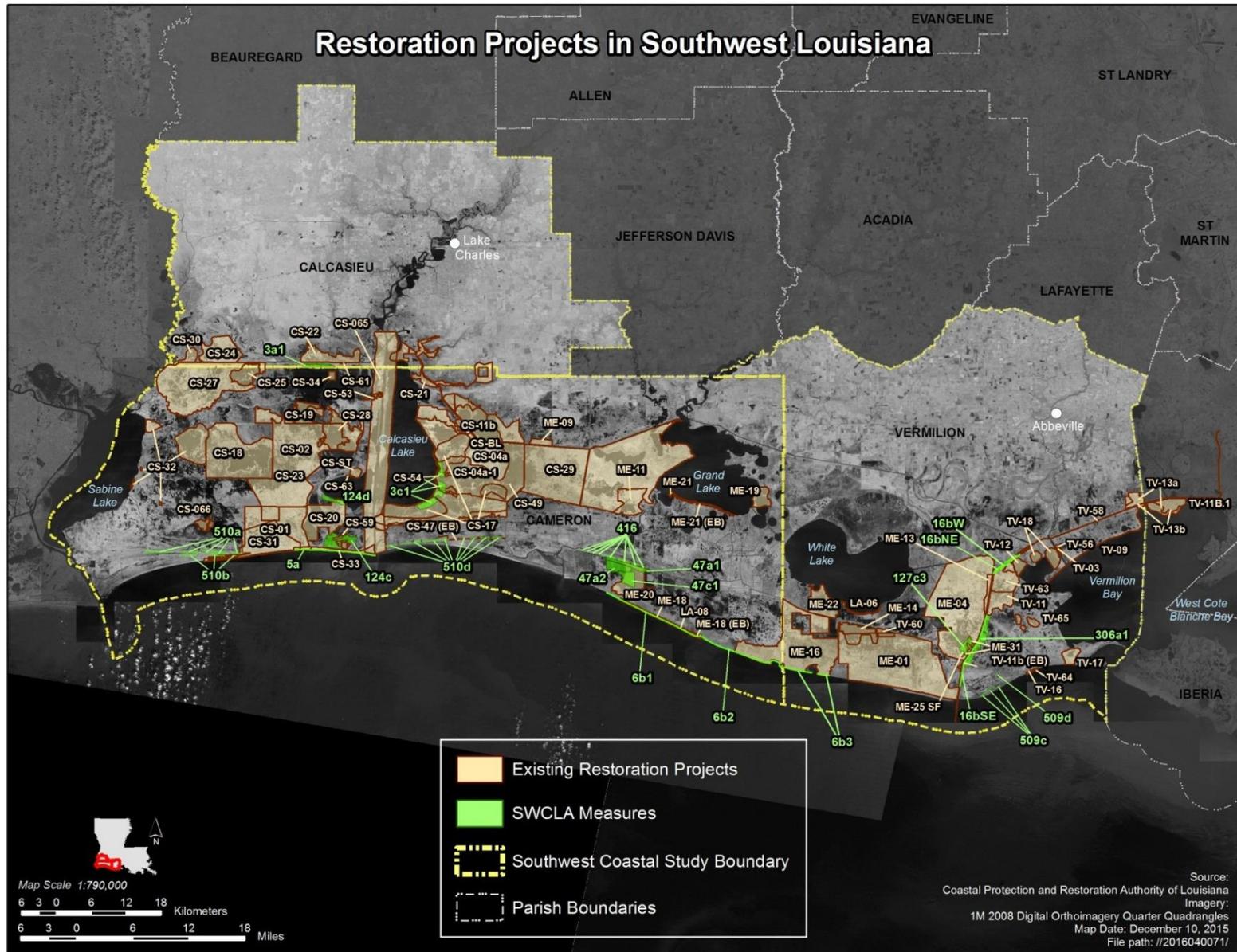


Figure 5. Ecosystem Restoration Activities and proposed NER RP Projects in Southwest Coastal Louisiana Project Area.



Table 3. List of Ecosystem Projects Displayed in Figure 3-1. (*projects would be impacted/benefitted by the NER RP measures)

<p>CS-01 Holly Beach Breakwaters Project CS-02 Rycade Canal Marsh Management CS-04a Cameron-Creole Maintenance CS-04a-1 Cameron-Creole Structure Automation CS-11b Sweet Lake/Willow Lake Hydrologic Restoration CS-17 Cameron Creole Plugs CS-18 Sabine National Wildlife Refuge Erosion Protection CS-19 West Hackberry Vegetative Planting Demo CS-20 East Mud Lake Marsh Management CS-21 Highway 384 Hydrologic Restoration CS-22 Clear Marais Bank Protection CS-23 Replace Sabine Refuge Water Control Structures CS-24 Perry Ridge Shore Protection CS-25 Plowed Terraces Demonstration CS-27 Black Bayou Hydrologic Restoration CS-28-1 Sabine Refuge Marsh Creation, Cycle 1 CS-28-2 Sabine Refuge Marsh Creation, Cycle 2 CS-28-3 Sabine Refuge Marsh Creation, Cycle 3 CS-28-4-5 Sabine Refuge Marsh Creation, Cycles 4-5 CS-29 Black Bayou Culverts Hydrologic Restoration CS-30 GIWW - Perry Ridge West Bank Stabilization *CS-31 Holly Beach Sand Management (impacted by NER RP Measure 5a) CS-32 East Sabine Lake Hydrologic Restoration *CS-33 Cameron Parish Shoreline Restoration (impacted by NER RP Measure 5a) CS-34 Marcantel Supplemental Beneficial Use Disposal Area CS-47 Trosclair Road Repairs CS-49 Cameron-Creole Freshwater Introduction CS-53 Kelso Bayou Marsh Creation</p>	<p>CS-53 Kelso Bayou Marsh Creation *CS-54 Cameron-Creole Watershed Grand Bayou Marsh Creation (impacted by NER RP Measure 3c1) *CS-59 Oyster Bayou Marsh Creation and Terracing (impacted by NER RP Measure 124c) CS-61 Brannon Ditch CS-63 Sabine Shellbank Stabilization CS-65 Calcasieu Ship Channel Salinity Controls CS-66 Cameron Meadows Marsh Creation and Nourishment CS-BL Blind Lake CS-ST Sabine Terraces LA-06 SP Foundation Improvements Demo LA-08 Bio-Engineered Oyster Reef Demo ME-01 Pecan Island Freshwater Introduction ME-04 Freshwater Bayou Wetland Protection ME-09 Cameron Prairie National Wildlife Refuge Shoreline Protection ME-11 Humble Canal Hydrologic Restoration ME-13 Freshwater Bayou Bank Stabilization ME-14 Pecan Island Terracing ME-16 Freshwater Introduction South of Highway 82 ME-18 Rockefeller Refuge Gulf Shoreline Stabilization ME-19 Grand-White Lakes Landbridge Protection ME-20 South Grand Chenier Marsh Creation ME-21 Grand Lake Shoreline Protection ME-22 South White Lake Shoreline Protection ME-25 Marsh Creation Near Freshwater Bayou ME-31 Freshwater Bayou Marsh Creation</p>	<p>TV-03 Vermilion River Cutoff Bank Protection TV-09 Boston Canal/Vermilion Bay Bank Protection TV-11 Freshwater Bayou Bank Protection TV-11b Freshwater Bayou Bank Stabilization TV-11b.1 Acadiana Gulf of Mexico Access Channel TV-12 Little Vermilion Bay Sediment Trapping TV-13a Oaks/Avery Canal Hydrologic Restoration, Increment 1 TV-13b Oaks/Avery Structures TV-16 Cheniere Au Tigre Sediment Trapping Demonstration TV-17 Lake Portage Land Bridge TV-18 Four Mile Canal Terracing and Sediment Trapping TV-56 Four-Mile Canal Storm Surge Reduction Construction TV-58 Boston Canal TV-60 Front Ridge Chenier Terracing/Protection TV-63 Cole's Bayou Restoration TV-64 Cheniere au Tigre TV-65 Rainey Audubon Wildlife Sanctuary Earthen Terraces</p>
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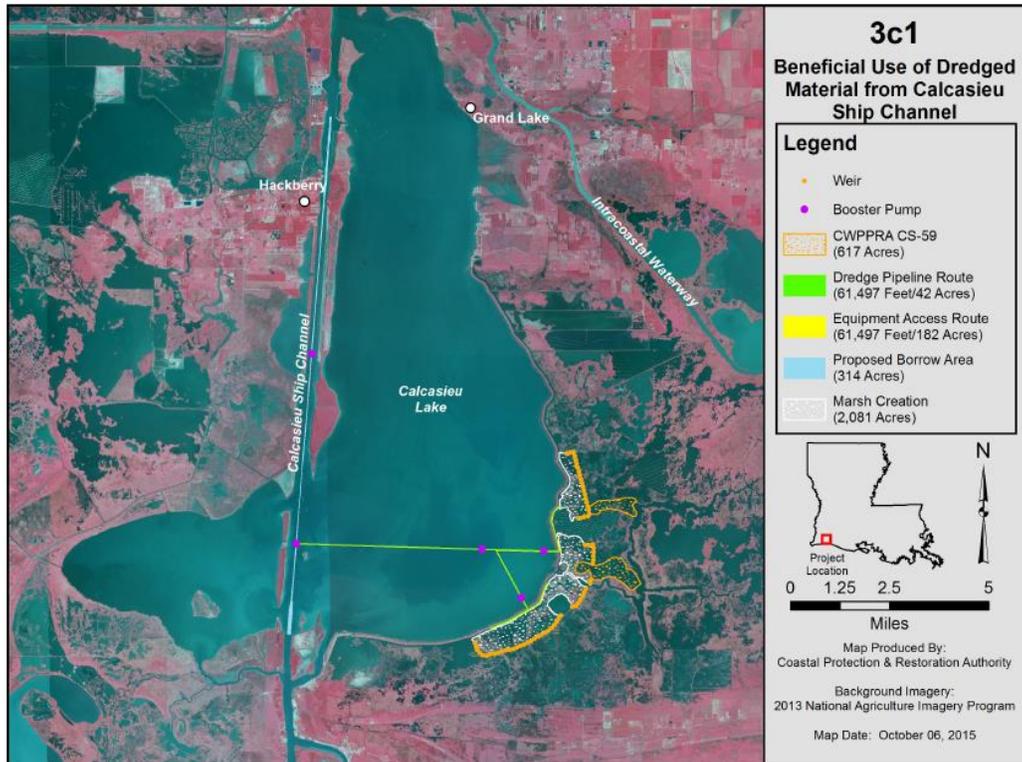


Figure 6. NER RP Measure 3c1 Adjacent to CWPRA Project CS-54 Cameron Creole Watershed

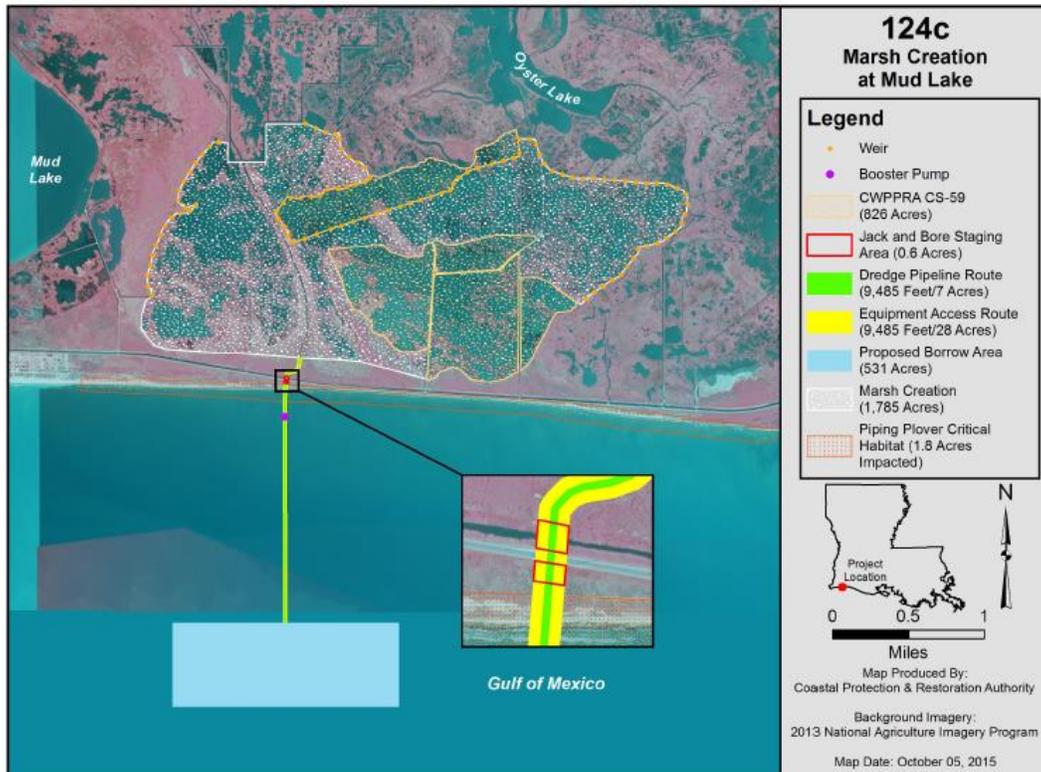


Figure 7 NER RP Measure 124c Adjacent to CWPRA CS-59 Oyster Bayou Restoration

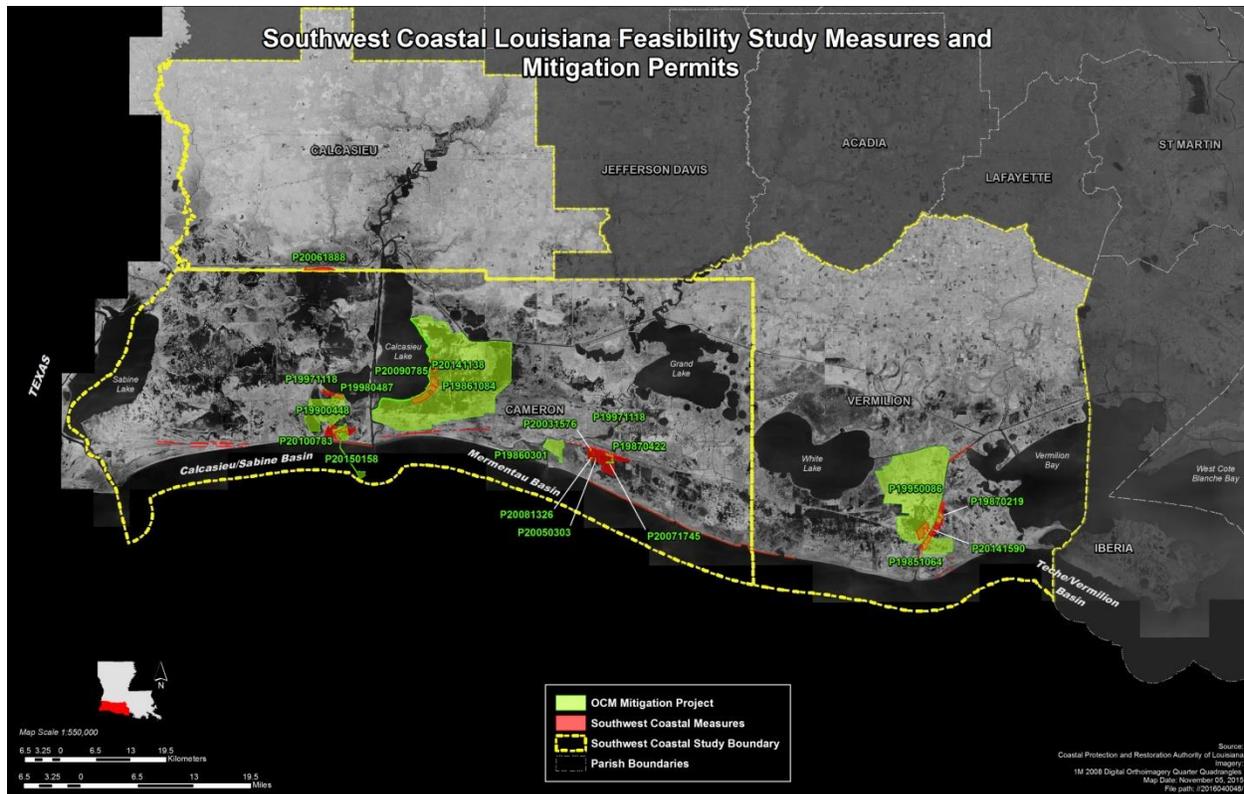


Figure 8. Permitted Mitigation Projects and Southwest Coastal Louisiana Study Measures.

Table 4: Mitigation Projects that Overlap with NER RP Features.

Permit #	Description	NER RP Feature	Permittee or Owner	Expiration Date (permit completion date + 20 years)	Mitigation Project Description
Tier I Features					
P20061888	Terraces at GIWW N of Black Lake	3a1	Gulfport Energy Corporation	11/30/2032	Proposed construction of 5,358 linear ft of terraces south of the GIWW and north of Black Lake.
P19900448	Marsh Management Plan area	124d	Apache Louisiana Minerals	11/13/2016	Install and maintain water control structures for CTU 1 and 2. In CTU 1, 64,000 linear ft of smooth cordgrass plantings. In CTU 2, 32,470 linear ft of boundary levee are to be repaired. Various water control structures are to be repaired or replaced.
P19971118	West Cove Planting Project	124d	Union Pacific Resources	7/28/2022	West Cove Planting Project; 5,000 ft of plantings of <i>Spartina alterniflora</i> .
P19950086	Marsh Management Plan area	127c3	Vermilion Corporation	4/1/2021	Eight water control structures will be installed; a riprap levee will be constructed; five double flapgated culverts and one earthen plug will be installed; two earthen plugs will be constructed.
Tier II Features					



P20141590	Spoil Placement	306a1	Hilcorp Energy Company	4/8/2040	Dredging of 15,430 cubic yards of native material to construct slip for the purpose of installing a drill rig, well protector and pilings. The dredged material will be pumped into a shallow pond adjacent to the proposed drill site using a temporary discharge pipe. An additional 301 cubic yards of material will be displaced to construct containment berms.
Tier III Features					
P20090785	Spoil disposal/levee restoration	3c1	Cameron Parish Drainage District #3	8/13/2034	Consists of five water control structures and 17.1 miles of earthen levee (CWPPRA Project CS-04A-L Phase II).
P20141138	Rip-rap Grand Bayou	3c1	CPRA	1/29/2040	Installation of 21,000 tons of riprap along the Calcasieu Lake Shoreline near the Peconi, Mangrove and Grand Bayou water control structures.
P19870422	Marsh Management Plan area	47a2	T. Bonsall	2/3/2023	Construction of a levee and multiple water control structures (South of Upper Mud Lake).
P20031576	Mitigation for P20031304	47a2	Kash Oil & Gas, Inc.	3/31/2029	Constructed 4,803 linear feet of terraces and planted with <i>Spartina alterniflora</i> .
P20081326	Mitigation for P20080132	47a2	PetroQuest Energy, L.L.C.	11/25/2033	Construct and plant 2,897 linear ft of wave dampening terraces that will capture re-suspended sediments and protect fragile shorelines by planting plugs of smooth cordgrass on both sides of constructed terraces.
P20071745	Mitigation for 20070883	47c1	Manti Operating Company	3/5/2025*	Construction of ten 500-foot terraces, eight 300-foot terraces, two 200-foot terraces and eight 400-foot terraces (6.1 acres). Plantings of <i>Spartina alterniflora</i> rows on each side of the terraces.

c. Authority and Purpose.

Study Authority

An investigation for additional hurricane storm damage risk reduction and related purposes was authorized by a Resolution of the Committee on Transportation and Infrastructure, U.S. House of Representatives, Docket 2747, on December 7, 2005, which included consideration of a plan for an armored 12-foot levee along the Gulf Intracoastal Waterway (GIWW) across Calcasieu, Cameron, and Vermilion Parishes.

CEMVN initiated the Section 905(b) reconnaissance study in April 2006. NED alternatives to mitigate for hurricane-induced damages within Calcasieu, Cameron, and Vermilion Parishes were formulated through a series of planning meetings with the State of Louisiana, local parishes, and other stakeholders. Structural, nonstructural, and coastal restoration measures were considered; however, the economic analysis focused on NED benefits only. The 905(b) reconnaissance study found sufficient Federal interest to conduct a feasibility study and was approved to advance to the feasibility phase in 2007.

The investigation of large scale ecosystem restoration concepts, including the Chenier Plain Freshwater Management and Allocation Reassessment Study (Chenier Plain Study), was recommended in the January 31, 2005 Chief's Report for the LCA, Ecosystem Restoration program. The Chenier Plain Study was one of six large-scale restoration concepts that were purported to have the ability to "significantly restore environmental



conditions that existed prior to large-scale alteration of the natural ecosystem” upon construction. The LCA program was authorized in Title VII of WRDA 2007. Guidance provided by the Director of Civil Works on December 19, 2008 states that “the coastal restoration components proposed as part of the LCA Chenier Plain study will be evaluated as part of the Southwest Coastal Louisiana feasibility study”. A Feasibility Cost Share Agreement between USACE and the Louisiana Coastal Protection and Restoration Authority Board (CPRAB) as the non-Federal Sponsor was executed on January 14, 2009 for the study and analysis of the NED and NER study alternatives.

Study Purpose

The study purpose is to evaluate coastal storm flood damages and coastal ecosystem degradation in Cameron, Calcasieu, and Vermilion parishes in Louisiana. The intent is to develop potential solutions to these water resource problems.

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material. (grain size, soil type)

The borrow material to be dredged for the nine marsh restoration measures is characterized primarily as silt and clay, with varying amounts of organic material and sands. For shoreline protection measures, the fill material would be rock (200-pound gradation) and geotextile fabric.

(2) Quantity of Material. (cubic yards)

See **Tables 2a, 2b, and 2c**, attached Fact Sheets describing NER measures and Appendix K for project measure details. **Table 5** presents the borrow site dimensions.

Table 5. Southwest Coastal Louisiana Study Borrow Site Dimensions

Marsh Restoration Measures	Length by Width (ft) ¹	Borrow Area (acres)	Borrow Area Cut depth (ft)	Access Route Length by Width (ft)	Access Route Area (acres)	Access Route Cut Elevation (ft) ²
3a1	USACE authorized channel dimensions			No dredging required for access		
3c1	USACE authorized channel dimensions			3,500 x 96	7.7	-8
47a1, 47a2, 47c1 ³	4,922 x 14,855	1,679	-15	10,000 x 96	22	-8
124c	2,937x7,880	531	-15	4,000 x 96	8.8	-8
124d	USACE authorized channel dimensions	USACE authorized channel dimensions		21,453 x 96	47.3	-8
127c3 ⁴	11,516 x 18,655	4,932	-15	1,400 x 96	2.2	-8
306a1 ⁴	11,516 x 18,655	4,932	-15	No dredging required for access		

¹- Impacts to the shoreline due to the off shore borrow areas would be modeled in the PED Phase. Presently all off shore borrow areas were delineated, based on previous engineering experience, to have no significant impacts to the existing shoreline.

²-All excavated access routes would be backfilled upon construction completion.

³-These restoration features will utilize the same borrow source for construction but at different times.

⁴-These restoration features will utilize the same borrow source for construction but at different times.

(3) Source of Material.

Marsh restoration borrow material would be dredged from a number of off-shore borrow areas and from the Calcasieu Ship Channel (**Figures 9 and 10**). See Fact Sheets in Appendix K for additional measure and borrow area details. Rock material for the shoreline protection measures would be imported from outside the study area and transported via barges from an inland commercial quarry.

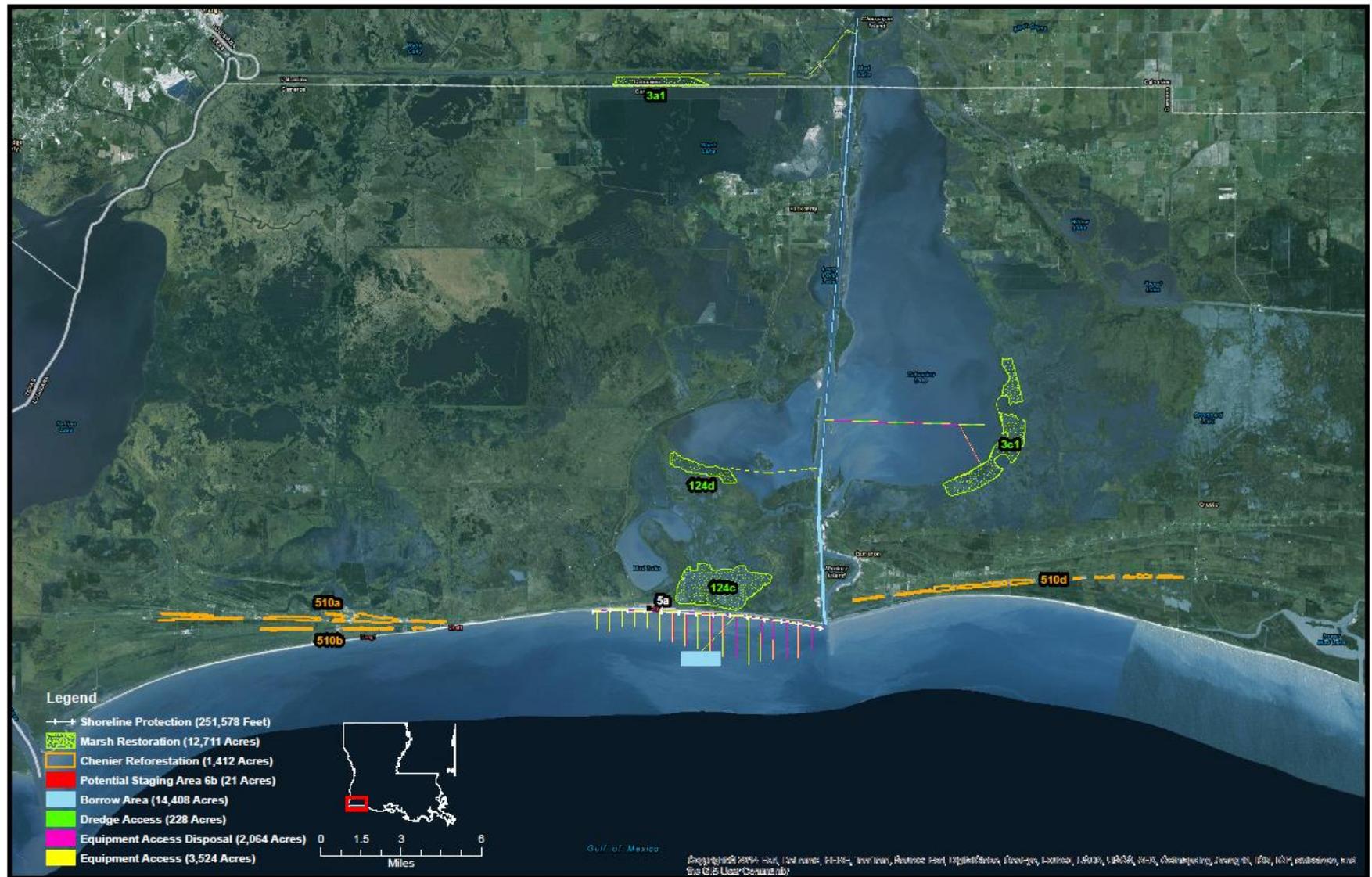


Figure 9. NER RP measures, including borrow and access routes in western portion of study area.

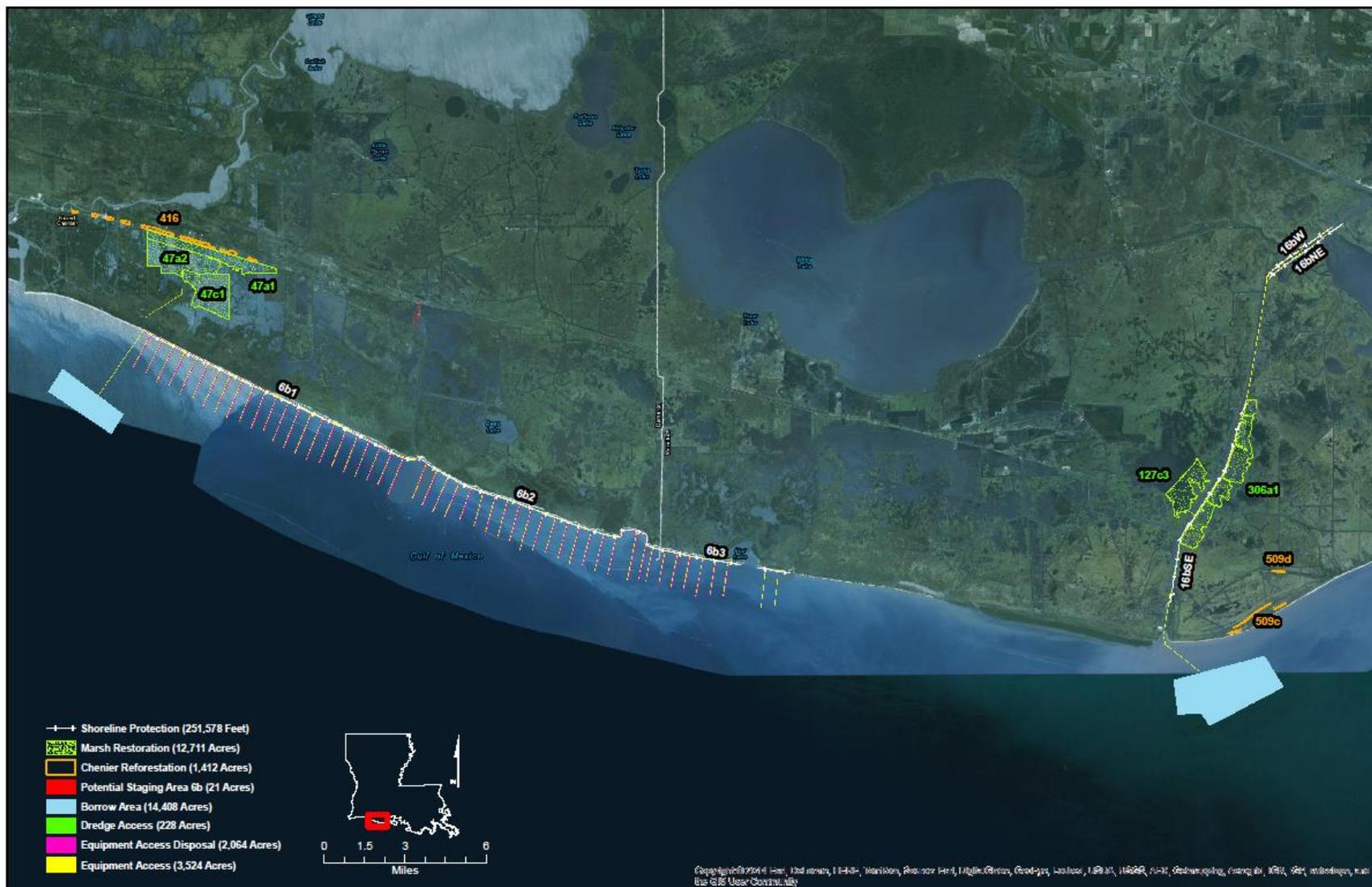


Figure 10. NER RP measures including borrow and access routes in eastern portion of study area.



e. Description of the Proposed Discharge Site(s)

Proposed marsh restoration measures are located in interior fragmented marshlands throughout the entire study area (**Figures 9** and **10**). Shoreline protection measures are located along the Gulf of Mexico and Freshwater Bayou shorelines (**Figures 9** and **10**). Measure 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and State project CS 33 (Cameron Parish Shoreline). The remaining shoreline protection measures would be located offshore of brackish and saline marsh-dominated shorelines. If no action is taken, the beach and marsh habitats would continue to be subjected to the prevailing erosional processes that would eventually result in a direct loss and conversion of the existing marsh to open water. This marsh loss would reduce available marsh habitat and result in the loss of critical habitat for threatened and endangered species, essential fish habitat, and marsh and barrier beach habitats used by species of special interest. This habitat loss would adversely impact Federally-managed fisheries, other aquatic resources, and diminish the storm-surge protection benefits of the barrier beach and marsh systems.

Material dredged via mechanical dredge for access corridors for construction of the five shoreline protection measures would be temporarily side-cast onto water bottoms immediately adjacent to the temporary access corridor. Following construction, the side-cast material would be returned to the temporary access corridor.

Both the Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measure are being recommended for additional long term study. Additional modeling and NEPA analysis would be required before implementation of these measures.

(1) Location. (map)

See **Figures 1, 2** and **3** for NER RP measure locations; **Figures 9** and **10** display NER RP measures, borrow sites and access corridors.

(2) Size. (acres)

The size of each NER RP measure is listed in **Tables 2a, 2b,** and **2c**.

(3) Type of Site. (confined, unconfined, open water)

Disposal sites for the marsh restoration are comprised of shallow open-water and fragmented marsh (**Figures 2** and **3**). See also Fact Sheets and Appendix K of the Main Report for measure details of construction.

Disposal sites for the breakwater measures include shallow open water immediately offshore of the Gulf Shoreline (**Figures 2** and **3**). The shoreline protection measures would be placed on existing marsh shorelines (**Figures 2** and **3**).

(4) Type(s) of Habitat.

The nine marsh restoration measures are characterized by shallow open-water, fragmented and degraded emergent marsh which provides low quality wetland habitat. Breakwaters would be located immediately offshore in the Gulf of Mexico waters. The remaining shoreline protection measures would be located offshore of brackish and saline marsh-dominated shorelines. Salinity within the disposal areas is variable due to tidal fluctuation; a variety of marine and freshwater fauna utilize the area. These wetland habitats also function as critical nursery areas for various species of finfish and shellfish. Interior marsh is necessary for the successful completion of the life cycles of several species, and provides detritus that forms the basis of the food chain for organisms utilizing the area.

(5) Timing and Duration of Discharge.

NER RP measures were categorized in to three tiers whereby Tier I measures would be constructed before Tier II, and Tier II measures constructed before Tier III. Tier I measures may be constructed simultaneously because they would not affect the construction of any nearby Tier I project measure. Shoreline protection measures



would be constructed prior to marsh restoration measures in order to provide immediate protection of the storm-vulnerable marsh restoration measures. This approach contributes to the sustainability of the marsh restoration measures. Tier II project measures were so categorized because they utilize the same borrow or staging area, and/or construction of these measures would potentially interfere with construction of a Tier I project measure. Tier II project measures would be constructed contemporaneously as the construction of any one of these project measures would not affect any other project measure within this grouping. Tier III project measures were so categorized because they would utilize the same borrow or staging area, and/or interfered with construction of a Tier II project, and/or interfered with an existing mitigation project. Tier III project measures would be constructed contemporaneously if they would not affect construction of the other project measures within this grouping. In categorizing project measures, it was assumed that all construction funds would be available, multiple construction contracts could be let at one time, and an adequate supply of all materials to facilitate construction. More detailed design and analysis would be conducted during the Preconstruction Engineering and Design (PED) Phase. The construction schedule for completing all project measures is expected to last a total of about 60 months. Dredge spoil retention measures would be constructed prior to discharge of dredged material at marsh restoration sites. Duration of construction for each measure is provided in **Tables 2a, 2b, and 2c**.

Tier I Projects:

- Holly Beach Shoreline Stabilization – Breakwaters (5a)
- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b1)
- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bSE)
- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bNE)
- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bW)
- Beneficial Use of Dredged Material from the Calcasieu Ship Channel (3a1)
- Marsh Restoration at Mud Lake (124d)¹
- Marsh Restoration at Pecan Island (127c3)
- Chenier Ridges: Grand Chenier Ridge (416)²
- Restore Bill Ridge (509c)²
- Chenier Ridges: Cheniere au Tigre (509d)²
- Restore Blue Buck Ridge (510a)²
- Restore Hackberry Ridge (510b)²
- Restore Front Ridge (510d)²

Tier II Projects:

- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b2)
- Marsh Restoration at Mud Lake (124c)
- Rainey Marsh Restoration Southwest Portion (Christian Marsh) (306a1)

Tier III Projects:

- Beneficial Use of Dredged Material from the Calcasieu Ship Channel (3c1)¹
- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b3)
- Marsh Restoration Using Dredged Material South of Highway 82 (47a1)
- Marsh Restoration Using Dredged Material South of Highway 82 (47a2)
- Marsh Restoration Using Dredged Material South of Highway 82 (47c1)

Recommended for Further Study:

- Calcasieu Ship Channel Salinity Control Structure
- Cameron-Creole Spillway Structure



¹- Recommended for USFWS independent Congressional authorization and appropriation for construction by USFWS

²- Individual features that comprise the chenier reforestation measure

f. Description of Disposal Method. (hydraulic, drag line, etc.)

Sediments for the nine marsh restoration measures would be dredged from a number of off-shore borrow areas (see **Figures 9** and **10** and Fact Sheets located in Appendix K of the Integrated Final Report for individual project measure descriptions) and from the Calcasieu Ship Channel (via USACE maintenance dredging). The contractor would use a hydraulic dredge to excavate fill from the available borrow areas or to convey material from Calcasieu Ship Channel that was dredged during CEMVN maintenance dredging events. The fill would then be pumped through a series of booster pumps to the disposal (marsh restoration) areas via submerged sediment pipeline.

II. Factual Determinations

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope.

Dredged borrow sediments used for the nine marsh restoration measures would be placed to achieve a post-construction marsh target elevation of +1.5 feet North American Vertical Datum of 1988 (NAVD88) following dewatering and consolidation. Earthen containment dikes would be constructed of *in situ* material obtained from within the marsh restoration cells with side slopes of no more than 4H:1V with a crown width of approximately 5 feet. The five shoreline protection measures would have varying elevations and slopes ranging from +3.5 feet NAVD88 with 2:1 side slopes to +3.0 feet NAVD88 with 4:1 side slopes. Water bottom substrates dredged for temporary access corridors to the five shoreline protection sites would be temporarily side-cast. Following completion of construction activities, this side-cast material would be returned to the dredged temporary access corridor. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts to the physical substrate.

(2) Sediment Type

Dredged borrow sediments, taken from a number of off-shore borrow areas and the Calcasieu Ship Channel (see **Figures 9** and **10** and Fact Sheets located in Appendix K of the Integrated Final Report), are composed primarily of silt, with varying amounts of organic material and sand. Detailed grain-size analysis would be performed prior to construction as part of the Preconstruction Engineering and Design (PED) phase. Sediments in the project area are similar to sediments discharged by the Atchafalaya River. Sediment travels westward from Atchafalaya Bay and the GIWW. A large percentage of Atchafalaya River sediments are deposited along the Gulf shoreline in the vicinity of Freshwater Bayou while coarser sediments continue westward along the shoreline. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts.

(3) Dredged/Fill Material Movement.

Little or no movement of dredged or fill material is anticipated to occur following dewatering and consolidation of sediments used for the nine marsh restoration measures, because of the typically low velocities of water flow across the nine marsh restoration measures, construction of earthen containment dikes within the marsh restoration/nourishment areas, construction of temporary containment/exclusion dikes surrounding existing coastal restoration projects, and the use of best available practical techniques and BMPs during construction.

Rock placed for the five shoreline protection measures is expected to settle initially following construction due to the overburden pressure that the rock would create on underlying unconsolidated substrate. However, placement of geotextile fabric between rock and substrate would help to prevent the complete sinking of the rock over time. Additional placement of rocks during Operations and Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) is anticipated (on the existing footprint) but rocks are not expected to move laterally



following placement. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts and dredged/fill movement.

(4) Physical Effects on Benthos. (burial, changes in sediment types, etc.)

Dredging and construction activities would have localized effects on benthos. The factors primarily responsible could include increased turbidity and total suspended sediments, organic enrichment, chemical leaching, reduced dissolved oxygen, and elevated carbon dioxide levels, among others. Dredging for borrow sediments and temporary access corridors, discharge of dredged borrow sediments and construction of containment/exclusion dikes for the nine marsh restoration measures and to prevent dredged effluent from entering existing coastal restoration projects would smother and destroy immobile benthic organisms and force mobile benthos to move from the borrow and discharge areas. It is expected, however, that benthic organisms would re-colonize the borrow sites and the discharge sites within 1-3 years due to its similarity with the existing substrate in the disposal areas (Wilber et al 2008). The conversion of shallow open-water and fragmented marsh to restored contiguous marsh would temporarily preclude larger aquatic organisms from initially re-entering the disposal area. Smaller organisms would, however, be able to access the newly restored marsh during high tides. Temporary containment/exclusion dikes would naturally degrade or would be breached in multiple places at three years following construction, if necessary, to restore aquatic organism and fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. Following dredging and construction, dredged sediments would consolidate and differentially settle to different elevations thereby resulting in development of lower-lying areas that would develop into small ponds and streams further enabling aquatic organism access from surrounding waters. Wetlands throughout coastal Louisiana and the study area have been fragmenting, degrading and being lost at significant rates. Therefore, restoring marsh is considered to have a higher ecological value than shallow open-water because of its benefits to terrestrial and aquatic organisms in an area with decreasing wetland habitats.

Dredging temporary access corridors, the placement of geotextile fabric and rock for shoreline protection would smother sessile and slow moving benthic organisms and force mobile organisms to move from the disposal areas. The rock and geotextile fabric, by design, covers benthic subtidal sediments; hence, infauna would likely be absent. However, rock would provide substrate for epifaunal colonization (Bilkovic and Mitchell 2013). The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts and dredged/fill movement.

(5) Other Effects.

No other physical substrate determinations.

(6) Actions Taken to Minimize Impacts.

Dredged sediments would be placed at the nine marsh restoration sites to achieve a post-construction marsh target elevation to achieve of +1.5 feet NAVD88, following dewatering and consolidation. During construction of the nine marsh restoration sites, effluent from dewatering would be discharged into adjacent wetlands via spill box weirs. Earthen containment/exclusion dikes would be constructed from *in-situ* material located within the marsh restoration/nourishment area using a mechanical (clamshell or bucket) dredge. Access for the mechanical dredge would be via the designated pipeline corridors. Borrow areas used for construction of earthen containment/exclusion dikes would be refilled during the placement of dredged material for marsh restoration. One foot of freeboard for containment/exclusion dikes would be maintained at all times during dredge discharge operations. Containment/exclusion dikes would be breached in multiple places three years following construction, if necessary, to restore fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations or most appropriate.

Construction of the five shoreline protection measures and placement of rock and geotextile fabric would utilize the best available practical techniques and BMPs to avoid and minimize potential adverse impacts to surrounding aquatic and terrestrial environment. Geotextile fabric would be placed to reduce subsidence of placed rock, and rock would be placed with a barge-mounted crane to increase precision of placement.



b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water

(a) Salinity

The Louisiana coastal area is horizontally stratified with water salinities decreasing gradually from the coast inland (Gosselink 1984). Dredging borrow sites, construction of temporary access corridors, the nine marsh restoration measures and the five shoreline protection measures would have little, if any, effects on local or basin-wide salinity. The proposed action would not significantly alter existing waterways or other water movement patterns. Sediments and dredge effluent taken from off-shore borrow areas (see Fact Sheets) and placed at interior disposal marsh restoration areas may have higher salinities compared to the saline marsh restoration sites. However, any differences would likely be minimal and the dredged effluent and higher saline borrow sediments would rapidly desalinate to those ambient salinity conditions following dewatering and consolidation of sediments. Borrow areas would be configured so that stratification would be minimized by orienting the long axis of each borrow area parallel to the Gulf shoreline and with side slopes no steeper than 4(H):1(V).

Construction of shoreline protection measures would not result in localized changes to salinities for the areas immediately behind the shoreline protection measure because these areas would retain connectivity to protected waters through the placement of gaps in the shoreline protection structures to allow hydrologic connectivity. Shoreline protection structures would not provide a hydraulic barrier to the exchange of waters; rather, these structures would reduce wave erosion. Any potential adverse impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to salinity.

(b) Water Chemistry. (pH, etc.)

Construction activities, hydraulic dredging and placement of sediments and other fill materials can result in a localized and temporary reduction in the pH of receiving area waters toward more acidic conditions. The factors responsible include increased turbidity, organic enrichment, chemical leaching, reduced dissolved oxygen, and elevated carbon dioxide levels, among others. Tidal currents present in the project measure areas would serve to disperse and thereby dilute localized changes to pH. Following construction, pH levels in the area would return to those observed prior to measure construction. Any such impacts would be minimized and controlled by utilizing the use of the best available practical techniques and BMPs. The proposed action would have no significant long-term adverse impacts to water chemistry. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to water chemistry.

(c) Clarity

Dredging, placement of dredged sediments, and construction activities in the nine marsh restoration measures would temporarily reduce water clarity due to increased turbidity and suspended sediments. Containment of the dredged material and management of the effluent would minimize impacts to water clarity outside of the disposal areas. The placement of rock for the five shoreline protection measures is expected to result in the disturbance of water bottom, causing a minor, temporary, and localized increase in turbidity levels and decrease in water clarity. Following construction activities, turbidity levels and water clarity in the vicinity of measures would return to those which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to clarity.

(d) Color.

Construction activities, dredging and placement of dredged sediments in the nine marsh restoration measures, and placement of geotextile fabric and rock for the five shoreline protection measures may temporarily change water color. Turbidity levels and suspended sediment levels are expected to temporarily increase at the



construction site until construction is completed. Following completion of construction activities, affected waters would clarify and the water color would return to conditions observed prior to construction.

The disturbance of water bottom substrate during placement of rock and geotextile fabric for the five shoreline protection measures may result in temporary and localized changes to water color. In addition, because shoreline protection would serve to reduce wave erosion, some minor changes to water color in areas protected by the rock breakwaters are expected, as the rock would serve to significantly reduce the wave energy-driven resuspension of water bottom substrate for those areas. Any such impacts would be minimized by the use of the best available practical techniques and BMPs. Following completion of construction activities color conditions would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to color.

(e) Odor.

Construction and dredging activities of reduced sulfur-bearing sediments, typical of estuarine marshes, can result in the emission of reduced sulfur compounds including hydrogen sulfide, often characterized as an objectionable rotten-egg smell. However, these emissions would likely occur infrequently, at low levels and are not expected to be significant or detectable by any sensitive human occupied areas. There would be no expected odors detectable outside of the dredged borrow sites, temporary access corridors, nine marsh restoration measures and five shoreline protection measures construction areas. Following completion of construction activities, odors in the vicinity of project measures would return to those which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to odor.

(f) Taste.

During construction and dredging activities there could be a release of sulfur compounds from sediments; increased turbidity, total suspended sediments, and water temperatures; and decreased oxygen which could likely cause changes to water taste within and immediately adjacent to construction sites. However, there are no human water intakes or other human consumption of waters activities located within or adjacent to any of the project measures. Any change in taste is not expected to be detectable to any nearby human inhabitants. Following construction activities, water taste in the vicinity of measures would return to that which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to taste.

(g) Dissolved Gas Levels.

The biological and chemical content of suspended materials released during dredging, discharge and other construction activities may react with the dissolved oxygen in the water, which can result in temporary and localized, but minor oxygen depletions and a release of ammonia. The introduction of organic material to the water column as a result of discharge can lead to temporary and localized, but minor, high biochemical oxygen demand (BOD) which in turn can lead to temporary and localized, but minor, reduced dissolved oxygen thereby potentially affecting the survival of many aquatic organisms. Decomposition of organic material within the nine marsh restoration measures following discharges of dredged sediments may result in temporary and localized, but minor, reduction in dissolved oxygen and a release of ammonia. Following completion of construction activities, dissolved gas levels in the vicinity of these measures would return to that which existed prior to construction activities.

Placement of rock and geotextile fabric for the five shoreline protection measures may result in disturbances of water bottom substrate along the footprint of the measures. Because of organic material contained within the bottom substrate, this disturbance may result in minor, localized, and short-term reductions in dissolved oxygen levels and ammonia. Tidal currents are expected to quickly disperse waters affected by construction of these measures, such that no significant impacts to dissolved oxygen levels are anticipated. Following completion of construction activities, dissolved gas levels in the vicinity of these measures would return to that



which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to dissolved gas levels.

(h) Nutrients.

Dredged sediments excavated from the borrow sites would contain low but variable concentrations of organic material adsorbed or complex plant nutrient compounds which, if available for biological uptake and use, can lead to eutrophication. However, nutrients released from sediments resuspended during dredging operation have given mixed results as to their ability to stimulate algal growth. However, as these releases are expected to be minor, and because there is expected to be adequate flows and sufficient dissolved oxygen levels in the water column for converting ammonia into non-toxic nitrate, any effects associated with dredging and construction activities associated with these measures are expected to be minor and temporary and nutrients within the water column would rapidly cease following construction. Following completion of construction activities, nutrients within the water column in the vicinity of these measures would return to that which existed prior to construction activities.

Construction activities involving placement of rock and geotextile fabric for the five shoreline protection measures can result in the disturbance of water bottom substrate, which may expose variable levels of organic material to resuspension in the water column, and also resulting in the release of nutrient compounds. However, as these releases are expected to be minor, and because there is expected to be sufficient dissolved oxygen levels in the adjacent waters for converting ammonia into non-toxic nitrate, any effects associated with construction activities associated with these measures are expected to be localized and short-lived and would return to nutrient levels that which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to nutrients.

(i) Eutrophication.

Dredged sediments could contain low but variable concentrations of organic material, and sufficient quantities of ammonia, nitrogen and phosphorous compounds which, if released in available forms during dredging and construction operations, could stimulate the growth of algae and other aquatic plants. Decomposition of organic material within the nine marsh restoration measures following discharges of dredged material may result in a release of ammonia. While ammonia and nitrate may stimulate phytoplankton production, adverse or persistent algal blooms are not expected during construction. Following completion of construction activities, potential for eutrophication in the vicinity of these measures would return to that which existed prior to construction activities.

Placement of rock and geotextile fabric for the five shoreline protection measures could result in the disturbance of water bottom substrate, which may expose variable levels of organic matter, nitrogen and phosphorus to the water column, resulting in the release of minor amounts of these compounds into the water column. While ammonia and nitrate may stimulate phytoplankton production, adverse or persistent algal blooms are not expected during construction. Following completion of construction activities, nutrients within the water column in the vicinity of these measures would return to that which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts of eutrophication.

(j) Others as Appropriate.

No other water circulation, fluctuation, or salinity determinations.

(2) Current Patterns and Circulation

(a) Current Patterns and Flow.

Dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures can significantly change local current patterns and local water circulation. The higher substrate elevations resulting from marsh restoration of shallow open water and fragmented marsh areas may



slightly reduce and modify local throughput (current patterns and flow) of water over the footprint of each of these measures. However, overall basin current patterns and flows would be similar to that which existed prior to the widespread coastal marsh fragmentation, degradation, and loss we are currently experiencing.

The five shoreline protection measures are designed to reduce wave erosion of shorelines and back marsh areas. In addition shoreline protection measures would include fish dips which would allow water flows to proceed unimpeded by these measures. Shoreline protection measures would also reduce shoreline erosion by moderating the wave erosion caused by wind, tidal, and other current patterns, water circulation and flows. These impacts are considered positive and would provide protection of back marsh lands in an otherwise degrading marsh area. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to current patterns and flows.

(b) Velocity.

Dredging and construction of access corridors, the nine marsh restoration measures and the five shoreline protection measures could significantly reduce localized water velocities in the immediate vicinity of the these measures and to a lesser extent on adjacent marsh and shorelines.

Elevations of the nine marsh restoration measures, about +1.5 feet NAVD 88, would reduce water velocities compared to velocities found in adjacent existing shallow open water and fragmented marsh area. The five shoreline protection measures, by design, would reduce water velocities and protect back marsh areas from wave induced erosion. However, the shoreline protection would be segmented with lower elevated fish dips that would provide access for fish and other aquatic organisms as well as for waters to infiltrate to interior portions of the created marshlands. The positive impacts of the shoreline protection measures is to reduce the waves and velocities from eroding and further degrading shorelines and back marsh areas and are therefore considered positive in an overall degrading coastal marsh system. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts of water velocities.

(c) Stratification.

The Louisiana coastal area is horizontally stratified with sediment and water salinities decreasing gradually from the coast inland (Gosselink 1984). The larger tidal passes at the Gulf of Mexico typically display salinity stratification in these deeper waterways. However, within the numerous shallow waterbodies and marsh areas throughout the Chenier Plain, there is little salinity stratification (Miller and Meselhe 2007). Dredging and disposal, and other construction activities associated with the access corridors, the nine marsh restoration measures and the five shoreline protection measures would not cause stratification of waters or any associated adverse impacts of hypoxia in the vicinity of the project measures. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to stratification.

(d) Hydrologic Regime.

Hydrologic regimes are dependent on climatic, wind, terrain, vegetation, and other hydrologic conditions. Dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures would not significantly alter the existing hydrologic regime.

Construction of the NER RP measures would be localized and would displace existing shallow open water and fragmented marsh areas by restoring and nourishing marsh and providing shoreline protection. NER RP measures would act primarily as a roughness factor on local flows and waves but would otherwise have no significant effects on the hydrologic regime of the area. Acting as a roughness factor, the higher substrate elevations resulting from restoration and nourishment of the nine marsh restoration measures in shallow open water and fragmented marsh areas may slightly reduce throughput of water over the footprint of these measures. By design, the five shoreline protection measures would reduce wave erosion. However, the localized changes to water flows and reduction of erosive wave impacts in a degrading coastal marsh ecosystem are considered positive effects in an otherwise degrading coastal marsh ecosystem. The NER RP would utilize the



best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts.

(3) Normal Water Level Fluctuations.

Dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures would not significantly change normal water level fluctuations in the project area. The higher substrate elevations resulting from restoration of marsh land in shallow open water and fragmented marsh areas may slightly reduce throughput (normal water level fluctuations) of water over the footprint of these measures. However, these impacts are considered positive by restoring marsh in a degrading coastal marsh ecosystem.

By design, the five shoreline protection measures would be constructed to reduce the erosive forces of wave action and flows. However, normal water level fluctuations, such as tidal flows, would remain unimpeded by these measures. Hence, these impacts are considered positive due to the protection of shoreline and back marsh lands in an overall degrading coastal marsh ecosystem. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts normal water fluctuations.

(4) Salinity Gradients.

The Louisiana coastal area is horizontally stratified with water salinities decreasing gradually from the coast inland (Gosselink 1984). Dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures would not significantly affect salinity gradients.

For the nine marsh restoration measures, the higher substrate elevations resulting from restoration of marsh land in shallow open water and fragmented marsh areas may slightly reduce throughput of waters over the footprint of these measures. However, any such impacts would not change salinity gradients. The positive effects of marsh restoration and nourishment would help to offset the degrading, fragmenting and systemic marsh loss throughout the project area.

The five shoreline protection measures, by design, would be constructed to reduce the erosive forces of wave action and flows. However, normal water level fluctuations and salinity gradients would remain unimpeded by these measures. Hence, these impacts are considered positive due to the protection of shoreline and back marsh lands in an overall degrading coastal marsh ecosystem. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to salinity gradients.

(5) Actions That Would Be Taken to Minimize Impacts.

Storm Water Pollution Prevention Plans (SWPPPs) shall be prepared in accordance with good engineering practices emphasizing storm water best available practical techniques and BMPs and complying with Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT). The SWPPP shall identify potential sources of pollution, which may reasonably be expected to affect storm water discharges associated with the construction activity. In addition, the SWPPP shall describe and ensure the implementation of practices which are to be used to reduce pollutants in storm water discharges associated with the construction activity and to assure compliance with the terms and conditions of this permit.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site.

Dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures would result in localized and temporary increases in total suspended particulates and turbidity in the vicinity of the dredge borrow, access corridors, marsh restoration/nourishment and shoreline protection sites. These temporary impacts would be localized and occur primarily due to disturbance of water



bottoms during dredging and construction activities (temporary access corridors, dredging and placement operations for marsh restoration, and placement of rock and geotextile fabric for shoreline protection measures). However, these temporary and localized impacts would be minimized by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. The placement of rock for the shoreline protection measures is expected to result in the disturbance of water bottom, causing a minor, temporary, and localized increase in suspended particulate/turbidity levels. Following dredging and construction activities, suspended particulates and turbidity levels in the vicinity of NER RP measures would return to those which existed prior to construction activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to suspended particulates and turbidity levels.

(2) Effects on Chemical and Physical Properties of the Water Column.

(a) Light penetration.

Water column effects, including light penetration, associated with construction activities would be localized and temporary, occurring only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. These temporary and localized impacts would include reduction of light penetration due to the increased turbidity and total suspended sediments levees associated with dredging and construction operations. However, these temporary and localized effects would be minimized by utilizing the best available practical techniques and BMPs during construction. During marsh restoration and nourishment, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following dredging and construction, turbidity and total suspended sediment levels would rapidly return to those conditions observed prior to construction thereby resulting in light penetration returning to pre-construction conditions. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts of light penetration.

(b) Dissolved oxygen

Water column effects, including lower dissolved oxygen levels, associated with dredging and construction activities would be localized and temporary, occurring only during dredging, construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. Decomposition of organic material within the nine marsh restoration measures following placement of dredged material may result in a temporary and localized reduction of dissolved oxygen.

Placement of rock for the five shoreline protection measures may result in disturbances of water bottom substrate along the footprint and in the immediate area of the measures during construction. Because of organic material contained within the substrate, this disturbance may result in minor, localized, and short-term reductions in dissolved oxygen levels. Once construction is complete, tidal currents are expected to quickly disperse waters affected by these measures, such that no significant impacts to dissolved oxygen levels are anticipated.

These temporary and localized impacts of decreased dissolved oxygen would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration and nourishment, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction dissolved oxygen conditions would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to dissolved oxygen.

(c) Toxic metals and organics.

A Phase I environmental site assessment of the NER RP project area was conducted in accordance with applicable sections of the American Society for Testing and Materials (ASTM) Standard E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process; ASTM Standard E2247-08, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment



Process for Forestland or Rural Property; the U.S. Environmental Protection Agency (USEPA) 40 CFR Part 312 Standards and Practices for All Appropriate Inquiry, Final Rule; and BEM's scope of work dated December 16, 2014 to assess for the presence of Hazardous, Toxic, and Radioactive Wastes (HTRW) within the ASTM E1527-13 recommended approximate minimum search distance of 1 mile from the NER RP restoration measures. The majority of the recognized environmental conditions and areas of environmental concern within the project area are located: 1) adjacent to Highway 82 on the east side of Grand Chenier and from the right descending bank of the Calcasieu Ship Channel east to Highway 27 and in the northern vicinity of Hackberry adjacent to Highway 27; 2) along Freshwater Bayou. However, records indicate that the majority of these sites have been cleaned, remediated, and closed. Based on the Phase I environmental site assessment, the proposed restoration activities within the NER RP project area would likely result in the "capping" of any potentially impacted areas through the placement of overlying materials that may include dredged sand and sediment, rocks, and placement of reinforced structures. This action would potentially minimize future recognized environmental conditions and environmental concerns from existing petroleum or metal-impacted sediment through the placement of the overlying dredged materials.

Water column effects, including toxic metals and organics, associated with dredging and construction activities could be temporary, localized and occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. Decomposition of organic material within the disposal areas following placement of dredged material may result in a temporary and localized release of ammonia. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction, toxic metals and organics conditions would return to those observed prior to construction. Material to be used for marsh restoration and material to be excavated for temporary access corridors for the shoreline protection measures is being obtained from offshore water bottoms and the Calcasieu Ship Channel. Some temporary access corridor dredging may be required in Calcasieu Lake, which would be along existing authorized access channels. Initial evaluation of Environmental Database Reviews for the project area indicate no recognized environmental conditions (e.g., unmitigated oil spills or other activities), in the borrow areas, temporary access corridors, or placement areas that would preclude project implementation. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts of toxic metals and organics.

(d) Pathogens.

Water column effects, including release of pathogens associated with dredging and construction activities could be temporary, localized and occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction, any pathogens released would return to those observed prior to construction. No significant short or long term effects on water column pathogens are anticipated from the dredged/fill material disposal activities. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts of pathogens.

(e) Aesthetics.

Water column effects, including aesthetics, associated with construction activities could be temporary, localized and occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. The primary aesthetic effects would be primarily associated with dredging construction activities resulting in temporary and localized turbid waters and emission of reduced sulfur compounds including hydrogen sulfide, often characterized as an objectionable rotten-egg smell. However, these emissions would likely occur infrequently, at low levels and are not expected to be significant or detectable by any sensitive human occupied areas. There would be no expected odors detectable outside of the dredged borrow sites, temporary access corridors, nine marsh restoration measures and five shoreline



protection measures construction areas. Following completion of construction activities, odors in the vicinity of project measures would return to those which existed prior to construction activities. Any such impacts would be minimized and controlled by utilizing the use of the best available practical techniques and BMPs. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction, aesthetics conditions would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to aesthetics.

(f) Others as Appropriate.

Water column effects, including particulate matter, associated with dredging and construction activities would be significant but temporary and localized in nature and occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction other effect conditions, including particulate matter, would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impact.

(3) Effects on Biota.

(a) Primary production, photosynthesis.

Potential adverse effects on biota, including primary production photosynthesis, could be primarily associated with increased turbidity and total suspended sediments, increased water temperature and lower dissolved oxygen during dredging and construction activities of the access canals, the borrow sites, the nine marsh restoration measures and the five shoreline protection measures. Any such adverse effects would generally be temporary and localized. Increased turbidity and total suspended sediments, increased water temperature and lower dissolved oxygen could result in temporary and localized reduction of photosynthesis due to blocking of sunlight into the waters. However, these temporary and localized effects would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following dredging and construction, turbidity levels, total suspended sediments, water temperatures, and dissolved oxygen levels would return to that observed prior to construction. Consequently, primary production and photosynthesis conditions would return to that observed prior to construction. It is anticipated that primary production and photosynthesis would show localized increases at the nine marsh restoration sites. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to biota.

(b) Suspension/filter feeders.

Potential adverse effects on biota, including suspension and filter feeders, could be primarily associated with increased turbidity and total suspended sediments, increased water temperature and lower dissolved oxygen during dredging and construction activities of the access corridors, the borrow sites, the nine marsh restoration measures and the five shoreline protection measures. Any such effects would generally be temporary and localized. During dredging and construction activities, dredging temporary access corridors, dredging and placement of dredged sediments for the nine marsh restoration measures and placement of geotextile fabric and rock for the five shoreline protection measures would smother sessile and immobile suspension/filter feeders and force more mobile organisms to move from the disposal/construction areas. However, it is expected that benthic suspension/filter feeders would re-colonize the newly deposited dredged material at marsh restoration sites within 1-3 years due to its similarity with the existing substrate in the disposal areas. The conversion of shallow open-water to marsh habitat would prevent some larger aquatic suspension/filter feeders from immediately re-entering the disposal area (marsh restoration/nourishment sites). However, following dredging and construction activities, suspension and filter feeder organisms would gain access to the newly formed marsh and tidal pools and permeable rock shoreline protection during normal water flows and tides.



Marsh is considered to have a higher ecological value than shallow open-water in this coastal ecosystem that is presently experiencing widespread coastal land loss.

Dredging and construction could also have additional effects associated with increases in turbidity levels and suspended sediments. This could clog the gills and feeding mechanisms of sessile suspension/filter-feeding organisms and temporarily displace mobile suspension/filter-feeding organisms. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction, suspension/filter feeders conditions would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to suspension and filter feeders.

(c) Sight feeders.

Adverse effects on biota, including sight feeders, would generally be temporary, localized and occur only during dredging and construction activities of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. These impacts would include temporary and localized increased turbidity and total suspended sediments, increased water temperature and lower dissolved oxygen. The conversion of shallow open-water to marsh and the displacement of shallow open water and fragmented marsh to geotextile and rock shoreline protection would displace sight feeders. However, following settlement and consolidation of dredged sediments into marsh and following construction of shoreline protection measures, smaller organisms would have access to the newly formed marsh during normal and high tidal fluctuations. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction sight feeders conditions would return to those observed prior to construction. Other effects on biota, including sight feeders, associated with construction activities would be temporary, localized and occur only during construction of the nine marsh restoration measures and five shoreline protection measures. This could include temporary and localized increases in turbidity levels and total suspended sediments from placement of dredged material and geotextile fabric and rock, which could impede the foraging success of sight-feeding organisms. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction sight feeders conditions would return to those observed prior to construction. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to sight feeders.

(4) Actions Taken To Minimize Impacts.

For the nine marsh restoration measures, dredged sediments would be placed to achieve a post-construction target elevation suitable for the establishment of marsh vegetation following dewatering. During construction, effluent from dewatering would be discharged into adjacent wetlands via spill box weirs. Earthen containment/exclusion dikes would be constructed from in-situ material located within the marsh restoration/nourishment area using a mechanical (clamshell or bucket) dredge. Temporary access for the mechanical dredge would be via the pipeline corridor. The borrow area used for construction of the earthen containment/exclusion dike would be within the footprint of the marsh restoration site and would be refilled during the placement of dredged sediments for marsh restoration. One (1) foot of freeboard would be maintained at all times during dredge discharge operations. Containment/exclusion dikes would be breached in multiple places at three years following construction, if necessary, to restore fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. Construction of marsh restoration measures would utilize the best available practical techniques and BMPs to avoid and minimize potential adverse impacts to surrounding aquatic and terrestrial environment.



Construction of the five shoreline protection measures would utilize the best available practical techniques and BMPs to avoid and minimize potential adverse impacts to surrounding aquatic and terrestrial environment.

d. Contaminant Determinations.

An evaluation of the Environmental Data Resources report, performed during the Southwest Coastal Louisiana Phase I Environmental Site Assessment, indicates there appear to be no recognized environmental conditions within the study area. Further research is being conducted concerning potential sediment contaminants in the Calcasieu Ship Channel and the GIWW (i.e., the reaches within the Calcasieu restoration area as outlined in the Phase I maps). If contaminant levels are discovered to be significant, the reach in the Calcasieu Ship Channel may be avoided and material obtained from adjacent, less-contaminated reaches.

Water and sediment from 32 stations within the ship channel were collected in December 2006. Samples were analyzed in accordance with the protocols described in *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual (ITM)* (USEPA/USACE, 1998) and *Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities - Testing Manual (UTM)* (USACE, 2003). Only the stations relevant to the Southwest Coastal Louisiana Study are discussion below.

Physical and chemical analyses were performed on sediment from each in-channel station. Dredged Material Management Unit (DMMU) 4 consisted of in-channel stations D4-06-1 through D4-06-5 (approximate channel mile 24 to channel mile 21 and Devil's Elbow). DMMU 5 consisted of in-channel stations D5-06-1 through D5-06-5 (approximate channel mile 21 to channel mile 16); and DMMU 6 consisted of in-channel stations D6-06-1 through D6-06-6 (approximate channel mile 16 to channel mile 5).

Results from chemical analyses of sediment from the three DMMUs within the Calcasieu River and Pass, revealed the presence of 12 metals, nine PAHs, four pesticides, three petroleum hydrocarbons, three PCBs, and ammonia.

Concentrations of most metals detected in river sediments were similar and within the same order of magnitude for the three DMMUs. Metal detected included antimony (0.101 to 0.111 ppb), arsenic (2.26 to 2.70 ppb), barium (68.6 to 116 ppb), beryllium (0.396 to 0.564 ppb), chromium (6.90 to 8.58 ppb), copper (5.00 to 6.90 ppb), hexavalent chromium (0.0957 to 0.152 ppb), lead (7.60 to 8.42 ppb), mercury (0.0335 to 0.0501 ppb), nickel (6.92 to 8.54 ppb), selenium (0.253 to 0.502 ppb), and zinc (24.4 to 26.4 ppb). Antimony and hexavalent chromium were not detected at DMMU 5.

Polycyclic aromatic hydrocarbons (PAHs) were detected in DMMUs 4 and 5, but not in DMMU 6. While PAHs were most prevalent in DMMU 4, the sum of all detected PAHs was relatively low with a total of 158 ppb. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, and phenanthrene were detected at DMMU 4. Fluoranthene was the only PAH analyte detected at DMMU 6 (14.0 ppb).

Pesticides were detected in two DMMUs, and were most prevalent in DMMU 4. Concentration of 4,4'-DDT were detected in DMMUs 4 and 6 (2.08 ppb and 1.85 ppb). Other pesticides were detected in river sediments only: endosulfan II in DMMUs 4 and 6 (2.05 ppb and 2.11 ppb), heptachlor in DMMU 4 (0.574 ppb), and gamma-BHC in DMMU 4 (0.618 ppb).

Diesel range organics (DRO) and ammonia were common to river sediments. DRO ranged from 18,157 to 43,600 ppb and ammonia ranged from 24,714 to 27,000 ppb, and tended to decrease from upper (DMMU 4) to lower reaches (DMMU 6) of the river. Gasoline range organics (GRO) and motor oil range organics (MRO) were detected only in DMMU 4 (172 ppb and 50,500 ppb, respectively) above Calcasieu Lake. PCB 1016 was detected in DMMUs 4 and 6 (2.0 ppb and 0.7 ppb), while PCB 1254 and PCB 1260 only occurred in DMMU 4 (1.2 ppb and 0.9 ppb). A single volatile organic compound (tetrachloroethylene at 1.3 ppb) was detected at DMMU 6.



e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton.

Temporary and localized adverse effects on aquatic ecosystems and organisms, including plankton, would be primarily associated with construction activities and would include increased turbidity and total suspended solids, increased water temperatures and lower dissolved oxygen. These temporary and localized effects would occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. These temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During marsh restoration, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction plankton conditions would return to those observed prior to construction. The restored and protected marsh would provide increased estuarine habitat suitable for recolonization. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to plankton.

(2) Effects on Benthos.

Localized adverse effects on aquatic ecosystems and organisms, including benthos, would primarily be associated with dredging and construction activities and could include smothering and permanent loss of sessile and slower moving benthic organisms during dredging and placement of borrow sediments for marsh restoration as well as during placement of geotextile fabric and rock for shoreline protection. More mobile benthic organisms could move out of the immediate construction areas. Following construction activities, marsh bottoms would be rapidly recolonized by benthic organisms within 1-3 years (Wilber et al. 2008). Rocks for shoreline protection measures would provide substrate and micro habitats suitable for some smaller organisms and benthos. Other impacts would include temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. These temporary and localized impacts can inhibit photosynthesis and affect respiration of benthic organisms by silt deposition on respiratory structures. However, these temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to benthos.

(3) Effects on Nekton.

Localized sessile and slow-moving nekton would be smothered and permanently lost by dredging and placement of borrow sediments during marsh restoration as well as during placement of geotextile fabric and rock for shoreline protection. However, most nekton are mobile and would be displaced from nine marsh restoration measures and five shoreline protection measures. Much of the marsh restoration sites would be temporarily unavailable for nekton or other aquatic organisms during construction and until containment/exclusion dikes degrade naturally or as part of project construction at three years following construction, after which nekton would have access to the newly restored marsh. The open water areas where shoreline protection sites would be constructed would be permanently unavailable for use by nekton. However, gaps in the shoreline protection would allow aquatic organism access to back marsh areas. Construction activities would be temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. These temporary and localized impacts can inhibit predator-prey interactions and affect respiration of nekton by silt deposition on respiratory structures. However these temporary impacts would not likely impact most nekton, which are generally mobile enough to avoid areas during construction. In addition, these temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment.



Sediments in marsh restoration areas would differentially settle following construction into higher and lower lying lands enabling reestablishment of natural water connections for access of aquatic organisms from nearby and adjacent waters. Marsh restoration measures would also provide essential fish habitat for Federally-managed species. Rock placed for shoreline protection would provide a variety of micro-habitats and substrates for various prey species that could be utilized by nekton. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to nekton.

(4) Effects on the Aquatic Food Web.

Effects on the aquatic food web would be temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. Although these temporary and localized impacts can disrupt and inhibit predator-prey interactions, they would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. The aquatic food web would benefit from both short and long term changes to the marsh restoration disposal areas, including additions in energy to basal elements of the food web, habitat preservation, and increased habitat complexity. Nutrients and detritus released during the discharge of dredged sediments into marsh restoration areas would be added to the existing food web. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to the aquatic food web.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges.

Existing Coastal Restoration Projects: Marsh restoration measures 124c and 3c1 would be constructed on portions of projects CS-59 Oyster Bayou Marsh Creation and Terracing (**Figure 5**) and CS-54 Cameron-Creole Watershed Grand Bayou Marsh Creation (**Figure 6**), respectively. The proposed marsh restoration measures would be constructed to avoid the existing coastal restoration projects that they may overlap. This would generally include construction of temporary containment/exclusion dikes to prevent dredged sediments used for construction of proposed NER RP marsh restoration measures from entering existing coastal restoration project sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed.

National Wildlife Refuges: Portions of NER RP measure 124d would be constructed on the Sabine National Wildlife Refuge (NWR) and portions of NER RP measure 3c1 would be constructed on the Cameron Prairie NWR (**Figure 4**). The effect of marsh restoration these refuges would be significantly positive and long term, if not permanent, and primarily associated with restoration and protection of wetlands on these NWRs and adjacent lands. These measures would restore and protect important and essential habitats utilized by terrestrial and aquatic organisms as well as provide essential fish habitat (EFH) utilized by Federally managed fisheries. No other proposed actions would impact any other sanctuaries or refuges in the study area.

State Wildlife Refuges: The implementation of three of the five shoreline protection measures (6b1, 6b2, and 6b3) would have a significant and long-term positive effect on wetlands in the Rockefeller State Wildlife Refuge and Game Preserve (Rockefeller Refuge). The installation of a field of light-weight aggregate core rock breakwaters offshore of the Gulf of Mexico shoreline of the Rockefeller Refuge would decrease the wave energy reaching the shoreline, which would reduce background erosion rates, protecting existing saline wetlands.

Mitigation Projects: **Table 3** indicates the Office of Coastal Management (OCM) permitted mitigation projects that proposed NER RP marsh restoration measures would be constructed upon. However, construction of the NER RP marsh restoration measures would not be initiated until each mitigation project has completed its permit completion/expiration date.



The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to sanctuaries and refuges.

(b) Wetlands.

Implementation of the proposed action would significantly and positively effect and increase the area of estuarine wetlands in the study area and, in turn, provide and protect important, essential and in some instances critical habitats used by various terrestrial and aquatic organisms for shelter, nesting, feeding, roosting, cover, nursery, EFH and other life requirements; as well as increase productivity. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wetlands.

(c) Mud Flats.

Some existing mud flats would be significantly and permanently impacted by marsh restoration and nourishment of nine marsh restoration measures and five shoreline protection measures that would be constructed near Calcasieu Lake. The placement of fill material for marsh restoration and rock for shoreline protection measures would cover any existing mud flats, converting them to other habitats (intertidal marsh and rock, respectively). Since intertidal marsh is degrading throughout the study area, the conversion of shallow open water and some mud flats to marsh and the protection of marsh would be beneficial in the long term. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to mud flats.

(d) Vegetated Shallows.

Some existing vegetated shallows would be significantly and permanently impacted by marsh restoration and nourishment of nine marsh restoration measures and five shoreline protection measures around Calcasieu Lake. Permanent impacts to state water bottoms through the conversion to marsh or the placement of rock include 14,346 acres from the nine marsh restoration measures and 278.4 acres from the five shoreline protection measures. This would result in the vegetation being covered by fill material. Not all of these shallow-water areas are vegetated (range of 0 to 40% coverage). In addition, proposed measures would encourage the growth of submerged aquatic vegetation in open water shallows such as through the reduction in water fetch and wave energy by shoreline protection measures. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to vegetated shallows.

(e) Coral Reefs.

The proposed action would not impact coral reefs.

(f) Riffle and Pool Complexes.

The proposed action would not impact riffle and pool complexes.

(6) Threatened and Endangered Species.

The CEMVN has determined that the proposed action “may affect but will not likely adversely affect” the piping plover or its critical habitat, red knot, Sprague's pipit, West Indian manatee, Gulf sturgeon, loggerhead and Kemp's Ridley sea turtles; would have no effect on the red-cockaded woodpecker, green, leatherback, and hawksbill sea turtles or loggerhead critical habitat and would not adversely impact other species of concern that could potentially be found in the project area. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to threatened and endangered species.

(7) Other Wildlife.

The NER RP measure areas would be temporarily unavailable for use by wildlife during dredging and construction activities. Temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen would occur only during dredging and construction of the access corridors, the nine marsh restoration measures and the five shoreline protection measures. Although



these temporary and localized impacts can disrupt and preclude wildlife from using the access corridors, the nine marsh restoration measures and the five shoreline protection measure areas, these impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. Also during construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. However, these temporary and localized adverse effects would be offset by the proposed action restoration and protection of estuarine marsh habitats which can provide an array of foraging, breeding, and cover habitat for a variety of birds, mammals, reptiles and other wildlife species. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to other wildlife.

(8) Actions to Minimize Impacts.

Dredged sediments would be placed for the nine marsh restoration sites to achieve a post-construction target elevation following dewatering that would be suitable for natural colonization by marsh vegetation. During construction, effluent from dewatering would be discharged into adjacent wetlands via spill box weirs. Temporary earthen containment/exclusion dikes would be constructed from in-situ material located within the marsh restoration/nourishment area using a mechanical (clamshell or bucket) dredge. Temporary access for the mechanical dredge would be via the pipeline corridor. The borrow area used for construction of the earthen containment dike would be refilled during the placement of dredged material. One foot of freeboard would be maintained at all times during dredge discharge operations. Containment/exclusion dikes would be breached in multiple places at three years following construction, if necessary, to restore connectivity and fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts special aquatic sites and to surrounding aquatic and terrestrial environment.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination.

The State of Louisiana, Department of Environmental Quality (LDEQ), mandates a mixing zone no greater than 200 feet from discharge locations in coastal lakes. Any contaminant release resulting from construction activities should diminish to ambient conditions before exiting the mixing zone. The discharge of dredged material at marsh restoration sites and placement of temporary access corridor material as sidecast adjacent to the temporary access corridors are not expected to introduce contaminants in the Southwest Coastal Louisiana Study Area or outside of the mixing zone. An Environmental Database Review conducted as part of the Phase I Environmental Site Assessment did not discover any recognized environmental conditions that would indicate a high potential of introducing contaminants through fill material or rock placement. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to mixing zones.

(2) Determination of Compliance with Applicable Water Quality Standards.

LDEQ mandates a mixing zone no greater than 200 feet from discharge locations in coastal lakes. The discharge of dredged material and stone during construction of marsh restoration, shoreline protection, and temporary access corridor measures are not expected to exceed water quality criteria in the Sabine Pass, Calcasieu Lake, Calcasieu Ship Channel, Freshwater Bayou, Vermilion Bay, Gulf of Mexico, or adjacent bayous more than 200 feet from the discharge sites. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to water quality.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and private water supply.

The proposed action would not impact municipal and private water supply. Large quantities of moderately saline to highly saline groundwater are generally located throughout southern Cameron Parish (with the exception of an area approximately 20 miles east of the town of Cameron) and southwestern Vermilion Parish. All fresh groundwater withdrawals in Cameron and Vermilion Parishes come from the Chicot aquifer system, which mainly underlies the north-central and north-eastern areas of Cameron Parish and most of Vermilion



Parish. Underlying aquifers in the southern portion of the parishes contain saltwater. The base of the Chicot aquifer system's fresh groundwater ranges from about 300 feet below the National Geodetic Vertical Datum of 1929 (NGVD29) in the southeastern part of Cameron Parish to about 800 feet below NGVD29 in the north-central area, and in Vermilion parish ranges from less than 300 feet below NGVD29 in southwestern area to about 1,000 feet below NGVD29 in northeastern Vermilion Parish. No fresh groundwater is present in the southern portion of the parishes (where many of the restoration area measures are located) or along the southeastern coastline (USGS 2014). The Town of Hackberry is the only drinking water source within the NER RP area. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to municipal and private water supplies.

(b) Recreational and commercial fisheries.

There would be temporary and localized reduction of opportunities for recreational and commercial fisheries during construction activities. There can also be increased turbidity and total suspended solids, increased water temperatures and lower dissolved oxygen associated with construction which can restrict recreational and commercial fisheries in the local area. These temporary and localized effects would occur primarily during construction of the nine marsh restoration measures and five shoreline protection measures in the immediate construction area. Following construction, restrictions on recreational fisheries and commercial fisheries activities would be lifted. Implementation of the marsh creation and shoreline protection measures could attract recreational and commercial fishery species due to the addition of marsh EFH and structure to the degrading marsh habitats. The shallow open water areas converted to shoreline protection would no longer be available for recreational or commercial fisheries. However, the restored marsh habitat would support recreational and commercial fisheries species by providing marsh EFH. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to recreational and commercial fisheries.

(c) Water-related recreation.

Water-related recreation would be temporarily unavailable at dredging and construction sites for the corridors, the nine marsh restoration measures and the five shoreline protection measures. Construction of the nine marsh restoration measures and the five shoreline protection measures would permanently restrict water-related recreation from these sites. Following completion of construction, water-related recreation would resume similar to preconstruction levels in surrounding waters, except for the nine marsh restoration sites and the five shoreline protection sites. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to water-related recreation.

(d) Aesthetics.

The proposed action would temporarily and locally affect aesthetics at dredging and construction sites. This effect would primarily be associated with the presence and noise of dredging and construction equipment, emission of reduced sulfur compounds including hydrogen sulfide, often characterized as an objectionable rotten-egg smell. However, these emissions would likely occur infrequently, at low levels and are not expected to be significant or detectable by any sensitive human occupied areas. There would be no expected odors detectable outside of the dredged borrow sites, temporary access corridors, nine marsh restoration measures and five shoreline protection measures construction areas. Following completion of construction activities, odors and turbid waters in the vicinity of project measures would return to those which existed prior to construction activities. Any such impacts would be minimized and controlled by utilizing the use of the best available practical techniques and BMPs. There would be permanent change to the viewscape by placement of shoreline protection rock to an otherwise fragmented and eroding marsh shoreline. However, the aesthetics of the project area would be improved by the marsh restoration and shoreline protection in an area that is otherwise highly fragmented and degrading marsh. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to aesthetics.



(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar preserves.

Two marsh restoration measures would be located partially on U.S. Fish and Wildlife Service (USFWS) properties, and are therefore recommended for construction by the USFWS. NER RP measure 124d Marsh Creation at Mud Lake would be located on the Sabine NWR. NER RP measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR (**Figure 4**). NER RP measure 124d would initially create (159 acres) and nourish (448 acres) a total of 607 acres that would provide over the 50 year period of analysis 168 net acres and 4 AAHUs which would synergistically benefit the Sabine NWR. NER RP Measure 3c1 would initially create (1,347 acres) and nourish (734 acres) a total of 2,081 acres that would provide over the 50 year period of analysis 1,324 net acres and 607 AAHU which would synergistically benefit the Cameron Prairie NWR.

Implementation of three of the five shoreline protection measures (6b1, 6b2, and 6b3) would have a significant and long-term positive effect on wetlands in the Rockefeller State Wildlife Refuge and Game Preserve (Rockefeller Refuge). The installation of a field of light-weight aggregate core rock breakwaters offshore of the Gulf of Mexico shoreline of the Rockefeller Refuge would decrease the wave energy reaching the shoreline, which would reduce background erosion rates, protecting existing saline wetlands. In all cases, the impacts would be positive.

The other NER RP measures would not impact other parks, national historic monuments, national seashores, wilderness areas, research sites, and similar preserves. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

g. Determination of Cumulative Effects on the Aquatic Ecosystem

Cumulative effects are the changes in the aquatic ecosystem that are attributable to the incremental and collective effect of the individual discharges of dredged or fill material resulting from implementing the NER RP measures when added to other past, present and reasonably foreseeable future individual discharges of dredged and fill material regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Dredging and construction effects, such as increased turbidity and total suspended sediments, organic enrichment, chemical leaching, reduced dissolved oxygen, and elevated carbon dioxide levels, that would be temporary and localized. The only significant long term adverse cumulative effect expected from implementing the NER RP measures would be associated with the conversion of existing fragmented marsh and shallow water bottom habitats to transitional estuarine marsh habitat and rocky shoreline protection habitats. However, conversion of fragmented marsh and shallow water bottoms to these transitional estuarine marsh habitat and shoreline protection habitat would provide greater long-term positive benefits when considered within the context of the ongoing extensive land loss throughout coastal Louisiana and the project area which is converting extensive areas of marsh to shallow open water.

Over the 50-year period of analysis, the NER RP would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. The chenier restoration measures, although not part of this 404(b)(1) analysis, would restore a net total of 1,413 net acres with 538 AAHUs. The positive cumulative impacts of implementing the NER RP marsh restoration measures would be the additive, and in some instances the synergistic, effects of restoring and nourishing sites over the 50 year period of analysis with estimated benefits of 7,900 net acres and 2,700 AAHUs. The five NER RP shoreline protection measures would span approximately 251,528 linear feet, and are anticipated to protect/stabilize approximately 6,135 net acres and 1,738 AAHUs. Although not



impacting waters of the United States, the approximately 1,413 net acres from 35 reforestation sites in Cameron and Vermilion Parishes would be reforested over the 50 year period of analysis, resulting in 538 AAHUs.

Additional long term positive cumulative impacts would be related to increased recreational and commercial fishing opportunities provided by marsh restoration measures that would provide important, critical and essential habitats as well as protection of recreational marsh lands from wave erosion effects by the shoreline protection measures. The cumulative impacts of the proposed action would be a positive increasing the visual resources, especially the viewscape, in the form of providing additional acres of marsh wetlands (and chenier ridge) in an area that is otherwise being degraded, fragmented and lost throughout the southwest coastal basin, coastal Louisiana, and the Nation. Restoration of marsh would convert existing view sheds of open water into marsh wetlands interspersed with large bodies of open water and use the basic design elements of form, line, texture, color, and repetition to create an aesthetically pleasing view shed.

The cumulative effects of the NER RP measures would be in addition to, and in many instances synergistic to, the impacts and benefits from marsh acres restored, nourished and protected by other Federal, state, local, and private restoration efforts within or near the Southwest Coastal Louisiana Study Area, the Louisiana state coastal area, and the nation’s coastal areas. Some of these other efforts include the following:

- Existing Coastal Restoration Projects and CWPPRA Projects – There are currently 149 active CWPPRA projects throughout coastal Louisiana. In September 2015, 101 projects were completed, benefiting over 97,401 acres. 21 projects are currently under active construction with 22 additional projects approved and in the engineering and design phase of development (source: <https://lacoast.gov/new/About/FAQs.aspx>; accessed November 23, 2015). Existing coastal restoration projects within the three parish area include: are 8 projects in Calcasieu Parish, 39 projects in Cameron Parish, and 12 projects in Vermilion Parish. **Table 5** lists the existing coastal restoration projects, including CWPPRA projects, within the three parishes and also describes the potential direct and secondary impacts of proposed NER RP measures on existing coastal restoration projects.

Table 5. Potential Direct and Indirect Impacts of NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
Calcasieu Parish Coastal Restoration Projects				
CS-09	Brown Lake Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	37	NER RP measures would have no potential impacts on this deauthorized CWPPRA project.
CS-22	Clear Marais Bank Protection	Shoreline Protection	1,067	No potential impacts by NER RP restoration and protection measures.
CS-24	Perry Ridge Shore Protection	Shoreline Protection	1,203	No potential impacts by NER RP restoration and protection measures.
CS-27	Black Bayou Hydrologic Restoration	Hydrologic Restoration	3,594	No potential impacts by NER RP restoration and protection measures.
CS-30	GIWW - Perry Ridge West Bank Stabilization	Shoreline Protection	83	No potential impacts by NER RP restoration and protection measures.
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.
Cameron Parish CWPPRA Projects				



Table 5. Potential Direct and Indirect Impacts of NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
CS-04a	Cameron-Creole Maintenance	Hydrologic Restoration	2,602	NER RP measure 3c1 could provide some indirect benefits to the CS-04a project, completed in 1997, by reducing the tidal prism in the Cameron-Creole Watershed. This would reduce the velocities through the water control structures by reducing fetch in the open water areas thereby providing some protection from wind-driven wave erosion.
CS-09	Brown Lake Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	37	NER RP measures would have no potential impacts on this deauthorized CWPPRA project.
CS-11b	Sweet Lake/Willow Lake Hydrologic Restoration	Shoreline Protection	247	No potential impacts by NER RP restoration and protection measures.
CS-17	Cameron Creole Plugs	Hydrologic Restoration	865	No potential impacts by NER RP restoration and protection measures.
CS-18	Sabine National Wildlife Refuge Erosion Protection	Shoreline Protection	5,542	No potential impacts by NER RP restoration and protection measures.
CS-19	West Hackberry Vegetative Planting Demonstration	Demonstration, Sediment Trapping, Vegetative Planting	0	No potential impacts by NER RP restoration and protection measures.
CS-20	East Mud Lake Marsh Management	Marsh Management	1,520	NER RP measure 124c could provide secondary benefits to the CS-20 water control structures by reducing open water fetch and tidal prism which would reduce erosion from wind-driven waves and tidal velocities through the water control structures.
CS-21	Highway 384 Hydrologic Restoration	Hydrologic Restoration	150	No potential impacts by NER RP restoration and protection measures.
CS-23	Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully	Marsh Management	953	No potential impacts by NER RP restoration and protection measures.
CS-25	Plowed Terraces Demonstration	Demonstration, Sediment and Nutrient Trapping	0	No potential impacts by NER RP restoration and protection measures.
CS-26	Compost Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures.
CS-27	Black Bayou Hydrologic Restoration	Hydrologic Restoration	3,594	No potential impacts by NER RP restoration and protection measures.
CS-28-1	Sabine Refuge Marsh Creation, Cycle 1	Marsh Creation	214	No potential impacts by NER RP restoration and protection measures.
CS-28-2	Sabine Refuge Marsh Creation, Cycle 2	Marsh Creation	261	No potential impacts by NER RP restoration and protection measures.
CS-28-3	Sabine Refuge Marsh Creation, Cycle 3	Marsh Creation	187	No potential impacts by NER RP restoration and protection measures.
CS-28-4-5	Sabine Refuge Marsh Creation, Cycles 4 and 5	Marsh Creation	331	No potential impacts by NER RP restoration and protection measures.
CS-29	Black Bayou Culverts Hydrologic Restoration	Hydrologic Restoration	540	No potential impacts by NER RP restoration and protection measures.



Table 5. Potential Direct and Indirect Impacts of NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
CS-31	Holly Beach Sand Management	Shoreline Protection	330	NER RP Measure 5a would provide shoreline protection and stabilization that would secondarily benefit this existing CWPPRA project, which was completed in 2003.
CS-32	East Sabine Lake Hydrologic Restoration	Hydrologic Restoration	225	No potential impacts by NER RP restoration and protection measures.
CS-49	Cameron-Creole Freshwater Introduction	Freshwater Diversion	473	This authorized CWPPRA project, is scheduled to begin construction in September 2016. NER RP measure 3c1 would create marsh within and adjacent to the vegetative planting areas at the westernmost reaches of CS-49, which would increase the resiliency and habitat function of the wetlands in the area.
CS-53	Kelso Bayou Marsh Creation	Marsh Creation	274	No potential impacts by NER RP restoration and protection measures.
CS-54	Cameron-Creole Watershed Grand Bayou Marsh Creation	Marsh Creation	476	NER RP measure 3c1 would secondarily impact this CWPPRA project, authorized for construction in January 2015, by creating marsh adjacent to the westernmost reaches of CS-54 and providing some indirect protection from wave-induced erosion.
CS-59	Oyster Bayou Marsh Creation and Terracing	Marsh Creation, Terracing	433	NER RP 124c measure would create marsh adjacent to CS-59, scheduled to be completed in October 2016, which would increase the resiliency and habitat function of the wetlands in the area.
CS-66	Cameron Meadows Marsh Creation and Terracing	Marsh Creation, Terracing	264	No potential impacts by NER RP restoration and protection measures.
CS-78	No Name Bayou Marsh Creation	Marsh Creation	497	No potential impacts by NER RP restoration and protection measures.
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-08	Bio-Engineered Oyster Reef Demonstration	Demonstration	0	NER RP shoreline protection measure 6b1 would provide positive direct effects for the existing LA-08 oyster reef CWPPRA demonstration project by installing a lightweight aggregate core breakwater field thereby protecting LA-08 from high energy Gulf of Mexico wind-driven wave erosion
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.
ME-09	Cameron Prairie National Wildlife Refuge Shoreline Protection	Shoreline Protection	247	No potential impacts by NER RP restoration and protection measures.
ME-11	Humble Canal Hydrologic Restoration	Hydrologic Restoration	378	No potential impacts by NER RP restoration and protection measures.
ME-16	Freshwater Introduction South of Highway 82	Hydrologic Restoration	296	The SWC shoreline protection measures 6b2 and 6b3 would provide direct benefits to the outfall area of the ME-16 hydrologic restoration CWPPRA project, completed in 2006, by reducing Gulf of Mexico shoreline erosion through the installation of lightweight aggregate core breakwater fields.
ME-17	Little Pecan Bayou Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	56	This CWPPRA hydrologic restoration project was deauthorized prior to construction, so would have no potential impacts on or by NER RP restoration and protection measures.
ME-18	Rockefeller Refuge Gulf Shoreline Stabilization	Shoreline Protection	256	The ME-18 project would be constructed from 2016 to 2018, and would consist of a lightweight



Table 5. Potential Direct and Indirect Impacts of NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
				aggregate core breakwater field extending from Joseph Harbor approximately 3 miles west. This would preclude the need to install the lightweight aggregate core breakwater field in this section as part of the 6b1 measure, but the 6b1 measure would construct a lightweight aggregate core breakwater field from the western end of the ME-18 project to a point approximately 8 miles to the west.
ME-19	Grand-White Lakes Landbridge Protection	Shoreline Protection	213	No potential impacts by NER RP restoration and protection measures.
ME-20	South Grand Chenier Marsh Creation	Hydrologic Restoration	414	This CWPPRA project, which is expected to be completed in 2016, would provide indirect protection to SWC marsh restoration measure 47c3 by reducing erosion from the eastern direction in the southern area. The 3c1 measure would restore marsh adjacent to the westernmost reach of the marsh creation cells, which would provide some indirect protection from erosion.
ME-21	Grand Lake Shoreline Protection	Shoreline Protection	45	No potential impacts by NER RP restoration and protection measures.
ME-24	Southwest LA Gulf Shoreline Nourishment and Protection (Transferred)	Shoreline Protection	888	This CWPPRA project has not been authorized for construction. However, the NER RP shoreline protection measure 6b3 would protect ME-24 project from wind-driven wave erosion from the Gulf of Mexico once authorized and constructed.
ME-32	South Grand Chenier Marsh Creation - Baker Tract	Marsh Creation	393	No potential impacts by NER RP restoration and protection measures.
Vermilion Parish Coastal Restoration Projects				
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-06	Shoreline Protection Foundation Improvements Demonstration	Demonstration, Shoreline Stabilization	0	No potential impacts by NER RP restoration and protection measures.
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.
ME-04	Freshwater Bayou Wetland Protection	Hydrologic Restoration, Shoreline Protection	1,593	Although NER RP measure 127c3 is located nearby there would be no potential impacts by NER RP measures on ME-04, which was constructed in 1998.
ME-08	Dewitt-Rollover Vegetative Plantings Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures on this deauthorized project.
ME-12	Southwest Shore White Lake Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures on this deauthorized project.
ME-13	Freshwater Bayou Bank Stabilization	Shoreline Protection	511	No potential impacts by NER RP restoration and protection measures.
ME-14	Pecan Island Terracing	Sediment and Nutrient Trapping	442	No potential impacts by NER RP restoration and protection measures.



Table 5. Potential Direct and Indirect Impacts of NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
ME-22	South White Lake Shoreline Protection	Shoreline Protection	844	No potential impacts by NER RP restoration and protection measures.
ME-23	South Pecan Island Freshwater Introduction (Deauthorized)	Hydrologic Restoration	98	No potential impacts by NER RP restoration and protection measures.
ME-24	Southwest LA Gulf Shoreline Nourishment and Protection (Transferred)	Shoreline Protection	888	NER RP shoreline protection measure 6b3 would provide secondary benefits for the ME-24 CWPPRA project by installing a lightweight aggregate core breakwater field, which would protect it from wind-driven wave erosion from the Gulf of Mexico.
ME-31	Freshwater Bayou Marsh Creation	Marsh Creation	279	No potential impacts of NER RP measure 127c3 because this CWPPRA project has not been authorized for construction.
TV-03	Vermilion River Cutoff Bank Protection	Shoreline Protection	65	No potential impacts by NER RP restoration and protection measures.
TV-09	Boston Canal/Vermilion Bay Bank Protection	Shoreline Protection, Vegetative Planting	378	No potential impacts by NER RP restoration and protection measures.
TV-11b	Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock (Inactive)	Shoreline Stabilization	241	NER RP 16b would construct a foreshore rock dike along a reach proposed by CWPPRA TV-11b, which has not been constructed. If TV-11b is constructed, the NER RP 16b reach of shoreline protection would not be required under TV-11b.
TV-12	Little Vermilion Bay Sediment Trapping	Shoreline Protection, Sediment Trapping	441	No potential impacts by NER RP restoration and protection measures.
TV-13a	Oaks/Avery Canal Hydrologic Restoration, Increment 1	Hydrologic Restoration	160	No potential impacts by NER RP restoration and protection measures.
TV-16	Cheniere Au Tigre Sediment Trapping Demonstration	Demonstration, Sediment and Nutrient Trapping	0	No potential impacts by NER RP restoration and protection measures.
TV-17	Lake Portage Land Bridge	Shoreline Protection	24	No potential impacts by NER RP restoration and protection measures.
TV-18	Four Mile Canal Terracing and Sediment Trapping	Sediment and Nutrient Trapping	167	No potential impacts by NER RP restoration and protection measures.
TV-63	Cole's Bayou Marsh Restoration	Hydrologic Restoration, Marsh Creation	398	No potential impacts by NER RP restoration and protection measures.

- Project CS-59 (Oyster Bayou Marsh Creation and Terracing) would be indirectly impacted by construction of marsh restoration NER RP measure 124c (**Figure 6**). Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation) would be indirectly impacted by construction of marsh restoration NER RP measure 3c1 (**Figure 7**). Project CS-59 is on Priority Project List 20 with Phase 1 funding approval for engineering and design work to restore 609 acres and nourish about 7 acres of brackish marsh. Project CS-54 is on Project Priority List 21 with specific goals to create 510 acres of saline marsh, nourish 90 acres of existing saline marsh; create 17,500 linear feet of terraces; and, reduce wave/wake erosion. When overlap occurs, proposed NER RP measures would be constructed to avoid existing coastal restoration projects. This would generally include construction of temporary containment/exclusion dikes to contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing coastal restoration project sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed.



- NER RP shoreline protection measure 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and CS 33 (Cameron Parish Shoreline) indirectly benefiting these existing projects by providing shoreline protection and stabilization from high energy Gulf wave erosion.
- Inactive project TV-11B could be impacted by NER RP marsh restoration measure 3c1 if constructed.
- The Louisiana Coastal Area (LCA), Ecosystem Restoration Study (2004 USACE) recommends 15 near-term measures aimed at addressing the critical restoration needs. The components recommended for authorization include five critical near-term ecosystem restoration measures, a demonstration program consisting of a series of demonstration projects, a beneficial use of dredged material (BUDMAT) program, and a science and technology program. The five critical near-term ecosystem restoration measures, demonstration projects, and BUDMAT projects are all subject to the approval of feasibility level of detail decision documents by the Secretary of the Army. The January 31, 2005 Chief's Report approved the Near-Term Plan substantially in accordance with the 2004 LCA Study. Title VII of the Water Resources Development Act of 2007 (WRDA 2007) (Public Law 110-114) authorized an ecosystem restoration Program for the Louisiana Coastal Area substantially in accordance with the Near-Term Plan.
 - The Chenier Plain Freshwater Management and Allocation Reassessment Study (Chenier Plain Study), recommended in the 2005 Chief's Report was one of six large-scale restoration concepts that were purported to have the ability to “significantly restore environmental conditions that existed prior to large-scale alteration of the natural ecosystem” upon construction. Guidance provided by the Director of Civil Works on December 19, 2008 states that “the coastal restoration components proposed as part of the LCA Chenier Plain study will be evaluated as part of the Southwest Coastal Louisiana feasibility study”. Although several of these projects have been authorized for construction, there is presently no willing local non-Federal Sponsor. Consequently, the authorized projects without an identified local non-Federal Sponsor are not considered reasonably foreseeable and are therefore not considered part of either the No Action Alternative (future without project conditions [FWOP]) or the future with project conditions. Nevertheless, the LCA Program is mentioned here since there is some potential that a willing local non-Federal Sponsor may be determined and these projects could therefore become part of the cumulative impacts assessment under the FWOP and future with project conditions.
 - The CEMVN and its local non-Federal Sponsor, Plaquemines Parish, recently completed the 44-acre West Bay Marsh Creation Tier 1 project, part of the LCA's Beneficial Use of Dredged Material (BUDMAT) Program.
 - BUDMAT project (Environmental Assessment #535). Plaquemines Parish is also the non-Federal Sponsor for two additional LCA BUDMAT projects: Ridge Restoration at Tiger Pass, and Restoration of Cat Island. These two projects are still in the study phase.
- An ongoing effort by CPRAB is development of the 2012 Louisiana's Comprehensive Master Plan for a Sustainable Coast (source: http://issuu.com/coastalmasterplan/docs/coastal_master_plan-v2?e=3722998/2447530; accessed November 23, 2015). However, the unauthorized and unfunded conceptual projects are not reasonably foreseeable under the FWOP conditions or the future with project conditions. Nevertheless, the Louisiana State Master Plan is mentioned here since there is some potential that these projects would become funded and therefore considered as part of a cumulative impacts assessment under the FWOP and future with project conditions. The 2012 State Master Plan indicates that the CPRAB has, since 2007:
 - Built or improved 159 miles of levees
 - Benefited 19,405 acres of coastal habitat
 - Secured approximately \$17 billion in state and Federal funding for protection and restoration projects



- Identified and used dozens of different Federal, state, local and private funding sources of projects
- Moved over 150 projects into design and construction
- Constructed projects in 20 parishes
- Constructed 32 miles of barrier islands/berms
- The 2012 State Master Plan developed and evaluated a total of 397 projects, with each project having its own timeline and budget, including:
 - 248 restoration projects,
 - 33 structural risk reduction (protection) projects, and
 - 116 conceptual nonstructural flood risk reduction projects
- The 2012 State Master Plan developed a total of 42 projects for the southwest coast, with 36 projects to be constructed in the 1st Implementation Period (2012 -2032) including: 5 bank stabilization, 11 hydrologic restoration, 8 marsh creation, 4 ridge restoration, 6 shoreline protection, and 1 each structural protection and multiple protection measure; a total of 6 projects would be constructed in the 2nd Implementation Period (2032-2051) including: 2 each marsh creation and shoreline protection, and 1 each ridge restoration and multiple protection measures.
- However, the Tulane Institute on Water Resources Law & Policy 2014 Issue Paper “Turning Coastal Restoration and Protection Plans Into Realities: The Cost of Comprehensive Coastal Restoration and Protection” indicates that the 2012 State Master Plan has not come to terms with the true costs of saving coastal Louisiana and how to finance it:

...the cost of implementing those measures will exceed the \$50 billion figure set forth in the Plan, in all likelihood by a factor of at least two. When one includes the anticipated costs of the Urban Water Plan, federal flood protection, and other factors excluded from the 2012 Master Plan, the cost of restoring this coast and protecting its people can be expected to exceed \$100 billion over 50 years.³⁰ The reasons for this lie primarily in the 2012 Master Plan’s use of 2010 dollars instead of inflation adjusted dollars and the exclusion of a range of projects and programs from the Plan’s cost estimates. The use of present value dollars in the 2012 Master Plan and the Urban Water Plan was neither hidden nor inappropriate as a methodology, and no criticism of that methodology is intended. However, when looking forward to the challenge of financing everything that is planned and necessary, a more comprehensive approach must be used. The value of keeping this coast ecologically and economically in business has been repeatedly demonstrated to be immense and well in excess of the adjusted price of the 2012 Master Plan. The price of putting the pieces of coastal Louisiana and the Gulf Coast back together after Hurricanes Katrina and Rita alone approached \$100 billion. Knowing what is at stake and coming to terms with the true costs of saving coastal Louisiana are prerequisites for a robust civic conversation about how best to finance it. It will require engagement at the local, state, and national levels from a broad range of public and private stakeholders, and answers will not come easily.
- Restoration of injuries to natural resources damaged by the 2010 Deepwater Horizon oil spill:
 - The Natural Resource Damage Assessment (NRDA) is a legal process under the Oil Pollution Act of 1990 (OPA) and the Louisiana Oil Spill Prevention and Response Act of 1991 (LOSPRA) whereby designated trustees represent the public to ensure that natural resources injured in an oil spill are restored (source: <http://la-dwh.com/AboutNRDA.aspx>; accessed November 25, 2015). Both federal and state NRDA regulations provide a step-by-step process for trustees to determine injuries, to assess damages, and to develop and implement restoration projects that compensate the public for injuries to natural resources impacted by an incident. In general, the NRDA process involves three steps: (1) pre-assessment; (2) restoration planning; and (3) restoration implementation.
 - On July 11, 2011, Governor Bobby Jindal unveiled the “Louisiana Plan” which outlines 13 initial proposed early restoration projects (source: <http://la-dwh.com/LouisianaPlanProjects.aspx>; accessed November 25, 2015). The proposed projects



come in many forms including marsh restoration, barrier island restoration, shoreline projection measures, resource-specific projects, and projects aimed at addressing impacts to our citizens' ability to use Louisiana's natural resources. The projects are consistent with Louisiana's Coastal Master Plan; they are consistent with the criteria outlined in the early restoration framework agreement and applicable regulations; and they support the goal of compensating the public for natural resource injuries resulting from the Deepwater Horizon Oil Spill (**Table 6**).

Table 6. "Louisiana Plan" proposed early restoration projects

Project Name	Approximate Cost (\$)
Oyster Reestablishment Program (Louisiana Oyster Cultch Project)	\$15 M
Saltwater Hatchery	\$48 M
Shell Island - Larger Lobe	\$110 M
Chandeleur Islands Restoration	\$65 M
Biloxi Marsh Shoreline Protection Phase 2	\$45 M
Lake Hermitage Additional Increment - (Lake Hermitage Marsh Creation – NRDA Early Restoration Project)	\$13.9 M
Grand Liard Marsh & Ridge Restoration	\$31.3 M
Cheniere Ronquille Barrier Island Restoration	\$44 M
Bay Side Segmented Breakwater at Grand Isle	\$3.3 M
West Grand Terre Beach	\$9 M
West Grand Terre Stabilization	\$3 M
Barataria Basin Barrier Shoreline Restoration - Caminada Headland	\$75 M
Maintain Land bridge between Caillou Lake and Gulf of Mexico	\$71 M

- On October 5, 2015, the Deepwater Horizon Natural Resource Damage Assessment Trustees released the Deepwater Horizon Oil Spill Draft Programmatic Damage Assessment and Restoration Plan and Programmatic Environmental Impact Statement (PDARP/PEIS) for public review and comment (source: http://la-dwh.com/PDARP_PEIS/Draft_PDARP_PEIS.aspx; accessed November 25, 2015). The Trustees identified Alternative A as their preferred alternative. Alternative A (described in Section 5.5) is an integrated restoration portfolio that emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration in combination with resource-specific restoration in the ecologically interconnected northern Gulf of Mexico ecosystem. **Table 7** is a copy of Table 5.10-1 from the PDARP/PEIS, and shows the Trustees' allocations by goal and restoration type (rows) and restoration area (columns). This table also highlights where investments have already been made through the Trustees' Early Restoration efforts (source: http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/Chapter-5_Restoring-Natural-Resources1.pdf; accessed November 25, 2015). Under the PDARP/PEIS, the State of Louisiana would receive \$5 billion of the total \$8.1 billion restoration funding allocation for the Early Restoration work. Due to the large proportion of the wetlands and coastal and nearshore habitat funding allocated to Louisiana, wetland projects identified in the Louisiana Master Plan were used to evaluate the potential magnitude of benefits achievable here. However, as described in Section 5.5.2 of the PDARP/PEIS, the restoration dollars could be used for a variety of restoration approaches. For illustration purposes only, the approximately \$4 billion allocated to Louisiana for this restoration type could be sufficient to create 20,000 to 40,000 acres of coastal marsh in Louisiana (LA Master Plan) along hundreds of miles of shoreline, supporting the diversity of fish, birds, and animals that depend on coastal marsh.



- The EPA, reporting on the Nation, states the number of restoration projects grows yearly. Current Federal initiatives call for a wide range of restoration actions, including improving or restoring 25,000 miles of stream corridor; achieving a net increase of 100,000 acres of wetlands each year and establishing two million miles of conservation buffers (source: <http://water.epa.gov/type/wetlands/restore/principles.cfm>; accessed March 12, 2015).

Table 7. Settlement of NRD claims and final allocations (source: http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/Chapter-5_Restoring-Natural-Resources1.pdf; accessed November 25, 2015).

Major Restoration Categories	Unknown Conditions	Regionwide	Open Ocean	Alabama	Florida	Louisiana	Mississippi	Texas	Total Restoration Funding*
1. Restore and Conserve Habitat									
Wetlands, Coastal, and Nearshore Habitats				65,000,000	5,000,000	4,009,062,700	55,500,000	100,000,000	4,234,562,700
Habitat Projects on Federally Managed Lands				3,000,000	17,500,000	50,000,000	5,000,000		75,500,000
Early Restoration (through Phase IV)				28,110,000	15,629,367	259,625,700	80,000,000		383,365,067
2. Restore Water Quality									
Nutrient Reduction (Nonpoint Source)				5,000,000	35,000,000	20,000,000	27,500,000	22,500,000	110,000,000
Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation, etc.)					300,000,000				300,000,000
3. Replenish and Protect Living Coastal and Marine Resources									
Fish and Water Column Invertebrates			380,000,000						380,000,000
Early Restoration Fish and Water Column Invertebrates			20,000,000						20,000,000
Sturgeon			15,000,000						15,000,000
Sea Turtles	60,000,000	55,000,000	5,500,000	20,000,000	10,000,000	5,000,000	7,500,000	163,000,000	
Early Restoration Turtles	29,256,165						19,965,000	49,221,165	
Submerged Aquatic Vegetation						22,000,000			22,000,000
Marine Mammals	19,000,000	55,000,000	5,000,000	5,000,000	50,000,000	10,000,000		144,000,000	
Birds	70,400,000	70,000,000	30,000,000	40,000,000	148,500,000	25,000,000	20,000,000	403,900,000	
Early Restoration Birds	1,823,100		145,000	2,835,000	71,937,300		20,603,770	97,344,170	
Mesophotic and Deep Benthic Communities			273,300,000						273,300,000
Oysters	64,372,413			10,000,000	20,000,000	26,000,000	20,000,000	22,500,000	162,872,413
Early Restoration Oysters				3,329,000	5,370,596	14,874,300	13,600,000		37,173,896
4. Provide and Enhance Recreational Opportunities									
Provide and Enhance Recreational Opportunities				25,000,000	63,274,513	38,000,000	5,000,000		131,274,513
Early Restoration Recreational Opportunities			22,397,916	85,505,305	120,543,167	22,000,000	18,957,000	18,582,688	287,986,076
5. Monitoring, Adaptive Management, Administrative Oversight									
Monitoring and Adaptive Management	65,000,000		200,000,000	10,000,000	10,000,000	225,000,000	7,500,000	2,500,000	520,000,000
Administrative Oversight and Comprehensive Planning		40,000,000	150,000,000	20,000,000	20,000,000	33,000,000	22,500,000	4,000,000	289,500,000
Adaptive Management NRD Payment for Unknown Conditions	700,000,000								700,000,000
Total NRD Funding	\$700,000,000	\$349,851,678	\$1,240,697,916	\$295,589,305	\$680,152,643	\$5,000,000,000	\$295,557,000	\$238,151,458	

*The total restoration funding allocation for the Early Restoration work; each restoration type; and monitoring, adaptive management, and administrative oversight is \$8.1 billion (plus up to an additional \$700 million for adaptive management and unknown conditions).

- The NOAA Restoration Center has restored 2,812 projects nationwide and its programs provide funding and technical assistance for coastal habitat restoration projects throughout the United States and territories. In Louisiana, the Restoration Center is planning, implementing or has restored 100 projects including CWPPRA and community-based restoration projects (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015). In Southwest Coastal Louisiana, the NOAA Restoration Center has 20 restoration projects (**Table 8**):

Table 8. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
Black Bayou Hydrologic Restoration Project	CWPPRA	LDNR	completed	*2960 acres tidal wetland habitat restored *634 acres tidal wetland habitat protected



Table 8. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
Cameron Meadows Marsh Creation and Terracing	CWPPRA	CPRA	implementation	tidal wetland
Cameron Shoreline Vegetation Planting Phase II	Community-based	Cameron Parish, Cheniere Energy, Gulf Coast Soil & Water Conservation Service, State Farm Insurance Co., Lonnie G. Harper and Associates, LLC, Coalition to Restore Coastal Louisiana, America's Wetlands, Restore America's Estuaries, Disney, LDNR, 143 volunteers contributed 920 hours to this project.	completed	6.5 acres of dune habitat restored by installing a sand fence and shoreline planting
Peveto Beach Sand Fencing	Community-based	Imperial Calcasieu Resource Conservation and Development Council, Inc., 48 volunteers contributed 238 hours to this project.	completed	10 acres of dune habitat restored
Peveto Sand Fencing and Vegetation Project 2	Community-based	Gulf of Mexico Foundation, Imperial Calcasieu Resource Conservation and Development Council, Inc., 12 volunteers contributed 372 hours to this project.	completed	1.72 acres of dune habitat restored
Oyster Bayou Marsh Creation	CWPPRA	Office of Coastal Protection and Restoration (LA OCPR), CPRA	implementation	tidal wetland
Bayou Verdine CERCLA –Sabine 1999 Unit Hydrologic Restoration and Marsh Creation	DARRP	Contributed to this project	completed	Create 14.7 acres of marsh in open water areas. Additionally, a 260-acre area of marsh and shallow mud flats will be restored to tidal hydrology
Cameron-Creole Watershed Mottled Duck Research and Terracing Project	Community-based	National Fish and Wildlife Foundation, Ducks Unlimited, Miami Corporation, Black Lake Land and Oil, LLC, British Petroleum (BP) America, Louisiana Department of Natural Resources	completed	Ducks Unlimited is working to construct 70,000 linear feet of earthen terraces benefiting 900 acres of fisheries habitat located in the Cameron-Creole Watershed in southwest Louisiana. 530 acres of tidal wetland habitat restored and



Table 8. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
				100 acres of tidal wetland habitat restored
Bio-Engineered Oyster Reef Demonstration	CWPPRA	CPRA, LDNR	implementation	The demonstration project consisted of an Oysterbreak, approximately 1000 feet long to provide oyster reef/shell bottom
Rockefeller Refuge Gulf Shoreline Stabilization Project	CWPPRA	LDNR	implementation	the construction of a continuous rock breakwater extending approximately 50,691 feet from the west bank of Joseph Harbor to the east bank of Beach Prong to protect tidal wetlands
Pecan Island Terrace Creation Project	CWPPRA	LDNR	completed	constructed 198,400 linear feet of adjacent terrace cells; 425 acres of soft bottom mud/sand habitat restored 145 acres of tidal wetland habitat restored
Christian Marsh Terracing Project	Community-based	Coalition to Restore Coastal Louisiana, Randy Moertle and Associates, CPRA, McIlhenney Corporation, Restore America's Estuaries, Louisiana State University, Vermilion Corporation, Cargill, Incorporated, COYPU Foundation, Vermilion Soil and Water Conservation District, National Audubon Society, 87 volunteers contributed 696 hours to this project	Completed	Created over 25,000 linear feet of terraces, enhancing and protecting an additional 300 acres of adjacent marsh.
Louisiana Acadiana Bay Oyster Reef Construction and Gulf-wide Oyster Planning	Community-based	State of Louisiana, Louisiana State University Agriculture Extension Service, National Fish and Wildlife Foundation, The Nature Conservancy	Completed	installed ~670 linear feet of bioengineered oyster reef along the coastal shoreline of the Paul J. Rainey Wildlife Sanctuary in Vermilion Bay in southwest Louisiana; 0.15 acres of oyster/shell bottom habitat restored
Vermilion Bay Oyster Reef Restoration and Shoreline Protection	Community-based	LDWF, Louisiana Wetlands Association, 30 volunteers contributed 200 hours	Completed	This project implemented the first large-scale shell recycling program in Louisiana. A 600-foot oyster reef was constructed, which protected the adjacent shoreline, renewed oyster productivity



Table 8. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
				in the bay, and benefited marine habitat.
Coles Bayou Marsh Restoration	CWPPRA	Office of Coastal Protection and Restoration (LA OCPD), Louisiana Coastal Protection and Restoration Authority	Planning	Objective of this project is to create and nourish brackish marsh and improve hydrology in order to increase freshwater and sediment inflow into the interior wetlands, the latter through culvert installation.
Little Vermilion Bay Sediment Trapping Project	CWPPRA	LDNR	Completed	390 acres of tidal wetland habitat restored 51 acres of tidal wetland habitat protected
McIlhenney Planting Program- Little White Lake	Community-based	Louisiana State Agricultural Center, McIlhenney Corporation, Randy Moertle and Associates, Boy Scouts of America, Coalition to Restore Coastal Louisiana, 91 volunteers contributed 910 hours to this project.	Completed	5 acres of tidal wetland habitat restored
Four Mile Canal Terracing and Sediment Trapping	CWPPRA	LDNR	Completed	214 acres of tidal wetland habitat restored 113 acres of tidal wetland habitat protected
Rainey Wildlife Sanctuary Terrace Project	Community-based	LDNR, Coalition to Restore Coastal Louisiana, 20 volunteers contributed 400 hours to this project	Completed	640 acres of tidal wetland habitat restored
M/V Formosa Six	DARRP	LDNR, LDWF, National Fish and Wildlife Foundation, LDEQ, NRCS	Completed	142 acres of tidal wetland habitat restored

- Some other large scale ecosystem restoration projects affecting coastal waters of the United States include the following:
 - The CALFED Environmental Restoration Program, approved by the California state legislature in fall 2000, has been successfully acquiring and protecting important lands in the Delta and along its tributaries. To date, more than 130,000 acres of habitat targeted for species of import to the Delta have been enhanced, protected and restored, mostly through easements obtained by working with local land owners and communities (source: http://calwater.ca.gov/calfed/objectives/ecosystem_restoration.html#EcoHistory; accessed December 2, 2015).
 - The Chesapeake Bay Program is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. The Chesapeake Bay Program partners include



- the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the Environmental Protection Agency, representing the federal government; and participating citizen advisory groups (source: <http://www.chesapeakebay.net/about>; accessed December 2, 2015)
- The Comprehensive Everglades Restoration Program (CERP), provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. It covers 16 counties over an 18,000-square-mile area and centers on an update of the Central & Southern Florida (C&SF) Project also known as the Restudy (source: http://141.232.10.32/about/about_cerp_brief.aspx; accessed December 2, 2015).
 - The Mississippi Coastal Improvements Program Comprehensive Plan (MsCIP) is a system wide approach linking structural and nonstructural hurricane and storm damage risk reduction with ecosystem restoration with the goal of providing a coastal community more resilient to hurricanes and storms (source: http://www.sam.usace.army.mil/Portals/46/docs/program_management/mscip/docs/MS_CIP%20Chief%20Report.pdf; accessed December 2, 2015).
 - The Coastal Texas Protection and Restoration Project a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State of Texas (source: <http://www.swg.usace.army.mil/Portals/26/docs/PAO/0827%20Hou-Galv%20Coastal%20TX%20Public%20mtg%20August%2027%202014.pdf>; accessed December 2, 2015).
 - The Cameron Parish Master Plan for Coastal Restoration & Protection identifies a total of 253 priority projects including: 150 hydrologic restoration, 17 beneficial use/marsh creation, 2 oyster reef preservation projects, 9 shoreline/embankment maintenance projects, and 75 canal maintenance projects. The intent is to have the parish projects looked at in a holistic way to be considered for the 2017 State Master Plan. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Cameron Parish.
 - Calcasieu Parish's priority project is the Rabbit Island Project and then the entire Cameron Parish Project list at this time. Calcasieu Parish believes that protecting Cameron Parish will protect Calcasieu Parish. Calcasieu Parish anticipates updating their coastal plan which will include a priority projects list. Those projects will be viable projects for consideration of funding for protecting Lake Charles to the 500 year level of protection as deemed necessary by the Coastal Master Plan for Louisiana 2012. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Cameron Parish.
 - The Vermilion Parish Coastal Priority Project list identifies a total of 42 priority projects including: 10 hurricane protection projects, 17 shoreline protection and bank stabilization projects, 6 marsh creation projects, 7 hydrologic restoration projects, and 2 ridge restoration projects. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Vermilion Parish.
 - Other Gulf shore protection and restoration projects have been constructed along the Gulf shoreline through other funding sources. Segmented breakwaters have been constructed under at least two separate projects to the west of the proposed Holly Beach Shoreline Stabilization (5a) measure. The proposed breakwater would provide shoreline protection from the eastern end of the existing breakwaters eastward to the Calcasieu Pass jetty and compliment that existing project. The shoreline where the proposed Holly Beach measure would be built has been nourished with material dredged from the bottom of the Gulf of Mexico to help ensure that shoreline erosion did not compromise Louisiana Highways 27/82. Rock and riprap have also been placed at critical locations where shoreline erosion has threatened the highway. The proposed Holly Beach measure is compatible with and would augment these prior efforts. There have been proposals to construct shore protection measures along



the Gulf where the proposed Gulf shoreline restoration [Calcasieu River to Freshwater Bayou (6b1, 6b2, and 6b3)] measures are located, but no projects have been built.

The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse cumulative impacts to aquatic and terrestrial organisms and their habitats.

h. Determination of Secondary Effects on the Aquatic Ecosystem

Secondary or indirect effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. The NER RP 35 chenier reforestation measures would have no secondary effects on the aquatic ecosystem. In addition to secondary effects described above, there would be long-term losses of shallow open water habitats in the Southwest Coastal Louisiana project area due to construction of NER RP marsh restoration and shoreline protection measures. However, there is an abundance of shallow open water habitat throughout the Southwest Coastal Louisiana project area for use by aquatic organisms and other users. **Table 5** summarizes the direct and secondary (indirect) effects of NER RP measures on existing coastal restoration projects in Calcasieu, Cameron and Vermilion Parishes.

NER RP Measures 124d and 3c1 would be partially located on USFWS properties and are therefore recommended for construction by the USFWS.

Projects CS-59 would be potentially indirectly impacted by construction of marsh restoration NER RP measure 124c. Project CS-054 would be potentially indirectly impacted by construction of marsh restoration NER RP measure 3c1. The NER RP measures would be constructed immediately adjacent and surrounding the existing coastal restoration projects. However, when overlap occurs, proposed NER RP measures would be constructed to avoid existing coastal restoration projects by construction of temporary containment/exclusion dikes to contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing coastal restoration project sites. Inactive project TV-11B could be impacted by NER RP marsh restoration measure if reactivated.

In addition, existing mitigation projects are also located within areas proposed for restoration under the NER RP. **Figure 8** and **Table 4** contains information about mitigation projects that occur within the NER RP project area. In most instances, these mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. When overlap occurs, proposed NER RP measures would not be constructed until the mitigation projects satisfy their permitted obligations.

The nourishment, restoration and protection of degraded marsh and shallow open water to transitional estuarine coastal marsh habitats would indirectly benefit plankton, benthic, nekton and wildlife resources by providing increased dissolved organic compounds and detritus that would, in turn, provide food and energy resources for benthic organisms and the aquatic food web. This would eventually increase local epifauna which, in turn, would help reduce turbidity, regenerate ammonia and phosphorous, and serve as important sources of food for birds, nekton, and people. An increase in the export of dissolved organic compounds and detritus from the restored, nourished and protected marsh habitats would benefit local plankton populations by increasing the planktonic food web. Some local plankton populations would be displaced to other shallow open water areas, of which there are an increasing abundance due to the extensive coastal land loss. Also as described above, the NER RP would provide and protect important, essential and in some instances critical habitats used by various terrestrial and aquatic organisms for shelter, nesting, feeding, roosting, cover, nursery, EFH and other life requirements would likely lead to localized increase in productivity. Furthermore, implementing the NER RP measures would further complement, sustain and protect existing coastal restoration projects, mitigation and USFWS properties. There could also be localized increases in recreational and commercial fisheries due to the increased areal extent of transitional estuarine EFH. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse secondary impacts to aquatic and terrestrial organisms and their habitats.



III. Findings of Compliance or Non-compliance with the Restrictions on Discharge

a. Adaptation of the Section 404(b)(1) Guidelines to this Evaluation

No significant adaptations of the guidelines were made relative to this evaluation.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impacts on the Aquatic Ecosystem

The discharge represents the least environmentally damaging practicable alternative. The proposed action consists of measures to minimize the adverse effects of coastal marsh and shoreline land loss. This would include the discharge for hydraulic placement of borrow sediments for marsh restoration measures and the placement of geotextile fabric and rock for shoreline stabilization and protection.

c. Compliance with Applicable State Water Quality Standards

The material released during dredging and disposal operations are not expected to exceed Louisiana Water Quality Standards.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act

The proposed action does not appear to violate effluent standards prohibited under Section 307 of the Clean Water Act.

e. Compliance with the Endangered Species Act of 1973

The proposed action is compliant with the Endangered Species Act of 1973, as amended. The proposed action would not significantly affect endangered or threatened species or their critical habitats.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

The proposed action is compliant with specified protection measures for marine sanctuaries designated by the Marine Protection, Research, and Sanctuaries Act of 1972. All marsh restoration disposal sites and effects are located in inland waters. Some of the shoreline protection measures would be located in the Gulf of Mexico near shore area to protect barrier shorelines. However, no effects would occur to marine sanctuaries in the Gulf of Mexico.

g. Evaluation of Extent of Degradation of the Waters of the United States

(1) Significant Adverse Effects on Human Health and Welfare

(a) Municipal and Private Water Supplies.

The proposed action would not cause or contribute to significant degradation of waters of the United States including adverse effects on municipal and private water supplies. Rather, the proposed action would protect and restore marsh wetland which would improve water quality filtering water and trapping sediments and retaining excess nutrients and other pollutants such as heavy metals. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to municipal and private water supplies.

(b) Recreational and Commercial Fisheries.

Dredging and discharge of sediments for marsh restoration and placement of geotextile and rock for shoreline protection would result in a loss of benthic prey items and availability of open water habitat. Temporary and localized increases in turbidity, total suspended sediments, and water temperatures and decreases in dissolved oxygen would return to pre-construction conditions following completion of construction. Following construction, temporary containment/exclusion dikes would naturally degrade or would be degraded at three years following construction, if necessary, to re-establish connectivity with surrounding waters thereby providing access for recreational and commercial fish species. Both recreational and commercial fishery catch



would likely return to pre-construction conditions or show improvements due to the restoration and protection of marsh. Shoreline protection measures would provide protection to marsh from erosive tidal and wind driven waves thereby protecting restored and other valuable intertidal estuarine marsh habitats utilized by many aquatic species for shelter, nesting, feeding, cover, nursery, and other life requirements. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to recreational and commercial fisheries.

(c) Plankton.

Effects on plankton would be temporary, localized and expected to occur primarily during construction of the nine marsh restoration measures and five shoreline protection measures. Adverse effects would be primarily related to increased turbidity and total suspended sediments, increased water temperatures and decreased dissolved oxygen. Following construction these temporary effects would diminish and conditions would return to those observed prior to construction. Bacterioplankton would resume consuming organic materials, which would increase in availability due to restored and protected marshes. Zooplankton, or animal plankton would continue to feed on other plankton and other organisms. The protected and restored marsh areas would be expected to increase the local ecosystem health. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to plankton.

(d) Fish.

Effects on fish during construction of the nine marsh restoration measures and five shoreline protection measures would result in the temporary displacement of fish during dredging and placement and other construction activities due to increased turbidity and total suspended sediments, localized increase in water temperatures and decrease dissolved oxygen. Following construction, these temporary conditions would diminish and the area would return to conditions similar to those observed prior to construction. Following construction, temporary containment/exclusion dikes would naturally degrade or would be degraded at three years following construction, if necessary, to re-establish connectivity with surrounding waters thereby providing access for fish. The proposed action is expected to restore and protect marsh EFH and areas of intertidal emergent vegetation, which provide an array of foraging, breeding, spawning, and cover habitat for a variety of adult and juvenile fishes. The protected and restored marsh areas would be expected to increase local ecosystem health. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to fish.

(e) Shellfish.

Shrimp and crab are the primary shellfish inhabiting the Study Area. Effects of the nine marsh restoration measures and five shoreline protection measures on sessile shellfish species would be similar to those described above for benthic organisms. Effects on more mobile shellfish (e.g. shrimp and crabs) would be similar to those described above for fish. Following construction, temporary containment/exclusion dikes would naturally degrade or would be degraded at three years following construction to re-establish connectivity with surrounding waters thereby providing access for shellfish. The proposed action is expected to restore and preserve marsh that provide an array of foraging, breeding, and cover habitat for a variety of shellfish. The protected and restored marsh areas would be expected to increase local ecosystem health. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to shellfish.

(f) Wildlife.

The nine marsh restoration measures and five shoreline protection measures would, as described above, restore and protect valuable intertidal estuarine marsh and shoreline habitats utilized by an array of birds, mammals and reptiles for shelter, nesting, feeding, roosting, cover, nursery, and other life requirements. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wildlife.

(g) Special Aquatic Sites.



Some existing special aquatic sites would be significantly and permanently positively affected, as described above, by marsh restoration and nourishment of nine marsh restoration measures and five shoreline protection measures. These include: sanctuaries and refuges, including existing coastal restoration projects CS-54 and CS-59, portions of Sabine NWR and Cameron Prairie NWR, existing mitigation projects (**Table 4**), wetlands, mud flats, and vegetated shallows, threatened and endangered species, and other wildlife. The proposed action would have no effects or impacts on coral reefs or riffle and pool complexes. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to special aquatic sites.

(2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems.

The proposed action would not cause or contribute to significant degradation of waters of the United States including adverse effects on life stages of organisms dependent on the aquatic ecosystems. The proposed action is expected to restore and preserve marsh and areas of inter-tidal emergent vegetation, which provide an array of foraging, breeding, spawning, and cover habitat for a variety of adult and juvenile fishes, birds, mammals, and reptiles. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems.

(3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability.

The proposed action would not cause or contribute to significant degradation of waters of the United States including adverse effects on ecosystem diversity, productivity and stability. The proposed action would restore and protect marsh and areas of inter-tidal emergent vegetation, thereby restoring and protecting diversity, productivity, and stability of the Southwest Coastal Louisiana Study Area. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts on aquatic ecosystem diversity, productivity and stability.

(4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Resources.

The proposed action would not cause or contribute to significant degradation of waters of the United States including adverse effects on recreational, aesthetic, and economic resources. The proposed action would restore and preserve marsh and areas of inter-tidal emergent vegetation, thereby providing and protecting marsh wetland areas that contribute to recreational, aesthetic, and economic benefits. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts on recreational, aesthetic, and economic resources.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharges on the aquatic ecosystem. Substrate at the shallow open-water disposal sites are similar to dredged material that would be discharged during marsh restoration. Dredged material discharged at marsh restoration sites would be confined by earthen retention dikes, existing marsh or other natural measures, and the existing shorelines and the five shoreline protection measures to reduce migration of fill into the Gulf of Mexico and other adjacent waterways. Dredged material would be discharged at the nine marsh restoration sites to elevations conducive to marsh development. Construction activities at the dredge borrow areas, the nine marsh restoration sites and the five shoreline protection sites would be conducted using the best available practical techniques and BMPs to minimize potential adverse impacts of discharges on the aquatic ecosystem.

i. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged Material (specify which) is or are (select one)

- (1) Specified as complying with the requirements of these guidelines; or,

NA



- (2) Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,
On the basis of the guidelines, the proposed disposal sites for the discharge of dredged material comply with the requirement of these guidelines, with the inclusion of appropriate and practicable conditions to minimize pollution or adverse effects on the aquatic ecosystem.
- (3) Specified as failing to comply with the requirements of these guidelines.

NA

IV. Evaluation Responsibility

- a. Water Quality Input Prepared by: William P. Klein, Jr., Biologist
- b. Project Description and Biological Input Prepared by: William P. Klein, Jr., Biologist

Date

Joan Exnicios
Chief, Environmental Planning

References

1. Environmental Regulatory Code, Part IX. Water Quality Regulation, Louisiana Department of Environmental Quality, September 2014.
2. State of Louisiana Water Quality Management Plan, 2012 Water Quality Inventory: Integrated Report, Louisiana Department of Environmental Quality, Office of Water Resources, 2012.
3. http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm
4. <http://www.geoplatform.gov/gulfresponse/>
5. <http://www.nrc.uscg.mil/>
6. USACE, Final Dredged Material Management Plan and Supplemental Environmental Impact Statement: Calcasieu River and Pass, Louisiana, Volume I, 22 November 2010.
7. USGS, Water Resources of Cameron Parish, Louisiana, Louisiana Department of Transportation and Development, March 2014.
8. USGS, Water Resources of Vermilion Parish, Louisiana, Louisiana Department of Transportation and Development, December 2014.
9. Gosselink, J.G. 1984. The ecology of delta marshes of coastal Louisiana: a community profile. USFWS FWS/OBS-84/09 134pp.
10. Miller, R. and E. Meselhe. 2007. Louisiana Chenier Plain Regional Hydrodynamic and Salinity Numerical Model. In Proceedings of the Tenth International Conference on Estuarine and Coastal Modeling Congress, pp. 407-426. 2007.
11. Wilber D.H., G.L. Ray, D.G. Clarke, and R.J. Diaz. 2008. Responses of Benthic Infauna to Large-Scale Sediment Disturbance in Corpus Christi Bay, Texas. Journal of Experimental Marine Biology and Ecology Volume 365, Issue 1, pp. 13–22.
12. Bilkovic, D.M. and M.M. Mitchell. 2013. Ecological tradeoffs of stabilized saltmarshes as a shoreline protection strategy: Effects of artificial structures on macrobenthic assemblages. Ecological Engineering 61:469–481



- (2) Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,
On the basis of the guidelines, the proposed disposal sites for the discharge of dredged material comply with the requirement of these guidelines, with the inclusion of appropriate and practicable conditions to minimize pollution or adverse effects on the aquatic ecosystem.

- (3) Specified as failing to comply with the requirements of these guidelines.

NA

IV. Evaluation Responsibility

- a. Water Quality Input Prepared by:
b. Project Description and Biological Input Prepared by: William P. Klein, Jr., Biologist

February 18, 2016

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Date

Joan Exnicios
Chief, Environmental Planning

References

1. Environmental Regulatory Code, Part IX. Water Quality Regulation, Louisiana Department of Environmental Quality, September 2014.
2. State of Louisiana Water Quality Management Plan, 2012 Water Quality Inventory: Integrated Report, Louisiana Department of Environmental Quality, Office of Water Resources, 2012.
3. http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm
4. <http://www.geoplatform.gov/gulfresponse/>
5. <http://www.nrc.uscg.mil/>
6. USACE, Final Dredged Material Management Plan and Supplemental Environmental Impact Statement: Calcasieu River and Pass, Louisiana, Volume I, 22 November 2010.
7. USGS, Water Resources of Cameron Parish, Louisiana, Louisiana Department of Transportation and Development, March 2014.
8. USGS, Water Resources of Vermilion Parish, Louisiana, Louisiana Department of Transportation and Development, December 2014.
9. Gosselink, J.G. 1984. The ecology of delta marshes of coastal Louisiana: a community profile. USFWS FWS/OBS-84/09 134pp.
10. Miller, R. and E. Meselhe. 2007. Louisiana Chenier Plain Regional Hydrodynamic and Salinity Numerical Model. In Proceedings of the Tenth International Conference on Estuarine and Coastal Modeling Congress, pp. 407-426. 2007.
11. Wilber D.H., G.L. Ray, D.G. Clarke, and R.J. Diaz. 2008. Responses of Benthic Infauna to Large-Scale Sediment Disturbance in Corpus Christi Bay, Texas. Journal of Experimental Marine Biology and Ecology Volume 365, Issue 1, pp. 13-22.
12. Bilkovic, D.M. and M.M. Mitchell. 2013. Ecological tradeoffs of stabilized saltmarshes as a shoreline protection strategy: Effects of artificial structures on macrobenthic assemblages. Ecological Engineering 61:469-481



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex B

Revised Louisiana Coastal Resources Program Consistency Determination



JOHN BEL EDWARDS
GOVERNOR



THOMAS F. HARRIS
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

February 26, 2016

Troy Constance
Corps of Engineers- New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267
Via e-mail: Troy.G.Constance@usace.army.mil

RE: **C20160002**, Coastal Zone Consistency
New Orleans District, Corps of Engineers (COE-NOD)
Direct Federal Action
Louisiana Coastwide Authority, Southwest Coastal Louisiana Project; National Economic Development (NED) and National Ecosystem Restoration (NER) Recommended Plans,
Vermilion, Cameron and Calcasieu Parishes, Louisiana

Dear Mr. Constance:

This letter is in response to your staff's inquiries for additional information regarding our recent Coastal Zone Consistency decision (C20160002) for the Southwest Coastal (SWC), Louisiana Project; National Economic Development (NED) and National Ecosystem Restoration (NER). Recommended Plans, as described in the consistency determination filed with the Louisiana Department of Natural Resources, Office of Coastal Management (OCM) on January 5, 2016, and more fully described in the Southwest Coastal Louisiana Study Integrated Final Feasibility Report and Environmental Impact Statement.

After close coordination between your staff and OCM personnel, we can reiterate that at this feasibility phase, both the NED and the NER Recommended Plans (RPs) and plan features are generally consistent with the Louisiana Coastal Resources Program (LCRP). Because the project is at the Feasibility Study stage, detailed information about project design and construction, and the potential effects on coastal resources, has not yet been generated. Therefore OCM's concurrence with your consistency determination has been evaluated appropriately under the provisions of NOAA Federal Consistency Regulations for phased consistencies (15 CFR Part 930.37(d)).

Consistency determinations, broadly, are prepared when sufficient information has been developed to reasonably determine the consistency of the activity with the State's approved coastal management plan. The consistency determination must include a detailed description of the proposed activity and reasonably foreseeable coastal effects, and comprehensive data and information sufficient to support the consistency determination. When this level of detail is not available, the phased consistency provides for State agreement that the federal activity is consistent at that early stage of planning, while anticipating that additional information and decisions will be developed in later phases, such as Preconstruction Engineering and Design, and will be subject to further consistency review. The phased consistency affords the Corps of Engineers and the State of Louisiana the opportunity to work

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Corps of Engineers
February 26, 2016
Page 2

towards full consistency as project design proceeds.

As noted in our concurrence letter, each specific measure in the NER RP will have details of design and construction which must be determined before their coastal effects can be fully evaluated. Also, over the period of implementation adaptive management responses to changes in technology, varied site conditions and project performance might result in refinements to the plan measures. The phased consistency will help expedite future efforts to evaluate coastal effects and ensure compliance with the Louisiana Coastal Resources Program (LCRP).

Examples of some of the information which is incomplete at the current phase were identified for five specific plan features of the recommended plan in an electronic mail message, dated January 29, 2016, from Jeff Harris of my staff to Dr. William Klein, and have been thoroughly discussed between our organizations at the staff level. These include, but are not limited to, sediment discharge management plans, staging and pipe laydown areas, access routes and methods, booster pump locations and placement, effects on existing infrastructure, etc. A copy of the e-mail is attached for your easy reference. OCM anticipates that the final consistency determinations for Recommend Plan measures will include project information of comparable detail. In that regard, OCM will issue concurrence letters for each specific NER RP measure, following our satisfactory review of measure-specific consistency determinations along with the supporting detail that is developed during the Project Design phase.

OCM has worked with the Corps on many projects in the Louisiana coast and finds no reason for concern that would prevent implementation of the recommended plan or any feature of the plan. The New Orleans District has successfully completed numerous consistency determinations for activities in the Louisiana coastal zone; our experience suggests that the consistency requirements for later phases of this project will be achieved through the usual project development process, and will be similar in nature to that of prior Corps projects in Louisiana.

Through continued close collaboration between the USACE and OCM staffs we anticipate concurring with the full consistency determination for each of NER project features. Proceeding by way of the phased consistency determination assures that both our agencies can be successful in meeting our missions and achieving a positive outcome for Louisiana's coast.

I look forward to continuing a close collaboration between our organizations. If you have any additional questions please contact Mr. Jeff Harris of my staff.

Sincerely,

/S/ Keith Lovell
Assistant Secretary

cc: Joan Exnicios, COE-NOD
Sandra Stiles, COE-NOD
William Klein, COE-NOD

**ATTACHMENT**

(* Note: Latitude/longitude coordinates have been deleted for clarity)

From: Jeff Harris [mailto:Jeff.Harris@LA.GOV]
Sent: Friday, January 29, 2016 3:01 PM
To: Klein, William P Jr MVN <William.P.Klein.Jr@usace.army.mil>
Subject: [EXTERNAL] RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)

Bill--

I've done a preliminary review of the three of the NER RD measures, 3a1, 3c1, and 47a1, and 47a2 and 47c1 will largely be similar to 47a1. I've identified some concerns, mostly due to lack of detail in the proposed plans, and I wanted to give you as much time as possible to review and address them. Rather than dumping all of it on you on Feb. 11.

I want to stress that this is preliminary. The comments below are, literally, my review notes.

Look them over and we can discuss next week.

Have a great weekend,

--Jeff

3a1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- Disposal dikes along shoreline: located on wetlands? Impacts? Need description or cross section showing relationship.
- Need plats & description of staging areas, discharge pipe laydown areas.
- Booster pump locations are vague. Propose to —minimize! wetland impacts also vague.
- Existing internal dike located at approx. * : How will it be dealt with, within the disposal area? How will the new & existing dike intersection be constructed? Description or plat needed.
- Access to disposal area: across GIWW bankline, or at weir at approx. * ? Impacts? Restored?
- Access of clamshell dredge: across shoreline? Impacts? Restored?
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- “Navigation traffic is not anticipated to be impacted.” What measures will be taken so boats can cross the pipeline, in Calcasieu Lake and along the back dike canal?
- Access to disposal area: across shoreline, or at the weirs at approx. * ? Impacts? Restored?
- Access of clamshell dredge: across shoreline? Impacts? Restored?
- Need plats & description of staging areas, discharge pipe laydown areas.
- Confirm that no dredging is anticipated to be necessary for moving booster pumps to their proposed locations. Oyster impacts.
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

47a1 Marsh Restoration Using Dredged Material South of Highway 82

- The disposal area has complex internal geography. Sediment discharge management plans?
- Need plats & description of staging areas, discharge pipe laydown areas.
- Oil field access road within the disposal area at approx. * . How will the containment dikes impact this road? How will sediment be conveyed across it? How will it be kept clear?



- At least 12 active or inactive oil and gas wells are located within the disposal area. How will access to these be maintained? Does it need to be maintained for P&A'ed wells?
- Canal dredging “not anticipated.” 2013 aerials show channel to be narrow, partially filled. Alternate plans?
- There are at least three pipeline crossings along the proposed access route, at approx. * ; and one road crossing at approx. * . Will this require changes to the access plans?
- Borrow area wave refraction: No study until PED stage? Potential beach erosion?
- Pg K-9 refers to typical cross section of borrow area in Annex A; no cross section present.
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

REPLY TO
ATTENTION OFDEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

January 5, 2016

Regional Planning and Environment
Division South
Environmental Planning BranchMr. Keith Lovell
Interagency Affairs – LADNR
Field Services Division
P.O. Box 44487, Capital Station
Baton Rouge, LA 70804-4487

Dear Mr. Lovell:

Reference your letters dated June 30, 2014, and June 2, 2015 regarding Consistency Zone Consistency #C20150064 for the Southwest Coastal Louisiana project. As noted in these letters, at the programmatic level, this project was considered consistent with the Louisiana Coastal Resources Program by the LADNR. However, these letters notified us that as more detailed information is developed and planning proceeds, consistency reviews would be necessary for each of the individual elements which make up the Southwest Coastal Louisiana Project.

The attached revised consistency determination includes detailed and constructible nonstructural flood risk reduction plan features for the National Economic Development Recommended Plan (NED RP), as well as detailed and constructible ecosystem restoration plan features for the National Ecosystem Restoration Recommended Plan (NER RP) as will be presented in the Integrated Final Feasibility Study and Environmental Impact Statement. Following this updated project information, a detailed analysis of the applicable Coastal Use Guidelines for both the NED and NER RP is provided. Also included are fact sheets describing, in more detail, the NER RP features.

The primary change to the NED RP is the mandatory requirement to acquire and demolish structures located within the FEMA Regulatory Floodway has been removed. The NED RP is now entirely voluntary. The nonstructural NED RP measures include: elevating eligible residential structures; dry floodproofing eligible non-residential structures, including warehouses and industrial complexes, and; construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses.

The NER RP proposes three types of ecosystem restoration: 9 marsh restoration features; 5 shoreline protection features; and 35 chenier reforestation features. The Calcasieu Calcasieu Ship Channel Salinity Barrier feature and the Cameron-Creole



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Spillway Salinity Control Structure feature are recommended for long-term study. Two marsh restoration features, located partially on U.S. Fish and Wildlife Service (USFWS) properties, are recommended for construction by the USFWS. Feature 124d Marsh Restoration at Mud Lake would be located on Sabine National Wildlife Refuge (NWR). Feature 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR.

Many of the NER RP features would be constructed in the immediate vicinity of Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) projects. The NER RP shoreline protection Feature 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and CS 33 (Cameron Parish Shoreline). The NER RP marsh restoration feature 124c would overlap portions of Project CS-59 (Oyster Bayou Marsh Creation and Terracing). The NER RP marsh restoration feature 3c1 would overlap portions of Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation). When overlap occurs, proposed NER RP features would be constructed to avoid existing coastal restoration projects by construction of temporary containment/exclusion dikes that would contain dredged borrow sediments used for construction of the NER RP feature and also prevent dredged effluents from entering the existing coastal restoration projects sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed.

Existing mitigation projects are also located within areas proposed for restoration under the NER RP. Mitigation projects are designed and constructed to offset anticipated losses from permitted activities. This revised Consistency Determination contains specific information about mitigation projects that occur within the project area. In most instances, these mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. When overlap occurs, the proposed NER RP features would not be constructed until the mitigation projects satisfy their 20-year permitted obligations.

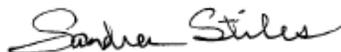
Based upon the revised evaluation, the U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District, has determined that the proposed action is consistent, to the maximum extent practicable, with the State of Louisiana's Coastal Resources Program.

Questions should be mailed to the attention of Ms. Sandra E. Stiles; U.S. Army Corps of Engineers; Regional Planning and Environment Division South; New Orleans



-2-

Environmental Branch; CEMVN-PDN-CEP; P.O. Box 60267; New Orleans, Louisiana 70160-0267. Ms. Sandra E. Stiles may be contacted at (504) 862-1583 if questions arise.


for Joan M. Exnicios
Chief, Environmental Planning Branch

Attachments:

Southwest Coastal Louisiana, Revised Louisiana Coastal Resources Consistency Determination

Appendix K Fact Sheets and Maps for Features of the National Ecosystem Restoration Recommended Plan



JOHN BEL EDWARDS
GOVERNOR



THOMAS F. HARRIS
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

February 12, 2016

Joan Exnicios
Environmental Branch
Corps of Engineers- New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267
Via e-mail: Joan.M.Exnicios@usace.army.mil

RE: C20160002, Coastal Zone Consistency
New Orleans District, Corps of Engineers (COE-NOD)
Direct Federal Action
Louisiana Coastwide Authority, Southwest Coastal Louisiana Project; National Economic
Development (NED) and National Ecosystem Restoration (NER) Recommended Plans,
Vermilion, Cameron and Calcasieu Parishes, Louisiana

Dear Ms. Exnicios:

The Office of Coastal Management (OCM) has received the above referenced federal application for consistency review with the approved Louisiana Coastal Resources Program (LCRP) in accordance with Section 307(c) of the Federal Coastal Zone Management Act of 1972, as amended.

National Economic Development Recommended Plan

After careful review, OCM finds that the NED Recommended Plan, as amended, is fully consistent with the LCRP. Further coordination with OCM on individual NED measures is not required provided those measures meet the stipulations described in the January 21, 2016, e-mail from Dr. William Klein of your staff. Specifically, those stipulations are:

1. No NED activities will be conducted in wetlands. This includes work areas, access routes, staging areas, and borrow and discharge locations. Wetlands would be defined by a Corps of Engineers wetland delineation, or as identified on LDNR's SONRIS GIS system, or other suitable source.
2. No NED work on cheniers will involve excavation; any necessary fill will be hauled in from approved borrow sites. Minor foundation excavation for purposes of raising a structure will be permissible provided the excavations are restored to preproject conditions.
3. NED projects will not significantly alter the local hydrology.
4. NED projects which do not meet these criteria will require pre-construction coordination with LDNR Office of Coastal Management, and may require an individual consistency determination or other authorization.

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Corps of Engineers
February 12, 2016
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Measures which do not meet those stipulations or which otherwise may have reasonably foreseeable coastal effects which have not been evaluated for consistency with the LCRP will require further review by OCM prior to implementation.

National Ecosystem Restoration Recommended Plan

Significant decisions or alternatives for the proposed NER measures remain undecided and will be finalized only after additional information is developed during the design phase. Therefore, review of this determination has proceeded per National Oceanic and Atmospheric Administration (NOAA) regulations on federal consistency at 15 CFR §930.36(d) for phased consistency determinations. OCM finds that this feasibility phase of the NER Recommended Plan is consistent with the LCRP, however, pursuant to federal regulations, consistency determinations must be submitted for each major decision in subsequent phases of the project measures that are subject to Federal discretion. The federal agency shall ensure that the measures under development continue to be consistent to the maximum extent practicable with the LCRP until such plans are finalized.

In order to fully review the activities addressed by this consistency determination, clear descriptions and depictions of proposed activities must be provided. Information necessary for OCM review includes precise locations and dimensions of proposed access routes; work and staging areas; temporary and permanent rights-of way; and estimates of temporary and permanent impacts to wetlands, shorelines, cheniers, and other sensitive coastal features, including those resulting from access to and staging for work sites.

As planning for the proposed measures proceeds and detailed information is developed, please provide additional consistency determinations as appropriate to ensure compliance with the LCRP. Please understand that this concurrence letter specifically does not authorize any construction or other NER Recommended Plan activities which may have reasonably foreseeable effects on coastal land use, water use, or natural resources.

If you have any questions concerning these comments, please contact Jeff Harris of the Consistency Section at (225) 342-7949.

Sincerely,

/s/ Don Haydel
Acting Administrator
Interagency Affairs/Field Services Division

DH/SK/jdh

cc: Sandra Stiles, COE-NOD
William Klein, COE-NOD
Dave Butler, LDWF
Kaili Patterson, OCM/FI
Darin Thomasse, OCM/FI
Laurie Cormier, Calcasieu Parish
Kara Bonsall, Cameron Parish



From: [Jennifer Mouton](#)
To: [Klein, William P Jr MVN](#); [Jeff Harris](#)
Cc: [Varnado, Paul A MVN](#); [MacInnes, Andrew D MVN](#); [Axtman, Timothy J MVN](#); [Broussard, Darrel M MVN](#); [Stiles, Sandra E MVN](#); [Exnicios, Joan M MVN](#); [Giltmore, Tammy H MVN](#); [Tye Fitzgerald](#); [Ken Duffy](#); [Bren Haase](#); [Brian Lezina](#)
Subject: [EXTERNAL] RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)
Date: Thursday, February 04, 2016 5:18:10 PM
Attachments: [Borrow Typical Section.pdf](#)

Jeff – here is a typical design drawing for the borrow area for 47a1, 47a2 and 47c1. The design for the borrow area for measures 127c3 and 306a1 would be very similar. At this time, we do not have actual geotechnical data for any borrow areas so the current design (as reflected in the attached plat and the Appendix K fact sheets) is our best estimate using best engineering judgment of what borrow areas will be needed. The location of the borrow area included an initial rudimentary assessment that took into account constraints such as pipelines, known hazards, structures, etc. More precise information on the borrow areas will be developed during the engineering and design phase when sediment sampling and bathymetric surveys will take place. Updated designs and dimensions will be provided to LDNR prior to construction activities. Should there be any significant changes in the design of this features or their borrow areas, a revised consistency determination will be provided to LDNR for review.

I will ensure that the attached drawing is included in the next iteration of Appendix K, Annex A. Thanks. Jennifer

From: Jennifer Mouton
Sent: Thursday, February 04, 2016 8:22 AM
To: 'Klein, William P Jr MVN'; Jeff Harris
Cc: Varnado, Paul A MVN; MacInnes, Andrew D MVN; Axtman, Timothy J MVN; Broussard, Darrel M MVN; Stiles, Sandra E MVN; Exnicios, Joan M MVN; Tammy Giltmore; Tye Fitzgerald; Ken Duffy; Bren Haase; Brian Lezina
Subject: RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)

Jeff – please see our responses below. Thanks for your quick review and comments. Jenn

3a1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- Disposal dikes along shoreline: located on wetlands? Impacts? Need description or cross section showing relationship.

Part of the constructed containment dikes will be on the shoreline. The others will be constructed along existing ridges and in open water. Wetland impacts will be restricted to the footprint of the constructed dikes and any adverse impacts will be offset by the creation and restoration of wetlands as described in the study. We have provided typical design drawings for containment dikes which contain the construction details such as slope, fill elevation, borrow area dimensions, etc. Project specific design drawings and plats have not yet been developed but will be completed once the project goes to the engineering and design phase. Updated drawings and plats will be submitted to LDNR at that time and prior to construction. Should any significant changes occur in design or project features, an updated consistency determination will be submitted to LDNR for review.



- Need plats & description of staging areas, discharge pipe laydown areas.

Site specific plats and cross-sections beyond the measure factsheet and map in Appendix K, p. K-5, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the GIWW along the bank line. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. No dredging is anticipated to be required to locate the staging barge. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

- Booster pump locations are vague. Propose to “minimize” wetland impacts also vague.

The booster pump quantity and locations were estimated based on previous marsh creation projects. The exact quantity and location of booster pumps are best determined by the size/horsepower of the Contractor’s equipment. While all reasonable efforts will be made to comply with the project features as proposed in the Appendix K fact sheet and map, should the need arise to alter booster pump locations in such a way as to cause adverse impacts to wetlands, an updated project description, design and plat will be provided to LDNR to review and consistency determination. Additionally, any adverse impacts to the wetlands, should they occur, due to booster pumps, will be temporary with restoration of the impacted areas to the pre-project conditions. It should be noted that at this stage of project design, it is anticipated that all booster pumps will be barge-mounted, and floated at the margin of the navigation, thus avoiding wetland impacts altogether. However, as mentioned above, the precise locations of the booster pumps will be dependent on the equipment used for dredging the Calcasieu Ship Channel and is unknown at this time. These details will become known during the bid process and subsequent to the engineering and design phase of this specific measure. Any significant changes to the project design or features will be fully described in an updated consistency determination request and submitted to LDNR for review prior to construction.

- Existing internal dike located at approx. Long 99.2244o: How will it be dealt with, within the disposal area? How will the new & existing dike intersection be constructed? Description or plat needed.

The this time, site specific plats have not yet been developed. However, it is anticipated that existing internal dikes and terraces will largely be left in place, and slurry will be added around them thus allowing the two marsh creation areas to be constructed in a side-by-side fashion. For the purposes of the WVA benefits, the existing internal dike was treated as existing marsh and counted as re-nourished rather than created. The existing internal dike will be breached once the southern retention dike is in place so that water exchange and fish access can occur. The number and locations of the breaches will be determined in PED. Updated project plats will be submitted to LDNR once they have been developed during the engineering and design phase. Any significant changes to the project design or project features will be fully described in an updated consistency determination request and submitted to LDNR for review prior to project construction.

- Access to disposal area: across GIWW bankline, or at weir at approx. 30.0585 o, 93.4550 o? Impacts? Restored?

This crossing will be finalized during engineering and design. As presently configured, the discharge pipeline crossing is located adjacent to the rock weir you mentioned. All crossing will be restored to pre-construction conditions prior to project completion. Any significant changes will be forwarded to LDNR for review prior to construction.



- Access of clamshell dredge: across shoreline? Impacts? Restored?

A clamshell dredge will not be used in construction of the Marsh Creation Area, as it would require flotation access through the existing GIWW bank line. Therefore, no impacts from the dredge are expected. Instead, marsh buggies will be used in the Marsh Creation Area and will access the Marsh Creation Area at the same location as the discharge pipeline to minimize impacts. Impacts due to the use of marsh buggies will be minimized by the use of the established best management practices for use of marsh buggies during construction. At project construction completion, this crossing will be restored to pre-construction conditions. Should any changes to this design or construction method occur, an updated project description and design plat will be submitted to LDNR for review to determine coastal consistency.

- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least pre-project conditions.
Good

No additional information needed.

3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- “Navigation traffic is not anticipated to be impacted.” What measures will be taken so boats can cross the pipeline, in Calcasieu Lake and along the back dike canal?

The discharge pipeline will be submerged and marked, per USCG requirements, at the locations mentioned in the above comment. In addition, close communication and coordination with the Calcasieu and Lake Charles River Pilots will be maintained at all times during construction to ensure no impacts to navigation safety. Navigation precautions similar to those followed during the construction of Mississippi River beneficial use of dredged material projects will be utilized to ensure minimal disruptions to navigation traffic.

- Access to disposal area: across shoreline, or at the weirs at approx. 29.8483 o, 93.2476 o and 29.8632 o, 93.2355 o ? Impacts? Restored?

Access to the Marsh Creation Areas will be across the shoreline/levee. The discharge pipeline and equipment will not cross over any weirs. Although temporary adverse impacts may occur during construction at the bank line crossings, these areas will be restored to pre-construction conditions prior to project completion. Should any changes to this construction method occur, an updated consistency determination request will be submitted to LDNR for review prior to project construction.

- Access of clamshell dredge: across shoreline? Impacts? Restored?

A clamshell dredge will not be used in construction of the Marsh Creation Area, as it would require flotation access through the existing GIWW bank line. Therefore, no impacts from the dredge are expected. Instead, marsh buggies will be used in the Marsh Creation Area and will access the Marsh Creation Area at the same location as the discharge pipeline to minimize impacts. Impacts due to the use of marsh buggies will be minimized by the use of the established best management practices for use of marsh buggies during construction. At project construction completion, this crossing will be restored to pre-construction conditions. Should any changes to this design or construction method occur, an updated project description and design plat will be submitted to LDNR for review to determine coastal consistency.



- Need plats & description of staging areas, discharge pipe laydown areas.

Site specific plats and cross-sections beyond the measure factsheet and map in Appendix K, p. K-8, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the Calcasieu Ship Channel and Calcasieu Lake. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

- Confirm that no dredging is anticipated to be necessary for moving booster pumps to their proposed locations. Oyster impacts.

At this time, we do not anticipate any dredging to be necessary. However, we do not know the draft necessary for a Contractor's booster pumps, so some dredging may be required. If dredging is necessary, all access dredging will be backfilled upon completion of the project. Calcasieu Lake is a Tier 2 oyster seed ground. We have entered into agreements with LDWF to dredge Tier 2 Seed Grounds, specifically Calcasieu Lake (access route and borrow area), and would expect to have the same agreement for construction of this project. Any activities that affect oyster seed grounds or harvest areas will be done in accordance with LDWF requirements and will be obtained prior to any project construction activities commencing.

- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least pre-project conditions. Good

No additional information needed.

47a1 Marsh Restoration Using Dredged Material South of Highway 82

- The disposal area has complex internal geography. Sediment discharge management plans?

A discharge plan will be finalized during engineering and design. At this time, given the large area of fill, we plan to break the large Marsh Creation Area into to smaller adjoining cells where applicable. A sediment discharge management plan can be forwarded to LDNR upon request and prior to project construction.

- Need plats & description of staging areas, discharge pipe laydown areas.

Site specific plats and cross-sections for the 47 projects beyond the measure factsheets and maps in Appendix K, p. K-9-17, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the existing access channel from the Gulf of Mexico. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. Alternative access for equipment can be made via Highway 82 if necessary. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.



- Oil field access road within the disposal area at approx. 29.7483 o, 92.9035 o. How will the containment dikes impact this road? How will sediment be conveyed across it? How will it be kept clear?

We will work with the road/landowner should they require the oil field access road to remain accessible. One way to achieve this is to use the road as one of the divisions between Marsh Creation Area cells similar to the existing internal dike as described in Measure 3a1. Dredge material would then be discharged on either side of the road. Where the discharge pipe needs to cross the access road a ramp can be constructed. Any impacts to existing access roads or banklines will be restored to their pre-project condition at the completion of construction.

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- Canal dredging "not anticipated." 2013 aerials show channel to be narrow, partially filled. Alternate plans?

At this time, we anticipate the Contractor will be able to float the discharge pipe through the narrow canal with a small boat, or airboat, not requiring dredging. If this is not possible a marsh buggy could be used to pull the discharge pipe through the canals. Any significant changes to this plan will be documented and forwarded to LDNR for review for consistency.

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If crossing agreements cannot be made for the proposed access routes, the discharge pipe can be floated over the pipelines. At the oilfield access road, a ramp could be constructed to maintain access. There will be no impacts to existing pipelines. Any impacts to existing access roads or banklines will be temporary in nature. All impacted areas outside of the project feature will be restored to its pre-project condition at the completion of construction. Any changes to the access plans which occur during engineering and design will be provided to LDNR upon request. Should any significant changes be made to the design or project features, including site access plans, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

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- Pg K-9 refers to typical cross section of borrow area in Annex A; no cross section present.

It appears that drawing was inadvertently omitted from the report. A typical cross section will be forwarded to you as soon as possible.

- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least pre-project conditions.
Good

No additional information needed.

From: Klein, William P Jr MVN [<mailto:William.P.Klein.Jr@usace.army.mil>]
Sent: Monday, February 01, 2016 8:00 AM
To: Jeff Harris
Cc: Varnado, Paul A MVN; MacInnes, Andrew D MVN; Axtman, Timothy J MVN; Broussard, Darrel M MVN; Stiles, Sandra E MVN; Exnicios, Joan M MVN; Jennifer Mouton
Subject: RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Thanks Jeff for providing your comments and enabling us to provide you with responses as soon as possible instead of waiting to receive all comments on Feb 11.

We will get comment responses to you as soon as possible. \

Bill

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To: Klein, William P Jr MVN <William.P.Klein.Jr@usace.army.mil>
Subject: [EXTERNAL] RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)

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I've done a preliminary review of the three of the NER RD measures, 3a1, 3c1, and 47a1, and 47a2 and 47c1 will largely be similar to 47a1. I've identified some concerns, mostly due to lack of detail in the proposed plans, and I wanted to give you as much time as possible to review and address them. Rather than dumping all of it on you on Feb. 11.

I want to stress that this is preliminary. The comments below are, literally, my review notes.



Look them over and we can discuss next week.

Have a great weekend,

--Jeff

3a1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- Disposal dikes along shoreline: located on wetlands? Impacts? Need description or cross section showing relationship.
- Need plats & description of staging areas, discharge pipe laydown areas.
- Booster pump locations are vague. Propose to "minimize" wetland impacts also vague.
- Existing internal dike located at approx. Long 99.2244o: How will it be dealt with, within the disposal area? How will the new & existing dike intersection be constructed? Description or plat needed.
- Access to disposal area: across GIWW bankline, or at weir at approx. 30.0585 o, 93.4550 o? Impacts? Restored?
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CLASSIFICATION: UNCLASSIFIED



From: [Jennifer Mouton](#)
To: [Klein, William P. Jr. MVN](#); [Jeff Harris](#)
Cc: [Yamada, Paul A. MVN](#); [MacInnes, Andrew D. MVN](#); [Axtman, Timothy J. MVN](#); [Broussard, Darrel H. MVN](#); [Stiles, Sandra E. MVN](#); [Eanicos, Joan M. MVN](#); [Gilmore, Tammy H. MVN](#); [Tye Fitzgerald](#); [Ken Duffy](#); [Bren Hease](#); [Brian Lezina](#)
Subject: [EXTERNAL] RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)
Date: Thursday, February 04, 2016 8:24:04 AM

Jeff – please see our responses below. Thanks for your quick review and comments. Jenn

3a1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- Disposal dikes along shoreline: located on wetlands? Impacts? Need description or cross section showing relationship.

Part of the constructed containment dikes will be on the shoreline. The others will be constructed along existing ridges and in open water. Wetland impacts will be restricted to the footprint of the constructed dikes and any adverse impacts will be offset by the creation and restoration of wetlands as described in the study. We have provided typical design drawings for containment dikes which contain the construction details such as slope, fill elevation, borrow area dimensions, etc. Project specific design drawings and plats have not yet been developed but will be completed once the project goes to the engineering and design phase. Updated drawings and plats will be submitted to LDNR at that time and prior to construction. Should any significant changes occur in design or project features, an updated consistency determination will be submitted to LDNR for review.

- Need plats & description of staging areas, discharge pipe laydown areas.

Site specific plats and cross-sections beyond the measure factsheet and map in Appendix K, p. K-5, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the GIWW along the bank line. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. No dredging is anticipated to be required to locate the staging barge. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

- Booster pump locations are vague. Propose to “minimize” wetland impacts also vague.

The booster pump quantity and locations were estimated based on previous marsh creation projects. The exact quantity and location of booster pumps are best determined by the size/horsepower of the Contractor’s equipment. While all reasonable efforts will be made to comply with the project features as proposed in the Appendix K fact sheet and map, should the need arise to alter booster pump locations in such a way as to cause adverse impacts to wetlands, an updated project description, design and plat will be provided to LDNR to review and consistency determination. Additionally, any adverse impacts to the wetlands, should they occur, due to booster pumps, will be temporary with restoration of the impacted areas to the pre-project conditions. It should be noted that at this stage of project design, it is anticipated that all booster pumps will be barge-mounted, and floated at the margin of the navigation, thus avoiding wetland impacts altogether. However, as mentioned above, the precise locations of the booster pumps will be dependent on the equipment used for dredging the Calcasieu Ship Channel and is unknown.



at this time. These details will become known during the bid process and subsequent to the engineering and design phase of this specific measure. Any significant changes to the project design or features will be fully described in an updated consistency determination request and submitted to LDNR for review prior to construction.

- Existing internal dike located at approx. Long 99.2244o: How will it be dealt with, within the disposal area? How will the new & existing dike intersection be constructed? Description or plat needed.

The this time, site specific plats have not yet been developed. However, it is anticipated that existing internal dikes and terraces will largely be left in place, and slurry will be added around them thus allowing the two marsh creation areas to be constructed in a side-by-side fashion. For the purposes of the WVA benefits, the existing internal dike was treated as existing marsh and counted as re-nourished rather than created. The existing internal dike will be breached once the southern retention dike is in place so that water exchange and fish access can occur. The number and locations of the breaches will be determined in PED. Updated project plats will be submitted to LDNR once they have been developed during the engineering and design phase. Any significant changes to the project design or project features will be fully described in an updated consistency determination request and submitted to LDNR for review prior to project construction.

- Access to disposal area: across GIWW bankline, or at weir at approx. 30.0585 o, 93.4550 o? Impacts? Restored?

This crossing will be finalized during engineering and design. As presently configured, the discharge pipeline crossing is located adjacent to the rock weir you mentioned. All crossing will be restored to pre-construction conditions prior to project completion. Any significant changes will be forwarded to LDNR for review prior to construction.

- Access of clamshell dredge: across shoreline? Impacts? Restored?

A clamshell dredge will not be used in construction of the Marsh Creation Area, as it would require flotation access through the existing GIWW bank line. Therefore, no impacts from the dredge are expected. Instead, marsh buggies will be used in the Marsh Creation Area and will access the Marsh Creation Area at the same location as the discharge pipeline to minimize impacts. Impacts due to the use of marsh buggies will be minimized by the use of the established best management practices for use of marsh buggies during construction. At project construction completion, this crossing will be restored to pre-construction conditions. Should any changes to this design or construction method occur, an updated project description and design plat will be submitted to LDNR for review to determine coastal consistency.

- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least pre-project conditions.
Good

No additional information needed.

3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- "Navigation traffic is not anticipated to be impacted." What measures will be taken so boats can cross the pipeline, in Calcasieu Lake and along the back dike canal?

The discharge pipeline will be submerged and marked, per USCG requirements, at the locations mentioned in the above comment. In addition, close communication and coordination with the Calcasieu and Lake Charles River



Pilots will be maintained at all times during construction to ensure no impacts to navigation safety. Navigation precautions similar to those followed during the construction of Mississippi River beneficial use of dredged material projects will be utilized to ensure minimal disruptions to navigation traffic.

- Access to disposal area: across shoreline, or at the weirs at approx. 29.8483 o, 93.2476 o and 29.8632 o, 93.2355 o? Impacts? Restored?

Access to the Marsh Creation Areas will be across the shoreline/levee. The discharge pipeline and equipment will not cross over any weirs. Although temporary adverse impacts may occur during construction at the bank line crossings, these areas will be restored to pre-construction conditions prior to project completion. Should any changes to this construction method occur, an updated consistency determination request will be submitted to LDNR for review prior to project construction.

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A clamshell dredge will not be used in construction of the Marsh Creation Area, as it would require flotation access through the existing GWW bank line. Therefore, no impacts from the dredge are expected. Instead, marsh buggies will be used in the Marsh Creation Area and will access the Marsh Creation Area at the same location as the discharge pipeline to minimize impacts. Impacts due to the use of marsh buggies will be minimized by the use of the established best management practices for use of marsh buggies during construction. At project construction completion, this crossing will be restored to pre-construction conditions. Should any changes to this design or construction method occur, an updated project description and design plat will be submitted to LDNR for review to determine coastal consistency.

- Need plats & description of staging areas, discharge pipe laydown areas.

Site specific plats and cross-sections beyond the measure factsheet and map in Appendix K, p. K-8, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the Calcasieu Ship Channel and Calcasieu Lake. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

- Confirm that no dredging is anticipated to be necessary for moving booster pumps to their proposed locations. Oyster impacts.

At this time, we do not anticipate any dredging to be necessary. However, we do not know the draft necessary for a Contractor's booster pumps, so some dredging may be required. If dredging is necessary, all access dredging will be backfilled upon completion of the project. Calcasieu Lake is a Tier 2 oyster seed ground. We have entered into agreements with LDWF to dredge Tier 2 Seed Grounds, specifically Calcasieu Lake (access route and borrow area), and would expect to have the same agreement for construction of this project. Any activities that affect oyster seed grounds or harvest areas will be done in accordance with LDWF requirements and will be obtained prior to any project construction activities commencing.

- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least pre-project conditions.



Good

No additional information needed.

47a1 Marsh Restoration Using Dredged Material South of Highway 82

- The disposal area has complex internal geography. Sediment discharge management plans?

A discharge plan will be finalized during engineering and design. At this time, given the large area of fill, we plan to break the large Marsh Creation Area into smaller adjoining cells where applicable. A sediment discharge management plan can be forwarded to LDNR upon request and prior to project construction.

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Site specific plats and cross-sections for the 47 projects beyond the measure factsheets and maps in Appendix K, p. K-9-17, have not yet been developed. However, as it is currently depicted, the discharge pipe will be floated in via the existing access channel from the Gulf of Mexico. The discharge pipe will be moved around in the outfall area so as to distribute sediment in such a way as to provide a dewatered surface elevation conducive to marsh vegetation establishment. The frequency and distance of pipeline relocation will depend on the quality (grain size and water/sediment ratio) of the slurry. The staging area and equipment, as envisioned, will be outside of the feature area and barged in via open water. Alternative access for equipment can be made via Highway 82 if necessary. Should any changes be made to the design or project features, an updated consistency determination with site specific plats and descriptions will be submitted to LDNR for review prior to construction.

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We will work with the road/landowner should they require the oil field access road to remain accessible. One way to achieve this is to use the road as one of the divisions between Marsh Creation Area cells similar to the existing internal dike as described in Measure 3a1. Dredge material would then be discharged on either side of the road. Where the discharge pipe needs to cross the access road a ramp can be constructed. Any impacts to existing access roads or banklines will be restored to their pre-project condition at the completion of construction.

- At least 12 active or inactive oil and gas wells are located within the disposal area. How will access to these be maintained? Does it need to be maintained for P&A'ed wells?

Access agreements to all well sites will be negotiated with the well owners during engineering and design. A design to ensure they are not restricted from accessing their oil and gas wells will be refined at that time. Land access designs and copies of access agreements will be provided to LDNR upon request prior to project construction activities.

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At this time, we anticipate the Contractor will be able to float the discharge pipe through the narrow canal with a small boat, or airboat, not requiring dredging. If this is not possible a marsh buggy could be used to pull the discharge pipe through the canals. Any significant changes to this plan will be documented and forwarded to LDNR for review for consistency.



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- Pg K-9 refers to typical cross section of borrow area in Annex A; no cross section present.

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Sent: Monday, February 01, 2016 8:00 AM

To: Jeff Harris

Cc: Varnado, Paul A MVN; MacInnes, Andrew D MVN; Axtman, Timothy J MVN; Broussard, Darrel M MVN; Stiles, Sandra E MVN; Exnicios, Joan M MVN; Jennifer Mouton

Subject: RE: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)

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To: [Jeff Harris](#)
Cc: [Varnado, Paul A MVN](#); [MacInnes, Andrew D MVN](#); [Axtman, Timothy J MVN](#); [Broussard, Darrel M MVN](#); [Stiles, Sandra E MVN](#); [Eonicios, Joan M MVN](#); [Jennifer Mouton](#)
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Date: Monday, February 01, 2016 8:00:00 AM

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- Disposal dikes along shoreline: located on wetlands? Impacts? Need description or cross section showing relationship.
- Need plats & description of staging areas, discharge pipe laydown areas.
- Booster pump locations are vague. Propose to “minimize” wetland impacts also vague.
- Existing internal dike located at approx. Long 99.2244o: How will it be dealt with, within the disposal area? How will the new & existing dike intersection be constructed? Description or plat needed.
- Access to disposal area: across GWW bankline, or at weir at approx. 30.0585 o, 93.4550 o? Impacts? Restored?
- Access of clamshell dredge: across shoreline? Impacts? Restored?
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel

- “Navigation traffic is not anticipated to be impacted.” What measures will be taken so boats can cross the pipeline, in Calcasieu Lake and along the back dike canal?
- Access to disposal area: across shoreline, or at the weirs at approx. 29.8483 o, 93.2476 o and 29.8632 o, 93.2355 o? Impacts? Restored?
- Access of clamshell dredge: across shoreline? Impacts? Restored?
- Need plats & description of staging areas, discharge pipe laydown areas.
- Confirm that no dredging is anticipated to be necessary for moving booster pumps to their proposed locations. Oyster impacts.
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

47a1 Marsh Restoration Using Dredged Material South of Highway 82

- The disposal area has complex internal geography. Sediment discharge management plans?
- Need plats & description of staging areas, discharge pipe laydown areas.
- Oil field access road within the disposal area at approx. 29.7483 o, 92.9035 o. How will the containment dikes impact this road? How will sediment be conveyed across it? How will it be kept clear?
- At least 12 active or inactive oil and gas wells are located within the disposal area. How will access to these be maintained? Does it need to be maintained for P&A'ed wells?
- Canal dredging “not anticipated.” 2013 aeriels show channel to be narrow, partially filled. Alternate plans?
- There are at least three pipeline crossings along the proposed access route, at approx. 29.7110 o, 92.9340 o, at 29.7160 o, 92.9251 o, and at 29.7277 o, 92.9116 o; and one road crossing at approx. 29.7109 o, 92.9342o. Will this require changes to the access plans?



- Borrow area wave refraction: No study until PED stage? Potential beach erosion?
- Pg K-9 refers to typical cross section of borrow area in Annex A; no cross section present.
- Pg B-73, Guideline 3.8: For all NER RD, beach crossings will be restored to at least preproject conditions. Good

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CLASSIFICATION: UNCLASSIFIED



From: [Klein, William P. Jr. MVN](#)
To: [Jeff Harris](#)
Cc: [Yarnado, Paul A. MVN](#); [MacInnes, Andrew D. MVN](#); [Stiles, Sandra E. MVN](#); [Kinsey, Mary V. MVN](#); [Drobot, Ann E. MVN](#); [Axtman, Timothy J. MVN](#)
Subject: updated numbers for Southwest Coastal Louisiana Consistency determination (UNCLASSIFIED)
Date: Wednesday, January 27, 2016 8:57:00 AM
Attachments: [Revised_C2M Table 2a Klein 01272016.docx](#)

CLASSIFICATION: UNCLASSIFIED

Jeff Harris:

Upon further review we have discovered that borrow areas were double counted for marsh restoration features.

Please see attached updated Table 2a column total for Borrow Areas for marsh restoration measures.

Please revise 14,410 acres total to 7,028 acres total.

Thank You!

Bill

William P. Klein, Jr.
US Army Corps of Engineers
PO Box 60267
New Orleans, LA 70160-0267
504-862-2540
william.p.klein.jr@usace.army.mil

CLASSIFICATION: UNCLASSIFIED



From: [Klein, William P Jr MVN](#)
To: [Jeff Harris](#)
Cc: [Yamada, Paul A MVN](#); [MacInnes, Andrew D MVN](#); [Stiles, Sandra E MVN](#); [Klein, William P Jr MVN](#)
Subject: FW: C20160002 LCA Southwest Coastal Louisiana (UNCLASSIFIED)
Date: Thursday, January 21, 2016 2:03:00 PM

CLASSIFICATION: UNCLASSIFIED

Jeff

The following updated section has been added to the LDNR Consistency Determination on page B-7, following the general description of the NED Plan on B-5 to B-6 and prior to the "Details of the Nonstructural NED RP section. Thank you for accepting these revisions via email.

LDNR Specific Concerns about the NED RP

By electronic mail on January 21, 2016, the LDNR requested the USACE to provide specific responses to the below comments despite although several of these comments are covered in different sections throughout the document.

1. No NED activities will be conducted in wetlands. This includes work areas, access routes, staging areas, and borrow and discharge locations. Wetlands would be defined by a Corps of Engineers wetland delineation, or as identified on LDNR's SONRIS GIS system, or other suitable source.

RESPONSE: Concur. If wetlands would be impacted by NED construction, the structure would no longer be eligible for nonstructural measures. Will include revised language as requested up front. Also, I already have in report (responses to some specific Coastal Guidelines) that work would be done on previously disturbed residential and commercial lands and that we would not impact waters of the USA (which includes wetlands).

2. No NED work on cheniers will involve excavation; any necessary fill will be hauled in from approved borrow sites. Minor foundation excavation for purposes of raising a structure will be permissible provided the excavations are restored to preproject conditions.

RESPONSE: No NED work will take place on cheniers (excavation or fill). All NED measures will be confined to existing structure locations and previously impacted sites and any required borrow material would be from an approved site.

3. NED projects will not significantly alter the local hydrology.

RESPONSE: Concur. Part of the definition of a nonstructural measure is that it reduces human exposure to a flood hazard without altering the nature or extent of that hazard. Nonstructural measures are tightly confined to the flood-proofed structure and they will not impact local hydrology. Additional language would be included in the CD up front. I already mention in some Consistency guidelines that the NED plan would not impact hydrology.

4. NED projects which do not meet these criteria will require pre-construction coordination with LDNR Office of Coastal Management, and may require an individual consistency determination or other authorization.

RESPONSE: Concur. Responses to LDNR's above cited specific concerns has been provided in the general description section prior to responses of individual Consistency Guidelines.

Please let me know if you require any additional information.
Thank you,

Bill



—Original Message—

From: Jeff Harris [mailto:Jeff.Harris@LA.GOV]

Sent: Thursday, January 21, 2016 10:55 AM

To: Klein, William P Jr MVN <William.P.Klein.Jr@usace.army.mil>

Cc: Jennifer Mouton <Jennifer.Mouton@LA.GOV>; Varnado, Paul A MVN <Paul.A.Varnado@usace.army.mil>;

MacInnes, Andrew D MVN <Andrew.D.MacInnes@usace.army.mil>; Stiles, Sandra E MVN

<Sandra.E.Stiles@usace.army.mil>

Subject: [EXTERNAL] C20160002 LCA Southwest Coastal Louisiana

Bill—

As we discussed by telephone this morning, I've begun reviewing the referenced consistency determination and have some concerns that should be addressed for the National Economic Development Recommended Plan.

The issue is that, at this stage, the specific locations and work activities involved in the proposed NED floodproofing are not yet determined, and concurring with a broad consistency statement without knowing details about the actual activities is problematic. We can, however, fully concur with the consistency determination (by which I mean, I can recommend full concurrence to my superiors) for the NED portion of the project, if the consistency determination includes statements along the following lines:

- No NED activities will be conducted in wetlands. This includes work areas, access routes, staging areas, and borrow and discharge locations. Wetlands would be defined by a Corps of Engineers wetland delineation, or as identified on LDNR's SONRIS GIS system, or other suitable source.
- No NED work on cheniers will involve excavation; any necessary fill will be hauled in from approved borrow sites. Minor foundation excavation for purposes of raising a structure will be permissible provided the excavations are restored to preproject conditions.
- NED projects will not significantly alter the local hydrology.
- NED projects which do not meet these criteria will require pre-construction coordination with LDNR Office of Coastal Management, and may require an individual consistency determination or other authorization.

I realize several of these points are covered in different places throughout the document. For OCM's purposes, we'd prefer a single concise statement of these criteria.

If acceptable, please send a revision to the consistency determination indicating that you wish to include these criteria. If we need to discuss further, please don't hesitate to write or call.

Thanks,



–Jeff

225-342-7949

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COASTAL ZONE CONSISTENCY DETERMINATION

Reference June 30, 2014, and June 2, 2015 letters from the Louisiana Department of Natural Resources, Office of Coastal Management (LDNR) regarding Consistency Zone Consistency #C20150064 for the Southwest Coastal Louisiana project. As noted in these letters, at the programmatic level, this project was considered consistent with the Louisiana Coastal Resources Program (LCRP) by the LDNR. However, these letters notified the CEMVN that as information is developed and planning proceeds, consistency reviews will be necessary for each of the individual elements which make up the Southwest Coastal Louisiana Project. Hence, the following revised consistency determination contains more detailed feasibility level description of the proposed action. The Southwest Coastal Louisiana Study is comprised of two components consisting of a nonstructural National Economic Development (NED) plan and a National Ecosystem Restoration (NER) plan. The NED Recommended Plan (RP) is the Nonstructural 0-25-Year Floodplain Plan (Modified Plan 8 –RP) that would provide hurricane and storm damage risk reduction. The NER RP is the Small Integrated Restoration Alternative, a comprehensive ecosystem restoration plan addressing land loss and ecosystem degradation. The NER RP is cost effective, and is the least-cost comprehensive best buy plan. The NER RP would minimize land loss; enhance plant productivity by reducing major stressors; and reinforce and protect critical landscape features. Table 1 provides a brief description of the NER RP measures. Tables 2a, 2b, and 2c provide the NER RP measure details, description of construction equipment, and quantities and types of fill to be placed in wetlands. Figures 1, 2 and 3 display locations of the NER RP measures. Following this updated project information, a more detailed analysis of the applicable Coastal Use Guidelines for both the Nonstructural NED RP and NER RP is provided. The State of Louisiana, through the Coastal Protection and Restoration Authority Board (CPRAB), would be the non-Federal Sponsor and therefore responsible for the operation, maintenance, repair, replacement, and rehabilitation costs (OMRR&R).

INTRODUCTION

Section 307 of the Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et. seq. requires that "each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section 307, a Consistency Determination has been prepared for the proposed Southwest Coastal Louisiana project. Coastal Use Guidelines were written to implement the policies and goals of the Louisiana Coastal Resources Program, and serve as a set of performance standards for evaluating projects. Compliance with the Louisiana Coastal Resources Program, and therefore, Section 307, requires compliance with applicable Coastal Use Guidelines.

PURPOSE AND NEED FOR THE PROPOSED ACTION

Problem

The people, economy, unique environment, and cultural heritage of southwest Louisiana are at risk due to storm surge flooding and wave impacts from tropical storms. The area's low elevation, proximity to the Gulf of Mexico, land subsidence, and rising sea level, are expected to exacerbate coastal flooding, shoreline erosion, saltwater intrusion, and loss of wetland and chenier habitats in the future.

Purpose

The study purpose is to evaluate coastal storm flood damages and coastal ecosystem degradation in Cameron, Calcasieu, and Vermilion parishes in Louisiana. The intent is to develop potential solutions to these water resource problems. The Federal objective of water and related land resources planning is to provide the greatest net contribution to Nonstructural NED RP consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. The ecosystem objective is to contribute to NER by restoring function and structure to significant ecological resources.



Study Objectives

1. Reduce the risk of damages and losses from hurricane and storm surge flooding in southwest Louisiana.
2. Manage tidal flows to improve drainage and prevent salinity from exceeding 2 parts per thousand (ppt) for fresh marsh and 6 ppt for intermediate marsh.
3. Increase wetland productivity in southwest coastal Louisiana in fresh and intermediate marshes to maintain function by reducing the time that water levels exceed marsh surfaces.
4. Reduce shoreline erosion and stabilize canal banks in southwest coastal Louisiana areas to protect adjacent wetlands.
5. Restore landscapes, including marsh, shoreline, and cheniers in southwest coastal Louisiana, to maintain their function as wildlife habitat and improve their ability to serve as protective barriers.

Constraints

- Federally authorized commercial navigation.
- Federally threatened and endangered species (i.e., piping plover) and their critical habitats.
- Essential fish habitat, especially intertidal wetlands.
- Historic and cultural resources.

General

The Southwest Coastal Louisiana (SWC) project, encompassing approximately 4,700 square miles and including all of Calcasieu, Cameron, and Vermilion parishes, would provide nonstructural hurricane and storm surge damage risk reduction measures/measures as well as ecosystem restoration measures/measures throughout the project area (Figure 1).

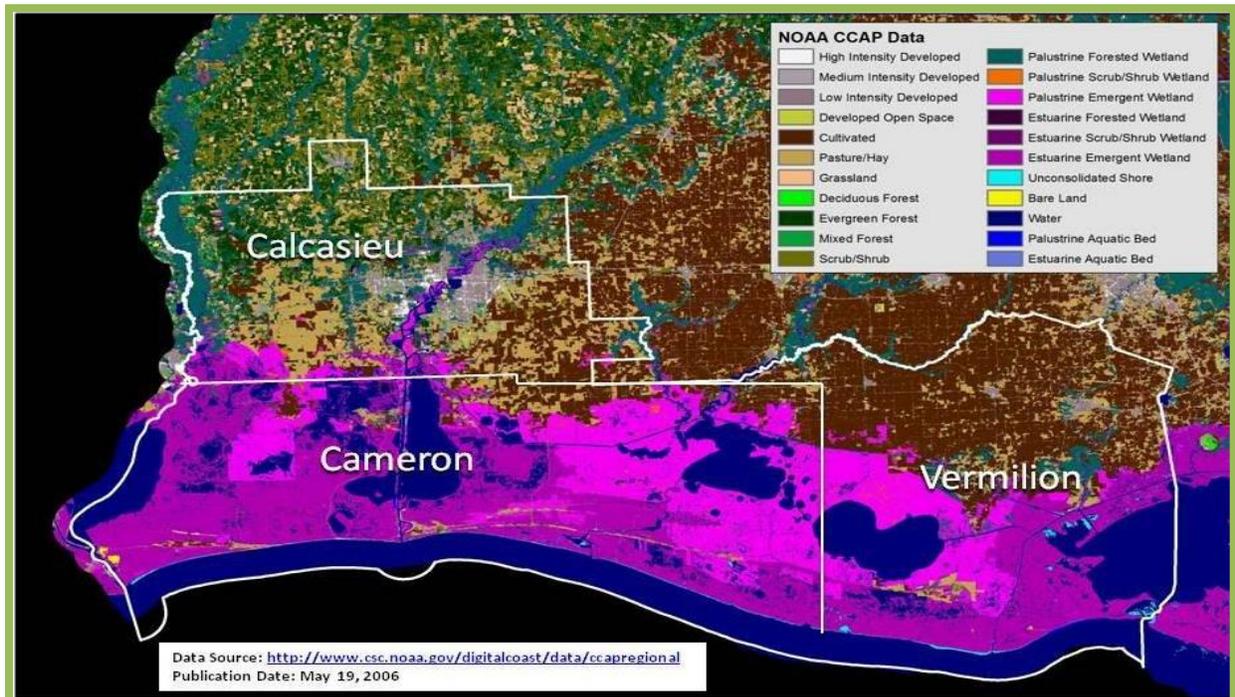


Figure 1. Southwest Coastal Louisiana study area.

Impacts of both the Nonstructural NED RP and the NER RP are also described in the Final Integrated Report & EIS. Cameron Parish is located in the southwest corner of Louisiana. The southern boundary of the parish is the Gulf of Mexico. Eighty-two percent of Cameron Parish is coastal marshes. Geographically, it is one of



the largest parishes in Louisiana. The parish is chiefly rural and the largest communities are Cameron and Hackberry. Cameron is located along LA-82, while Hackberry is located along LA-27. Other smaller communities include Creole, Johnsons Bayou, and Holly Beach. Calcasieu Parish is located due north of Cameron Parish. The town of Lake Charles is the parish seat, which is the largest urban area in the study area. Only a small portion of the parish is located in the coastal zone. Vermilion Parish is located due east of Cameron Parish. The southern boundary of the parish is the Gulf of Mexico. Large expanses of Vermilion Parish are open water (lakes, bays, and streams). Approximately 50 percent of the land is coastal marshes. The parish is chiefly rural and the town of Abbeville is the parish seat as well as the largest urban area in the parish. Other communities include Delcambre, Kaplan, and Gueydan, which are all located along LA-14 in the northern part of the study area. Pecan Island and Forked Island are smaller communities, both located along LA-82 in lower Vermilion Parish. Located along LA-333, Intracoastal City is the nearest access to Vermilion Bay and the Gulf of Mexico in this region and supports the area's oil and shrimp industries.

NED Recommended Plan: Southwest Coastal Louisiana communities are at increasing risk to hurricane and storm surge flooding due to wetland loss, sea level rise, and land subsidence. The purpose of the voluntary Nonstructural NED RP is to provide hurricane and storm damage risk reduction to reduce the risk of flood damages caused by hurricane and storm surges. Eligible properties must have a first floor elevation at or below the 2025 25-year Base Flood Elevation (BFE). Eligible structures would be raised to the 2075 100-year BFE. Proposed measures of the voluntary Nonstructural NED RP include:

- elevating eligible residential structures;
- dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes, and;
- construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses.

NER Recommended Plan: The purpose of the NER RP is to restore environmental conditions for the Chenier Plain ecosystem as more fully described in the 2004 Louisiana Coastal Area, Ecosystem Restoration Study. Ecosystem restoration measures are focused on areas of critical need where restoration would replace lost habitats and/or help prevent predicted habitat losses. The Nonstructural NER RP would provide important, essential and critical habitats used for shelter, nesting, feeding, roosting, cover, nursery, and other life requirements of migratory birds, wildlife, finfish, shellfish and other aquatic organisms; increase productivity and essential fish habitat (EFH); increase transitional coastal wetland habitats between estuarine and marine environments; and restore imperiled chenier forest habitats used as stopover habitat by migrating neotropical birds. Restoration and protection of coastal wetlands and chenier habitats would help buffer and protect human habitations by ameliorating hurricane and storm surges. Restoration of coastal wetlands would also help improve water quality by filtering pollutants and sediments. The U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District (CEMVN) proposes three types of ecosystem restoration measures in the Calcasieu/Sabine and Mermentau/Tech-Vermilion basins:

- 9 marsh restoration measures;
- 5 shoreline protection measures; and
- 35 chenier reforestation and invasive species control 35 locations in Cameron and Vermilion Parishes.
- The Calcasieu Ship Channel Salinity Barrier measure is being recommended for long term study.
- The Cameron-Creole Spillway Salinity Control Structure measure is being recommended for long-term study.
- Two marsh restoration measures, located partially on U.S. Fish and Wildlife Service (USFWS) properties, are recommended for construction by the USFWS. Measure 124d Marsh Creation at Mud Lake would be located on Sabine National Wildlife Refuge (NWR). Measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR.

The CEMVN does not anticipate a need for compensatory mitigation as a result of implementing either the Nonstructural NED RP or the NER RP. Environmental Justice (EJ) requires the fair treatment and meaningful



involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The Nonstructural NED RP and the NER RP would not adversely impact minority or low-income populations and is fully compliant with Executive Order 12898.

NATIONAL ECONOMIC DEVELOPMENT RECOMMENDED PLAN

A primary goal of the Nonstructural NED RP is to reduce flood risk for residential and non-residential structures that have first floor elevations at or below the 0-25-year floodplain (**Figure 2**), based on hydrologic conditions predicted to occur in 2025 (the beginning of the 50 year period of analysis). Participation in the Nonstructural NED RP is voluntary, and would provide reduced risk of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses.

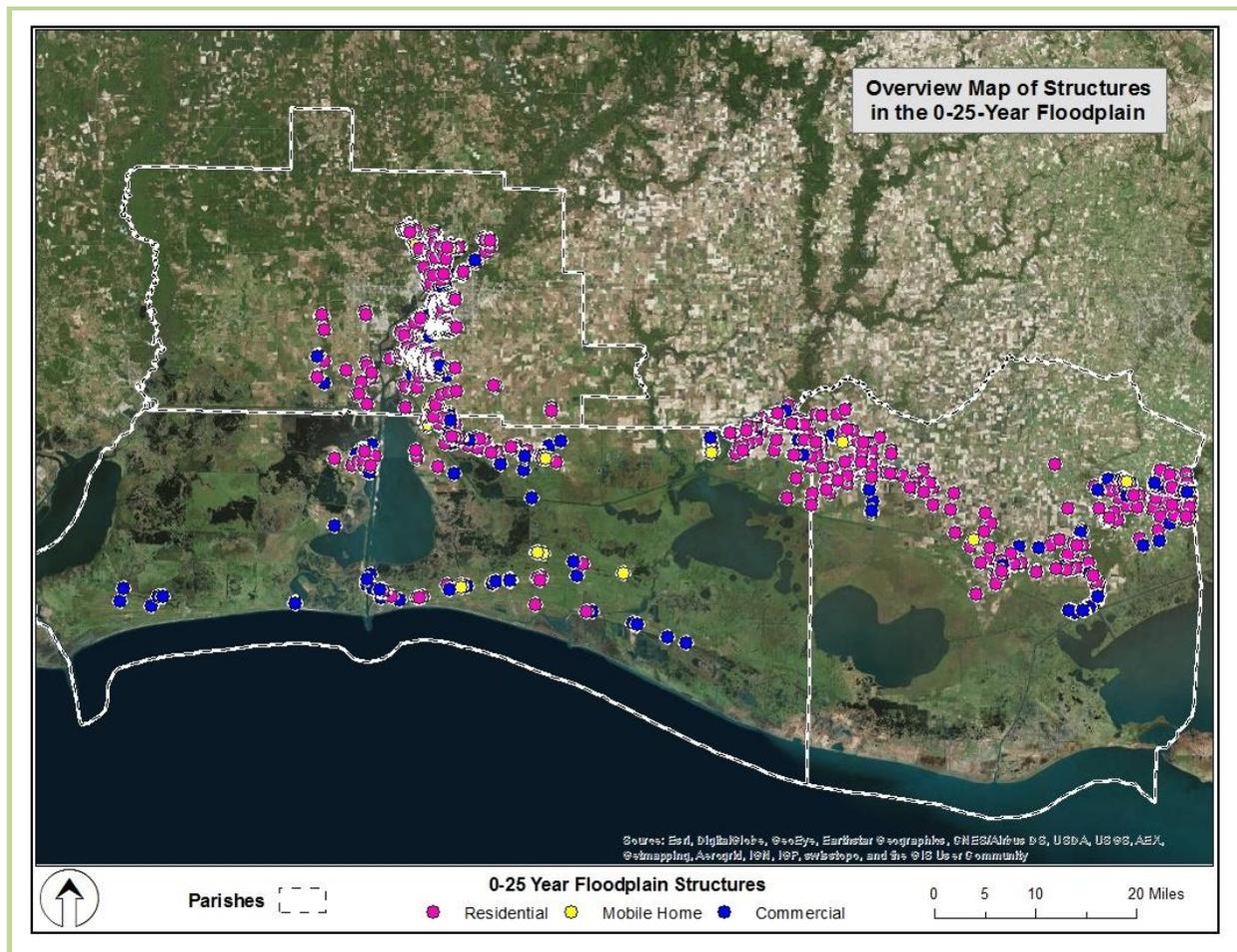


Figure 2. Nonstructural NED RP eligible structures in the 0-25-year floodplain.

Eligible structures would require additional structure specific analysis during the preconstruction engineering and design (PED) and construction phases to determine the best, most cost-effective measures to be employed for reducing risk of hurricane storm surge damage. Consequently, each eligible structure would be inspected by a floodplain engineer, structural engineer, cost engineer, civil engineer, environmental specialist, real estate specialist, and experts from other disciplines if necessary to determine the type of nonstructural measure to be employed for each structure. The inspection of individual structures has not been performed at this stage of the study.



Flood-proofing is generally described as any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate the risk of hurricane and storm surge flood damage to real estate or improved real property, water, and sanitation facilities or structures with their contents. The most common flood-proofing measures are: the elevation of structures; the removal of at-risk structures from floodplains and floodways; detached flood-proofing around structures through the construction of small localized storm surge risk reduction measures no higher than 6 feet above grade; and actions by local governments to strengthen local floodplain management regulations, building and zoning codes, and training and educating local floodplain management officials.

The Nonstructural NED RP consists of the following hurricane and storm surge flood damage risk reduction measures of which participation of eligible structures is voluntary:

1. Elevation to the 100-year base flood elevation based on year 2075 hydrology of eligible residential structures. If the required elevation is greater than 13 feet above ground level, the structure would be identified for voluntary acquisition. Tenants of structures that would be elevated are eligible for certain benefits in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs of 1970, Public Law 91-646, 84 Stat. 1894 (42 U.S.C. 4601), as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987, Title IV of Public Law 100-17, 101 Stat. 246-256; 49 Code of Federal Regulations 24; and HUD Handbook 1378.
2. Dry flood-proofing to the BFE generally means the use of a variety of techniques that make a structure waterproof and substantially impenetrable to floodwaters. For example, the walls, doors, windows, and other openings of eligible non-residential structures are made impermeable to water penetration.
3. Construction of localized storm surge risk reduction measures of less than 6 feet in height around industrial complexes and warehouses.

Hurricane and storm surge flood damage risk reduction actions taken to comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12) will be the obligation of the Non-Federal Sponsor (NFS), which will work to ensure development, compliance, and enforcement by municipal and parish governments in Cameron, Vermilion, and Calcasieu Parishes with local floodplain management plans and regulations, adoption of more stringent local floodplain regulations, adoption of more restrictive parish and municipal building codes, land use and zoning regulations, and other developmental controls. The NFS shall prevent obstructions or encroachments on the property being flood-proofed (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as the addition of facilities which might reduce the level of protection the Nonstructural NED RP affords, hinder operation and maintenance of the Nonstructural NED RP, or interfere with the Nonstructural NED RP's proper function.

Although the National Flood Insurance Program (NFIP) provides some relief for historic structures from having to comply with floodplain management requirements, the NFIP and FEMA recognize that historic structures should participate in mitigation measures that can reduce the impacts of flood damages. Under the NFIP regulations and the floodplain regulations of some of the communities in the study area, a historic structure is not eligible for elevation if the elevation or alteration through flood-proofing methods would preclude the structure's continued designation as an "historic structure" or would be damaging to the historical character or value of the structure as determined by the Louisiana State Historic Preservation Office.

Given the total Project cost and the estimated total investment required to complete the Nonstructural NED RP, it is anticipated that implementation of the Nonstructural Plan would occur over an approximate 14-year period (assuming funding of ~\$50 million/year). However, the scale of the Project is highly dependent upon the number of structures actually receiving nonstructural measures and the amount of funding allocated in any given year. The combined effects of the Biggert-Waters Insurance Reform Act, the modified conditions imposed by the Homeowner Flood Insurance Affordability Act, and the likelihood of property transfers provide an incentive for property owners to have their structures flood-proofed. In addition, the clear and present risk of future storm events, and subsequent disaster declarations and relief funding, indicate potential



situations for advantageously incentivizing and accelerating implementation. Awareness of and education about these issues would help lead to successful Project implementation, and would help ensure a successful Nonstructural Plan that meets the SWC study goals.

LDNR Specific Concerns about the NED RP

By electronic mail on January 21, 2016, the LDNR requested the USACE to provide specific responses to the below comments despite although several of these comments are covered in different sections throughout the document.

1. No NED activities will be conducted in wetlands. This includes work areas, access routes, staging areas, and borrow and discharge locations. Wetlands would be defined by a Corps of Engineers wetland delineation, or as identified on LDNR's SONRIS GIS system, or other suitable source.

RESPONSE: Concur. If wetlands would be impacted by NED construction, the structure would no longer be eligible for nonstructural measures. Will include revised language as requested up front. Also, I already have in report (responses to some specific Coastal Guidelines) that work would be done on previously disturbed residential and commercial lands and that we would not impact waters of the USA (which includes wetlands).

2. No NED work on cheniers will involve excavation; any necessary fill will be hauled in from approved borrow sites. Minor foundation excavation for purposes of raising a structure will be permissible provided the excavations are restored to preproject conditions.

RESPONSE: No NED work will take place on cheniers (excavation or fill). All NED measures will be confined to existing structure locations and previously impacted sites and any required borrow material would be from an approved site.

3. NED projects will not significantly alter the local hydrology.

RESPONSE: Concur. Part of the definition of a nonstructural measure is that it reduces human exposure to a flood hazard without altering the nature or extent of that hazard. Nonstructural measures are tightly confined to the flood-proofed structure and they will not impact local hydrology. Additional language would be included in the CD up front. I already mention in some Consistency guidelines that the NED plan would not impact hydrology.

4. NED projects which do not meet these criteria will require pre-construction coordination with LDNR Office of Coastal Management, and may require an individual consistency determination or other authorization.

RESPONSE: Concur. Responses to LDNR's above cited specific concerns has been provided in the general description section prior to responses of individual Consistency Guidelines.

Details of the Nonstructural NED RP

The following process shall apply to property owners who are willing and determined by the NFS to be preliminarily eligible to have their residential structures elevated:

- Property owners must execute an authorization for entry which would grant USACE and the NFS authorization to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing limited environmental testing and a hazardous, toxic, and radioactive waste (HTRW) assessment, evaluating the condition of the structure, determining elevation requirements, verifying the current elevation, performing an appraisal, and conducting other activities necessary for USACE to make a determination of structure eligibility;
- The property owner must submit satisfactory proof of ownership and a current Elevation Certificate;



- Title research and appraisals would be completed by the NFS. The property must have clear title. The property owner would be responsible to clear the title of all ownership issues and obtain any necessary subordination agreements from holders of liens, encumbrances, or third party interests at the property owner's sole expense; the failure to provide clear title shall result in a determination of ineligibility;
- An ASTM Phase I HTRW/Asbestos investigation (and if warranted, may be accompanied by additional HTRW investigations), inspections, surveys, and boundary monumentations would be completed. The land and the structure must be certified as "clean" by the appropriate State office before any Project funds may be expended. All asbestos must be abated and disposed of properly. Asbestos impacted by flood proofing would be removed at Project cost, while HTRW impacted by flood proofing must be remediated by the property owner prior to the initiation of the flood proofing work;
- After all inspections, investigations, assessments, and other activities are completed, a determination of eligibility for elevation would be made by USACE;
- A Flood-Proofing Agreement containing an easement(s) in favor of the NFS, that authorizes the Government, the NFS or their contractors to enter the property for purposes of implementing the flood-proofing action and for inspection and enforcement purposes, an agreement to hold harmless the NFS and the Government for any damages arising from the flood-proofing work, and a covenant running with the land shall be executed by all owners of the property. The covenant shall prohibit the conversion of any part of the structure located below the lowest habitable finished floor for human habitation and the alteration of the structure in any way to impede the movement of flood waters under the structure, as well as prohibiting the construction of any other structure in a manner that would impede the movement of floodwaters under the structure. The Flood-Proofing Agreement, together with the easement(s) and covenant running with the land, as well as any required subordination agreements, shall be recorded by the NFS in the public records of the Parish in which the property is located;
- After the Flood-proofing Agreement together with the easement and covenant and any required subordination agreements are recorded in the public records, the elevation of the structure would be commenced, completed, inspected, and after final approval by the District Engineer, a notice of construction completion would be issued to the NFS and the individual elevation project would be closed out as complete.

Elevation of eligible residential structures

Elevation of eligible residential structures would be performed "in place". The habitable floors would be raised to levels which would reduce risk to the residential structures from hurricane and storm surge flooding to reduce future losses by allowing the free movement of floodwaters beneath and around the raised structures. State and local building and zoning codes must be taken into consideration in the implementation process. Some zoning codes contain restrictions on "substantial improvements" to existing non-confirming structures which require that the entire structure be brought up to current building code requirements which may increase the costs beyond that of the elevation costs alone. In addition, zoning codes may have height restrictions for buildings in residential areas that might affect the ability of certain structures to be raised without obtaining a variance or other form of relief from the zoning code. Other eligibility considerations may include whether the structure is eligible for participation in another state, local, or Federal elevation program to avoid redundancy.

Dry flood-proofing of eligible non-residential structures

Dry flood-proofing consists of sealing all areas below the hurricane and storm surge flood damage risk reduction level of a structure to make it watertight and ensure that floodwaters cannot get inside by making walls, doors, windows and other openings impermeable to water penetration. Based on NFIP testing conducted at the Engineering Research and Development Center, dry flood-proofing can generally only be performed on the walls and portions of a conventionally built structure from the ground level to up to three feet. Walls are coated with sealants, waterproofing compounds, or plastic sheeting is placed around the walls and covered, and back-flow from water and sewer lines prevention mechanisms such as drain plugs,



standpipes, grinder pumps and back-up valves are installed. Openings, such as doors, windows, sewer lines and vents, may also be closed temporarily, with sandbags or removable closures, or permanently. Dry flood-proofing achieves hurricane and storm surge flood damage risk reduction but it is not recognized by the NFIP for any flood insurance premium rate reduction when applied to residential structures, and may not be used under the NFIP for new or substantially damaged buildings located in a Special Flood Hazard Area. A structural analysis of the wall strength is required to achieve higher level of risk reduction. Closure panels may be used at openings. This measure is viable for appropriate structures if design hurricane and storm surge flood depths are generally less than 3 feet, and hydrodynamic forces would also be a consideration. For structures with crawlspaces, the only effective way to dry flood-proof is to make the first floor impermeable to the passage of floodwater. Some common flood proofing measures include:

- Backflow valves;
- Closures on doors, windows, stairwells and vents--they may be temporary or permanent;
- Rearranging or protecting damageable property--e.g., relocate or raise utilities;
- Sump pumps and sub-drains; and
- Water resistant material; metal windows, doors and jambs; waterproof adhesives; sealants and floor drains.

The following process would apply to non-residential property owners who are willing and determined by the NFS to be preliminarily eligible to have their structures dry flood-proofed:

- Property owners who wish to have their structure dry flood-proofed must execute an authorization for entry using a form provided by the NFS which would grant USACE and the NFS authorization to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing limited environmental testing and a HTRW assessment, evaluating the condition of the structure, determining flood-proofing requirements, verifying the current elevation, performing an appraisal, and conducting other activities necessary to make for USACE to make a determination of structure eligibility;
- The property owner must submit satisfactory proof of ownership and a current Elevation Certificate;
- Title research and appraisals would be completed by the NFS. The property must have a clear title. The property owner would be responsible to clear the title of all ownership issues and obtain any necessary subordination agreements from holders of liens, encumbrances, or third party interests at the property owner's sole expense; the failure to provide clear title shall result in a determination of ineligibility;
- An ASTM Phase I HTRW/Asbestos investigation, inspections (and if warranted, may be accompanied by additional HTRW investigations), surveys and boundary monumentations would be performed. The land and the structure must be certified as "clean" by the appropriate State office before any Project funds may be expended. All asbestos must be abated and disposed of properly. Asbestos impacted by flood-proofing would be removed at Project cost, while HTRW impacted by flood proofing must be remediated by the property owner prior to the initiation of the flood proofing work;
- After all inspections, investigations, assessments, and other activities are completed, a determination of eligibility for dry flood-proofing would be made by USACE;
- All property owners shall execute a Flood-Proofing Agreement containing an easement(s) in favor of the NFS, that authorizes the Government, the NFS or their contractors to enter the property for purposes of implementing the flood-proofing action and for inspection and enforcement purposes, includes an agreement to hold harmless the NFS and the Government for any damages arising from the flood-proofing work, and a covenant running with the land prohibiting the removal or alteration of the flood-proofing measures or the construction of additions to the existing structure or new structures that are not flood-proofed in accordance with the Project purpose. The Flood-Proofing Agreement, together with the easement(s) and covenant running with the land, as well as any required subordination agreements, shall be recorded by the NFS in the public records of the Parish in which the property is located;



- Each structure that is dry flood proofed must have an approved sanitary disposal system and be in compliance with local and state health and building codes;
- After the Flood-proofing Agreement together with the easement and covenant and any required subordination agreements are recorded in the public records, the dry flood-proofing work would be commenced, completed, inspected, and after final approval by the District Engineer, a notice of construction completion would be issued by to the NFS and the individual dry flood-proofing project would be closed out as complete.

Construction of localized storm surge risk reduction measures of less than 6 feet in height around industrial complexes and warehouses

These voluntary measures are intended to reduce the frequency of flooding but not eliminate floodplain management and flood insurance requirements. Localized storm surge risk reduction measures less than 6 feet in height installed around industrial complexes and warehouses that are eligible for the Project. These risk reduction measures could be constructed of earth, concrete, masonry, or steel and placed around a single structure or a contiguous group of structures. Some local governments may have adopted floodplain management rules that exceed the minimum requirements of the NFIP, and may limit the ability of certain flood-proofing measures to be constructed if the effects of the localized storm surge risk reduction measures create the potential for drainage problems by displacing flood storage. The following process would apply to willing non-residential property owners who are determined by the NFS to be preliminarily eligible to have localized storm surge risk reduction measures of less than 6 feet in height constructed around their industrial complex and/or warehouse:

- Property owners who wish to have localized storm surge risk reduction measures constructed around their industrial complex and/or warehouse must execute an authorization for entry using a form provided by the NFS which would grant USACE and the NFS authorization to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing limited environmental and HTRW assessment, evaluating the condition of the land and structure, determining flood-proofing requirements, verifying the current elevation, performing an appraisal, and conducting other activities necessary for USACE to make a determination of eligibility for the construction of localized storm surge risk reduction measures;
- The property owner(s) must submit satisfactory proof of ownership and a current Elevation Certificate;
- Title research and appraisals would be completed by the NFS. The property must have clear title. The property owner(s) would be responsible to clear the title of all ownership issues and obtain any necessary subordination agreements from holders of liens, encumbrances, or third party interests at the property owner's sole expense; the failure to provide clear title shall result in a determination of ineligibility;
- An ASTM Phase I HTRW/Asbestos investigation (and if warranted, may be accompanied by additional HTRW investigations), inspections, surveys and boundary monumentations would be performed. The land and the structure must be certified as "clean" by the appropriate State office before any Project funds may be expended;
- After all inspections, investigations, assessments, and other activities are completed, a determination of eligibility would be made by USACE;
- All property owners shall execute a Flood-Proofing Agreement containing an easement(s) in favor of the NFS that authorizes the Government, the NFS or their contractors to enter the property for purposes of constructing the localized storm surge risk reduction measures and for inspection and enforcement purposes, includes an agreement to hold harmless the NFS and the Government for any damages arising from the construction of the localized storm surge risk reduction measures and a covenant running with the land prohibiting the removal or alteration of the localized storm surge risk reduction measures. The Flood-Proofing Agreement, together with the easement(s) and covenant running with the land and any required subordination agreements shall be recorded by the NFS in the public records of the Parish in which the property is located;
- After the Flood-proofing Agreement together with the easement and covenant and any required



subordination agreements are recorded in the public records, the localized storm surge risk reduction work would be commenced, completed, inspected, and after final approval by the District Engineer, a notice of construction completion would be issued by to the NFS and the individual flood-proofing project would be closed out as complete.

Hurricane storm surge damage risk reduction actions to be taken by the NFS in Calcasieu, Cameron, and Vermilion Parishes

Hurricane and storm surge flood damage risk reduction actions taken to comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12) would be the obligation of the NFS, which would work to ensure development, compliance, and enforcement by municipal and Parish governments in Cameron, Vermilion, and Calcasieu Parishes with local floodplain management plans and regulations, adoption of more stringent local floodplain regulations, adoption of more restrictive parish and municipal building codes, land use and zoning regulations, and other developmental controls. The NFS obligations in this regard include:

- Not less than once each year the NFS would inform affected interests of the extent of protection afforded by the Nonstructural NED RP;
- The NFS would participate in and comply with applicable Federal floodplain management and flood insurance programs;
- The NFS would comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a non-Federal interest to prepare a floodplain management plan within one year after the date of signing the Project Partnership Agreement, and to implement such plan not later than one year after completion of construction of the Nonstructural NED RP, or functional elements of the Nonstructural NED RP. The plan shall be designed to reduce the impacts of future hurricane and storm surge flood events in the project area, including but not limited to, addressing those measures to be undertaken by non-Federal interests to preserve the level of hurricane storm surge risk reduction provided by the Nonstructural NED RP. The NFS would provide an information copy of the plan to the Government upon its preparation; and
- The NFS would publicize floodplain information in the area concerned and would provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with hurricane and storm surge flood risk reduction levels provided by the Nonstructural NED RP.

Additionally, the NFS would be obligated to prevent obstructions or encroachments on the properties that have been flood-proofed (including prescribing and enforcing regulations to prevent such obstructions or encroachments) or the addition of facilities which might reduce the level of protection the Nonstructural NED RP affords, hinder operation and maintenance of the Nonstructural NED RP, or interfere with the Nonstructural NED RP's proper function.

Presently, Calcasieu Parish, Cameron Parish, and Vermilion Parish, including the cities and towns of Abbeville, Dequincy, Delcambre, Erath, Iowa, Kaplan, Lake Charles, Maurice, Sulphur, Vinton, and Westlake are all communities participating in the NFIP (See FEMA Community Status Book, Louisiana June 2015).

Residential Structure Elevation Criteria

Property owners who wish to have their residential structure elevated must currently own both the structure and the land on which the structure is located. Proof of ownership shall require a Certificate of Title and a Certificate of Mortgage that identifies the names of all of the owners of the property, as well as any third party interest holders and any holders of a lien or encumbrance against the property. Additionally, the property owner shall provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released. Residential structures that are eligible for elevation and the property owner(s) must meet the following eligibility criteria:

1. The structure is in a condition suitable for human habitation;



2. The property has a clear title;
3. The property is not located in a Regulatory Floodway or on Federal leased land;
4. The structure can be elevated to meet the required BFE so that the habitable floors are raised to levels which would protect the residential structures from storm surge flooding to reduce future losses from the likelihood of the 100-Year Flood Event to the extent practicable. However, in no event would a structure be raised greater than 13 feet above the ground level;
5. The structure and land is not contaminated with HTRW or materials;
6. The property owner is willing to enter into a Flood Proofing Agreement and execute the required easements and restrictive covenant running with the land;
7. Based on a visual assessment, the structure does not have signs of actual or potential significant structural defects, distress, or failure (i.e., no evidence of corrosion of steel framing or concrete; no water or insect damage to wood framing; no framing that is in obvious need of repair or replacement, no settlement, cracking, buckling, or collapse of the foundation; no damage to load bearing or masonry walls; no damage to veneer or siding, no evidence of unrepaired roof leaks, etc.);
8. The property owner does not owe taxes or other debts to any state or local governmental entity or to the Federal government;
9. The property is located in a community that participates in the NFIP and the property owner has a current Elevation Certificate;
10. The property owner has not previously received any disaster assistance for the elevation of the structure;
11. The structure complies with the building code and floodplain management codes under which the structure was originally permitted;
12. The property owner is willing to expend any costs that may be necessary in connection with the elevation of the structure which are not eligible costs;
13. There are no special considerations or unique circumstances which prohibit elevation;
14. The property owner agrees to insure the elevated home to an amount at least equal to the maximum limit of coverage made available with respect to the particular property, whichever is less, through the NFIP as long as the property owner holds title to the property; and
15. The property owner, and all successors in title to the property owner, agree to record notice to subsequent purchasers and lien holders in the appropriate jurisdiction's land records that includes the name of the current property owner (including book/page reference to record of current title, if readily available), a legal description of the property, and the following statement of flood insurance requirements:

This property has received Federal elevation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving federal disaster assistance with respect to this property in the event of a flood disaster. The property owner is also required to maintain this property in accordance with the flood plain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and the floodplain management regulations adopted by the community within which this property is located.

Failure to abide by the above conditions may prohibit the property owner and/or any subsequent purchasers from receiving Federal disaster assistance with respect to the property in the event of any future flood disasters. Residential structures which have been designated as a "Severe Repetitive Loss" property in accordance with FEMA criteria, are eligible for elevation.

If a property owner and/or the property owner's family member who is an occupant of the structure, is physically disabled or has mobility impairments such as in the case of elderly homeowners, a physician actively licensed by the state of Louisiana and in good standing must provide a written medical opinion and confirmation that special handicapped access is required before any means of special access may be included in the elevation. Multiple special access points are eligible for funding where necessary to meet state or local building code compliance. Where ramps are used to provide access, the ramps shall be designed to meet Federal



standards for slope and width. Where ramps are not technically feasible, a mechanical chairlift may be installed. Special access features shall be subject to state and local building and other applicable codes.

Tenants who reside in structures being elevated may be eligible for certain benefits in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs of 1970, Public Law 91-646, 84 Stat. 1894 ([42 U.S.C. 4601](#)), as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987, Title IV of Public Law 100-17, 101 Stat. 246-256; 49 Code of Federal Regulations 24; and HUD Handbook 1378 (collectively referred to as the URA). The URA provides for different replacement housing payments based on a displaced person's occupancy status and length of occupancy. Temporary relocation should not extend beyond one year before the person is returned to his or her previous unit or location. Any residential tenant who has been temporarily relocated for more than one year must be offered all permanent relocation assistance which may not be reduced by the amount of any temporary relocation assistance previously provided. Appropriate advisory services, including reasonable advance written notice of the following:

- Date and approximate duration of the temporary relocation;
- Address of the suitable decent, safe, and sanitary dwelling to be made available for the temporary period;
- Terms and conditions under which the tenant may lease and occupy a suitable decent, safe and sanitary dwelling in the building/complex upon completion of the project;
- Provisions of reimbursement for all reasonable out of pocket expenses incurred in connection with the temporary relocation;
- In addition to relocation advisory services, residential displaced persons may be eligible for other relocation assistance including relocation payments for moving expenses and replacement housing payments for the increased costs of renting or purchasing a comparable replacement dwelling; and
- All temporary housing costs must be approved in advance in writing by the NFS.

Nonstructural NED RP Implementation Methods

Traditional method. The “traditional method” of implementation is generally described in publications of the USACE National Flood Proofing Committee and Flood Risk Management Planning Center of Expertise. Under the traditional method, the USACE District utilizes a Federal procurement to obtain design and construction contractors for the various flood-proofing measures. The property owner enters into a Flood Proofing Agreement, which contains an easement for inspection and enforcement and a restrictive covenant running with the land in favor of the NFS and/or USACE. The form of the Agreement (and easement and covenant) would be prepared during PED and would be submitted to CEMVD and HQUSACE for review and approval. The Agreement would identify among other things, a “not-to-exceed” dollar amount, the Government contractor performing the flood proofing work, restrictions on the future development and alteration of the structure after the flood proofing work is completed, and requirements for compliance with local flood management regulations and/or the NFIP. The Agreement would require the property owners and their heirs and assigns, to covenant, warrant, and agree to forever release, discharge, indemnify, defend, and hold and save harmless USACE and the NFS (and their contractors) from and against any liability or any claim of any kind or nature whatsoever which might arise out of the work performed on the structure in connection with the Project, and any damages or injuries resulting either directly or indirectly from any elevation work and/or any flooding of the land or of the structure. In addition, the Agreement would authorize right of entry to the property and the structure by the NFS and USACE for the elevation work. The Agreement and the “Residential Structure Elevation Covenant Running With The Land” shall prohibit future alteration or new construction for human habitation on the property at an elevation lower than the predicted 2075 100-year BFE and shall contain the following restrictions: (a) upon completion of the elevation work, no part of the structure located below the level of the lowest habitable finished floor would thereafter be converted to living area for human habitation, or otherwise altered in any manner which would impede the movement of waters beneath the structure; (b) the area below the predicted 2075 100-year BFE shall be used solely for the parking of vehicles, limited storage, or access to the structure and would never be used for human habitation; (c) that mechanical,



electrical or plumbing devices shall not be installed below the BFE. These restrictions and the following statement must be specifically included in every deed and instrument that conveys or purports to convey title to or any interest in the land or structures thereon which is executed subsequent to the execution of the covenant:

This property has received Federal elevation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The property owner is also required to maintain this property in accordance with the flood plain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and the floodplain management regulations adopted by the community within which this property is located.

The executed Agreement would be recorded with an elevation certificate in the public records of the jurisdiction where the property is located.

The Government would procure contracts that would allow a contractor to perform flood-proofing work on multiple structures through a series of one or more task orders and who would be responsible for all work associated with the elevation from approval of the elevation plans for each structure to final inspection. A notice of construction completion would be provided at the appropriate time for each flood-proofed structure through an official letter from the District Engineer to the NFS. The NFS would maintain a copy of recorded elevation certificate and a certified copy of the original recorded Flood Proofing Agreement. The final inspection checklist shall be signed by the local floodplain administrator/coordinator. Upon completion of the flood-proofing of each structure, a Notice of Construction Completion is issued by USACE to the NFS, and the NFS is responsible for ensuring and maintaining compliance with any enforceable restrictions for the structure and property. The property owner is required to operate and maintain the integrity of their specific nonstructural measures.

A Certificate of Occupancy must be issued by a qualified building official to certify that the construction was properly completed. When the elevation work is completed, all structures must be covered by flood insurance in an amount at least equal to the costs of the flood-proofing work or to the maximum limit of coverage made available with respect to the property, whichever is less. Upon completion of the elevation, the property owner must provide USACE with an NFIP Elevation Certificate prepared by a professional land surveyor and verifying that the structure has been elevated to the required elevation and any elevation certificates showing the elevation level before the structure was elevated.

Elevation Costs

Eligible Elevation Costs. Property inspections would be conducted for eligible properties whose property owners have submitted the required proof of ownership and Elevation Certificate. The inspection does not guarantee acceptance of the structure for elevation. A determination that a structure is qualified for elevation would be made after all inspections, investigations, assessments, title research and all other work required to determine eligibility for elevations is complete and prior to the development of the elevation scope of work. If additional work is required as a condition of building permit issuance, and if such work is not listed as eligible above, the property owner would be required to provide funds equal to the amount of the cost to complete the required work. In no event shall the structure be elevated, if it is formally determined that the structure is not physically sound and capable of being raised safely.

Structure elevation work that are eligible costs shall include actual costs (itemized costs for each task), including but not limited to: design costs, costs of obtaining all required permits (i.e., zoning or land use approvals; environmental permits or required certifications; historic preservation approvals; and building permits), and costs of title searches, surveys, appraisal fees, Louisiana state sales tax, and costs for the following tasks:

- raising the structure;
- raising the roof and extending the walls of a side structure attached to the main structure (i.e., garage);



- raising mechanical equipment (i.e., air conditioner, furnace, water heater, electrical panel, fuel storage, valves, or meters);
- connecting, disconnecting, and extending utility connections for electrical power, fuel, incoming potable water, wastewater discharge;
- meeting access requirements of applicable building codes (i.e., stairs with landings, guardrails);
- creating large vent openings in the foundation and walls to meet requirements for flood water entry and exit;
- completing an Elevation Certificate to verify the as-built relationship between the lowest habitable finished floor and the Base Flood Elevation;
- only trees which restrict the demolition and reconstruction work on any structure may be removed;
- relocation assistance funds for displaced tenants are available to cover some expenses incurred during the actual raising of the structure for a period of no more than 90 days;
- debris removal (all demolition debris (hazardous and non-hazardous) shall be removed and taken to an approved landfill);
- site grading and site restoration including restoring landscaping to its preconstruction condition; and
- temporary site protection measures such as temporary construction fencing.

Ineligible Costs. The costs associated with the following tasks are ineligible:

- any work not strictly necessary for the safe completion of the structure elevation;
- any repair of existing deficiencies, including structural and system deficiencies;
- modifications or improvements to a septic system except for extension of lines from the raised structure to the existing system;
- cost for elevation of more than one foot above Base Flood Elevation;
- modifications to structures that are not attached to the structure;
- modifications to tubs, pools, spas, hot tubs, and related structures or accessories;
- modifications to decks and patios except for modifications that are expressly required by building codes (i.e., stairways and landing modifications);
- environmental site remediation costs are not eligible;
- costs to bring a non-conforming structure into compliance with current building code, housing code and/or other applicable codes;
- unless a satisfactory medical opinion is provided by a duly licensed physician that special access is required for a handicapped or mobility challenge property owner or the property owner's family member residing in the home, costs associated with special access improvements such as elevators, lifts, ramps, etc.;
- structures not considered the primary residence (i.e., detached garage, shed and/or barns); and
- if the elevation or alteration through flood-proofing methods would preclude the structure's continued designation as an "historic structure" or would be damaging to the historical character or value of the structure as determined by the Louisiana State Historic Preservation Office.

Methods for Prioritizing Nonstructural Elevation Work

The method for scheduling or prioritizing the implementation of voluntary non-structural elevation work would be determined during the period of PED. Any implementation of a decision on scheduling or prioritization would be subject to the availability of Federal funds. Some of the methods for scheduling or prioritizing non-structural elevation work that would be considered are as follows; however, additional methods of scheduling or prioritizing such work may be considered:

Clustering. If numerous property owners in a contiguous neighborhood or subdivision agree to participate, that particular area could be targeted for priority in structure elevation implementation. A focus on clustered properties can create a ranking hierarchy of which properties to address first. The size of a cluster would need



to be defined but could consist of zip codes or neighborhoods. This approach would rank efficiency as the main factor in determining which eligible properties should be prioritized.

Risk-Level. Willing property owners may not exist in clusters. In such cases, an alternative option is to focus on the willing property owners that exhibit the highest risk for flood damages. For example, if 1,000 property owners execute Flood-Proofing Agreements, the owners who reside in the 0-5-year floodplain would be prioritized for construction. Once these properties are elevated, the next highest-risk properties (6-10-year floodplain) would be targeted. This approach would rank risk exposure as the main factor in determining which eligible properties should be prioritized.

First-Come, First-Served. This approach would involve creating a list of eligible property owners and ranking them by how quickly their contracts and eligibility documentation are processed. This approach would help ensure that resources would be used effectively by focusing on properties that have owner support for the flood-proofing measures.

NATIONAL ECOSYSTEM RESTORATION (NER) PLAN

The National Ecosystem Restoration Recommended Plan (Alternative CM-4) is the Small Integrated Restoration Alternative. The NER RP is a comprehensive ecosystem restoration plan addressing land loss problems and ecosystem degradation. The NER RP is cost effective, and is the least cost comprehensive best buy plan. The NER RP would minimize land loss, enhance plant productivity by reducing major stressors, and reinforce and protect critical landscape features. The NER RP includes hydraulic dredging and placement of dredged borrow sediments for marsh restoration, placement of geotextile fabric and rock for shoreline protection/stabilization, and planting trees for chenier reforestation. All of the project measures are independent, but would work synergistically together with other existing ecosystem restoration projects in the area and facilitate hydrologic and geomorphic stability and resilience in the project area. The NER RP would cost approximately \$982 million. Marsh restoration measures would be constructed in Calcasieu, Cameron and Vermilion Parish at an approximate cost of \$622 million. Shoreline protection/stabilization measures and chenier reforestation measures would both be constructed in Cameron and Vermilion Parishes at approximate costs of \$360 million and \$246,000, respectively.

Table 1 provides a brief description of NER RP measures. **Figures 3** and **4** depict the locations of NER RP measures in the project area. **Table 2** presents the major changes to the NER RP between what was reported in the Revised Integrated Draft Report Consistency Determination as compared to the Integrated Final Report Consistency Determination. **Tables 3, 4, and 5** provide details regarding quantities for each NER RP measure. **Table 6** provides borrow site dimensions for marsh restoration.

There are a total of 49 ecosystem restoration features or measures:

- 9 Marsh Restoration measures
- 35 Chenier Reforestation measures;
- 5 Shoreline Protection measures
- The Calcasieu Ship Channel Salinity Barrier measure is being recommended for long-term study.
- The Cameron-Creole Spillway Salinity Control Structure measure is being recommended for long-term study.
- Two marsh restoration measures, located partially on U.S. Fish and Wildlife Service (USFWS) properties, are recommended for construction by the USFWS. Measure 124d Marsh Restoration at Mud Lake would be located on Sabine National Wildlife Refuge (NWR). Measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR (**Figure 5**).



Table 1. NER RP Measure Descriptions

Basin	Category	Measure	Description
Mermentau/Teche-Vermilion (Plan M-4)	Marsh Restoration	47a1	Marsh restoration using dredged material south of LA-82, about 4.5 miles east of Grand Chenier. 933 marsh acres would be restored and 88 acres (272 AAHUs) would be nourished from 3M cubic yards of dredged material with one nourishment cycle.
		47a2	Marsh restoration using dredged material south of LA-82, approximately 4.5 miles west of Grand Chenier. 1,297 marsh acres would be restored and 126 acres (381 AAHUs) would be nourished from 8.8M cubic yards of dredged material with one nourishment cycle.
		47c1	Marsh restoration using dredged material south of LA-82, approximately 4.5 miles west of Grand Chenier. 1,304 marsh acres (353 AAHUs) would be restored and 4 acres would be nourished from 8.6M cubic yards of dredged material with one nourishment cycle.
		127c3	Marsh restoration at Pecan Island, west of the Freshwater Bayou Canal and approximately 5 miles north of the Freshwater Bayou locks. 832 marsh acres would be restored and 62 acres (241 AAHUs) would be nourished from 7.3M cubic yards of dredged material with one nourishment cycle.
		306a1	Rainey marsh restoration at Christian Marsh, east of the Freshwater Bayou Canal and approximately 5 miles north of the Freshwater Bayou locks. 627 marsh acres would be restored and 1,269 acres (151 AAHUs) would be nourished from 8.1M cubic yards of dredged material with one nourishment cycle.
	Shoreline Protection/Stabilization	6b1	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 11.0 miles of Gulf shore protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore consisting of geotextile fabric and stone built to an 18 ft crest width. Measure would protect 2,140 acres (625 AAHUs) of brackish marsh.
		6b2	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 8.1 miles of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore using geotextile fabric and stone built to an 18 ft crest width. Measure would protect 1,583 acres (466 AAHUs) of brackish marsh
		6b3	Gulf shore protection/stabilization from Calcasieu River to Freshwater Bayou. 6.3 miles of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core. Located ~150 ft offshore using geotextile fabric and stone built to an 18 ft crest width. Measure would protect 1,098 acres (312 AAHUs) of brackish marsh.
		16b	Fortify spoil banks of Freshwater Bayou. Approximately 13.4 miles of rock revetment at three critical locations to prevent shoreline breaching. Rock revetment would be built to +3 ft with a 4 ft crown. Two maintenance lifts would be required. Measure would protect 1,288 acres (279 AAHUs) of brackish marsh.
	Chenier Reforestation	CR	13 separate chenier locations would be replanted. Approximately 435 seedlings per acre, at 10 ft x 10 ft spacing, with invasive species control incorporated.
Calcasieu/ Sabine (CM-4) (Includes all measures in this table)	Marsh Restoration	3a1	Beneficial use of dredged material from the Calcasieu Ship Channel. Located adjacent to the south shore of the GIWW west of the Calcasieu Ship Channel near Black Lake. Restore 599 marsh acres (191 AAHUs) with 5.3M cubic yards of dredged material with one renourishment cycle.
		3c1	Beneficial use of dredged material from the Calcasieu Ship Channel. Located adjacent to the eastern rim of Calcasieu Lake and situated within the Cameron-Creole Watershed area. 1,347 marsh acres would be restored and 743 acres would be nourished (607 AAHUs) from 9.4M cubic yards of dredged material with one renourishment cycle.
		124c	Marsh restoration at Mud Lake. Located adjacent and north of Highway 82 and east of Mud Lake. 1,908 marsh acres would be restored and 708 acres (500 AAHUs) would be nourished from 10.4M cubic yards of dredged material with one renourishment cycle.



Basin	Category	Measure	Description
		124d	Marsh restoration at Mud Lake. Located west of the Calcasieu Ship Channel and adjacent to the south rim of West Cove. 159 marsh acres would be restored and 448 acres would be nourished (4 AAHUs) from 1.4M cubic yards of dredged material with one renourishment cycle.
	Shoreline Protection/Stabilization	5a	Holly Beach Shoreline Stabilization Breakwaters. Construction of 8.7 miles of rock and low action breakwaters and is a continuation of existing breakwaters. Crown elevation of +3.5 ft with a crown width of 24 ft. Two maintenance lifts would be required. Measure would protect 26 acres (56 AAHUs) of saline marsh
	Chenier Reforestation	CR	22 separate chenier locations would be replanted. Approximately 435 seedlings per acre, at 10 ft x 10 ft spacing, with invasive species control incorporated.

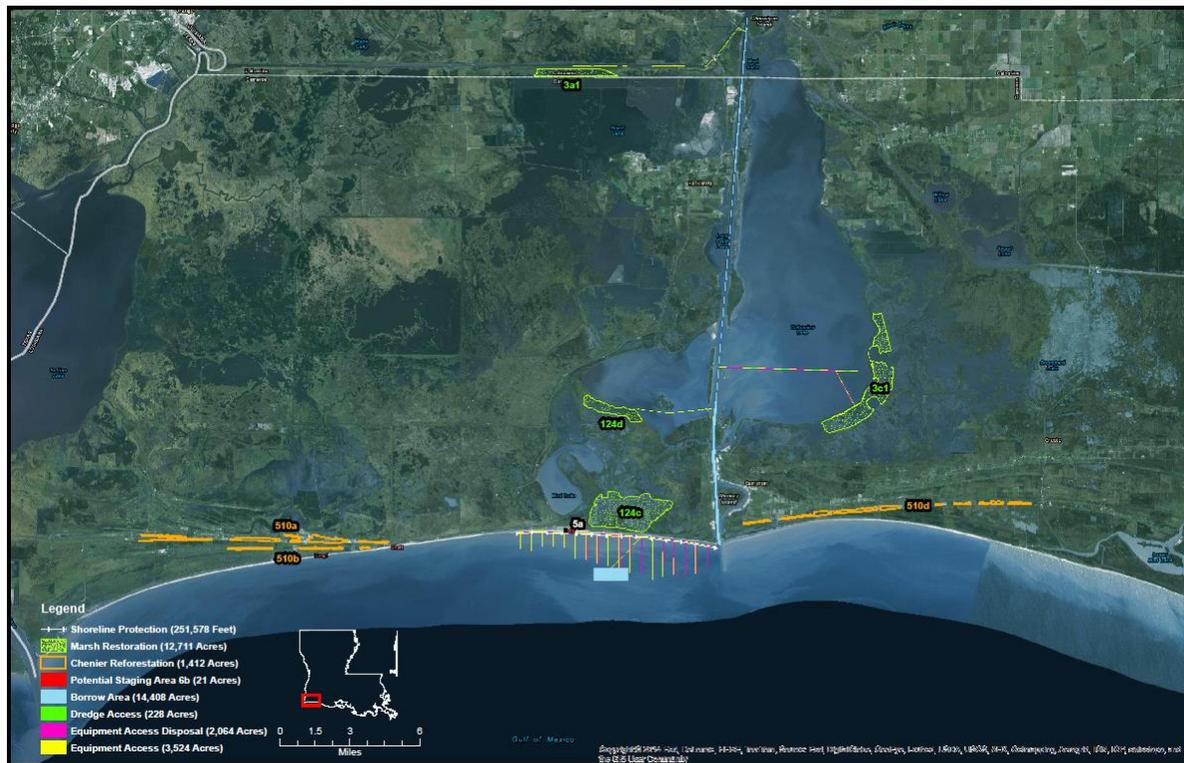


Figure 3. NER RP measures in western portion of study area.



Figure 4. NER RP eastern portion of study area.

Table 2. Major Changes to NER RP

Item	Revised Integrated Draft Report & EIS	Integrated Final Report & EIS
General	Draft NED Plan recommended for programmatic authorization. Draft NER Plan recommended for construction authorization	Both Nonstructural NED and NER RP recommended for construction authorization.
Measure 7	Included	Recommended for separate analysis, and removed from RP.
Measure 74a	Included	Recommended for separate analysis, and removed from RP.
Measure 16b	156 AAHU; 662 net acres	Corrected to 279 AAHU; 1,288 net acres
Measure 306a1	645 AAHU	Corrected to 151 AAHU
Measure 3c1	607 AAHU; 1,324 net acres	Removed CWPPRA benefits; corrected to 607 AAHU & 1,324 net acres.
Measure 124c	472 AAHU; 1,245 net acres	Removed CWPPRA benefits; corrected to 500 AAHU & 1,228 net acres.
Salinity Patterns		Hydro-salinity measures which could influence salinity patterns are being recommended for additional separate study.
Sediment Transport		Hydro-salinity measures which could influence sediment transport are being recommended for additional separate study.
Pipeline Placement		Additional information on dredge pipeline placement and use of marsh buggies.
Impoundment		Additional information on retention/exclusion dikes provided.
Oil, Gas, and Other Mineral Activities		Additional information on oil, gas, other mineral activities in area.
Mitigation Areas		Additional information included lists and graphic displays of existing mitigation projects located near NER RP measures.



Table 3. Details of the marsh restoration features of the TSP (See Appendix K for fact sheets and maps detailing each NER TSP marsh restoration feature).

Measure Number	Measure Name	Basin	Marsh Type	Acres Restored	Acres Nourished	Total Acres	Net Benefits (acres)	Average Annual Habitat Units (AAHU)	Borrow Volume (cy)	Borrow Area (acres)	Renourishment Volume (cy)	Initial Construction Costs (US \$)	TY 30 Renourishment (US \$)
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	599	-	599	454	191	5,339,286	139	1,000,000	\$66,593,748	\$17,759,470
3c1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	Calcasieu	Brackish	1,347	734	2,081	1,324	607	9,458,313	314	3,651,841	\$168,194,346	\$70,984,253
47a1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	933	88	1,021	895	272	3,022,782	1,716 ¹	1,500,000	\$105,234,982	\$21,239,680
47a2	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,297	126	1,423	1,218	381	8,831,084	1,716 ¹	1,500,000	\$97,348,440	\$17,585,890
47c1	Marsh Restoration Using Dredged Material South of Highway 82	Mermentau	Brackish	1,304	4	1,308	1,135	353	8,557,120	1,716 ¹	1,800,000	\$95,372,834	\$14,981,607
124c	Marsh Restoration at Mud Lake	Calcasieu	Saline	1,077	708	1,837	1,228	500	10,369,956	531	2,001,611	\$112,219,520	\$24,680,885
124d	Marsh Restoration at Mud Lake	Calcasieu	Brackish	159	448	607	168	4	1,420,943	378	1,200,000	\$28,882,160	\$17,636,205
127c3	Marsh Restoration at Pecan Island	Mermentau	Brackish	832	62	894	735	241	7,301,057	3,950 ²	781,000	\$61,662,041	\$15,683,451
306a1	Rainey Marsh Restoration Southwest Portion (Christian Marsh)	Mermentau	Brackish	627	1,269	1,896	743	151	8,128,181	3,950 ²	3,500,000	\$75,885,692	\$37,551,555
	Totals			8,175	3,439	11,666	7,900	2,700	62,428,722	7,028	16,934,452	\$811,393,763	\$238,102,996

3- This borrow source provides the sediment for all three restoration features but the full amount of available material will not be dredged each cycle. Therefore this total acreage is only counted once in the column total.

4- This borrow source provides the sediment for both restoration features but the full amount of available material will not be dredged each cycle. Therefore this total acreage is only counted once in the column total.

(Table 3 continued)



Measure Number	Measure Name	Impact to State Water Bottoms permanent (acres)	Floatation Footprint (acres)	Disposal Footprint (acres)	Dike Footprint (feet)	Dike Footprint (acres)	Impact to State Water Bottoms (temporary)	Dredge Pipeline Route (feet)	Dredge Pipeline Route (acres)	Piping Plover Critical Habitat (temporary impact acres)	Construction Period
3a1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	139	132	-	44,700	30.8	-	43,942	30	-	16 months
3c1	Beneficial Use of Dredged Material from Calcasieu Ship Channel	314	182	-	97,250	51.4	-	61,497	42	-	33 months
47a1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	68,300	47.0	-	35,519	24	0.14	23 months
47a2	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	41,000	28.2	-	30,898	21	0.14	24 months
47c1	Marsh Restoration Using Dredged Material South of Highway 82	1,716	47	-	35,200	24.2	-	29,858	21	0.14	23 months
124c	Marsh Restoration at Mud Lake	531	28	-	78,100	31.5	-	9,485	7	1.8	27 months
124d	Marsh Restoration at Mud Lake	314	182	-	32,500	22.4	-	21,452	15	-	9 months
127c3	Marsh Restoration at Pecan Island	3,950	110	-	46,000	31.7	-	37,074	26	-	12 months
306a1	Rainey Marsh Restoration Southwest Portion (Christian Marsh)	3,950	178	-	108,000	74.4	-	59,731	41	-	17 months
	Totals	14,347	953		551,50	341.6		329,456	227	2.2	---



Table 4. Details of the shoreline protection features of the TSP (See Appendix K for fact sheets and maps detailing each NER TSP shoreline protection feature).

Measure Number	Measure Name	Basin	Marsh Type	Net Benefits (acres)	Average annual habitat units (AAHU)	Shoreline Feature Length (ft)	Rock (tons)	Grade Rock (lbs)	Geotextile Fabric (sq yds)	Lightweight Aggregate (tons)	1st Maintenance Lift (tons)	2nd Maintenance Lift (tons)	Initial Construction Costs (US \$)	TY15 Maintenance (US \$)
5a	Holly Beach Shoreline Stabilization – Breakwaters	Calcasieu	Saline	26	56	46,014	860,540	250	386,460	0	129,081	86,054	\$144,044,021	\$16,786,222
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	2,140	625	58,293	868,480	250	447,830	479,150	86,848	0	\$198,480,921	NA
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	1,583	466	42,883	687,140	250	363,270	357,010	68,714	0	\$145,876,561	NA
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	Mermentau	Brackish	1,098	312	33,355	561,530	250	244,205	279,030	56,153	0	\$115,270,890	NA
16b	Fortify Spoil Banks of the GIWW and Freshwater Bayou	Mermentau	Brackish	1,288	279	70,983	617,640	250	516,860	0	92,646	61,764	\$36,018,600	\$5,695,468
	Totals			6,135	1,738	251,528	3,595,330		1,958,625	1,115,190	433,442	147,818	\$639,690,993	\$22,481,690



(Table 4 continued)

Measure Number	Measure Name	TY 25 Maintenance (US \$)	Impacts to State Water Bottoms (permanent)	Breakwater Footprint (feet)	Flotation Footprint* (acres)	Temporary Disposal Footprint* (acres)	Impact to State Water Bottoms (temporary acres)	Critical Habitat (acres)	Temporary Staging Area (acres)	Crown Elevation (feet NAVD88)	Crown Width (feet)	Slopes	Aprons (feet)	Construction Period
5a	Holly Beach Shoreline Stabilization – Breakwaters	\$11,247,740	57.4	57.4	479	462	941	-	-	3.50	24	2:1	10-ft front & 6-ft back	19 months
6b1	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$15,389,345	65.9	65.9	725	711	1436	-	21	3.25	18	2:1	10-ft front & 6-ft back	31 months
6b2	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$11,343,672	40.2	40.2	507	497	1004	-	21	3.25	18	2:1	10-ft front & 6-ft back	23 months
6b3	Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou	\$9,041,421	37.8	37.8	372	289	661	-	21	3.25	18	2:1	10-ft front & 6-ft back	18 months
16b	Fortify Spoil Banks of the GIWW and Freshwater Bayou	\$3,966,404	77.1	77.1	358	-	-	-	-	3.00	4	4:1	none	13 months
Totals		\$50,988,582	278.4	278.4	2,441	1,959	4,042	-	63	-	-	-	-	---

*- Access for heavy equipment to construct shoreline stabilization features consists of dredging a channel in open water to allow construction equipment to reach shoreline areas and placing the dredged material alongside the channel so the necessary channel depth is maintained. This material stored adjacent to the channel will be returned to the access channel after construction. These impacts are temporary and will naturally revert to existing conditions over time.

(Table 4 continued)

Linear Feet for Access and Temporary Disposal							
Measure	5a	6b1	6b2	6b3	16b*	Total Feet	Miles
Disposal	159,741	239,001	168,533	98,683	0	665,958	126.1
Equipment Access	161,957	244,857	173,050	126,542	0	706,406	133.8

*- No dredging or temporary disposal is anticipated for Feature 16b since Freshwater Bayou has adequate water depths to allow the necessary construction equipment access.



Table 5. Details of the chenier reforestation features of the TSP (see Appendix K for fact sheets and maps detailing the NER TSP chenier reforestation features).

Measure Name	Net Benefits (acres)	Benefits (AAHU)	Species	Total Fence Length (feet)	Fence Height (feet)	Planting Density (#/acre)	Spacing (feet)	Min. Survival % at Year 4*	Equipment Access Corridor (feet)	Equipment Access Corridor (acres)	State Water Bottoms (permanent)	State Water Bottoms (temporary)	Critical Habitat (acres)	Staging Area (acres)
Chenier Reforestation (CR)	1,413	538	Live Oak; Hackberry	150,000	7.5	435	10 x 10	57%	13,867	10	0	0	0	0

*- For a given planting, a minimum of 250 seedlings/saplings per acre must be present (with a 60 to 40 hard mast to soft mast ratio) at the end of the fourth year (i.e., Year 5) following successful attainment of the one-year survivorship criteria. Costs to ensure the minimum survival percent are considered 'construction' and will be cost-shared accordingly.



Table 5. Southwest Coastal Louisiana Study Borrow Site Dimensions

Marsh Restoration Measures	Length by Width (ft) ¹	Borrow Area (acres)	Borrow Area Cut depth (ft)	Access Route Length by Width (ft)	Access Route Area (acres)	Access Route Cut Elevation (ft) ²
3a1	USACE authorized channel dimensions			No dredging required for access		
3c1	USACE authorized channel dimensions			3,500 x 96	7.7	-8
47a1, 47a2, 47c1 ³	4,922 x 14,855	1,679	-15	10,000 x 96	22	-8
124c	2,937x7,880	531	-15	4,000 x 96	8.8	-8
124d	USACE authorized channel dimensions	USACE authorized channel dimensions		21,453 x 96	47.3	-8
127c3 ⁴	11,516 x 18,655	4,932	-15	1,400 x 96	2.2	-8
306a1 ⁴	11,516 x 18,655	4,932	-15	No dredging required for access		

¹- Impacts to the shoreline due to the off shore borrow areas would be modeled in the PED Phase. Presently all off shore borrow areas were delineated, based on previous engineering experience, to have no significant impacts to the existing shoreline.
²-All excavated access routes would be backfilled upon construction completion.
³-These restoration features will utilize the same borrow source for construction but at different times.
⁴ These restoration features will utilize the same borrow source for construction but at different times.

Marsh Restoration Measures

Proposed marsh restoration measures are located in fragmented, degraded and low quality interior fragmented marshlands throughout the entire study area. Each of the nine marsh restoration measures involves dredging sediments and disposing into shallow open water and/or fragmented marsh areas (minimum of 100 acres) that have water levels of less than 2 feet and that have been optimized to preserve or restore critical geomorphologic features to create new vegetated wetlands. The nine marsh restoration measures would initially create (8,175 acres) and nourish (3,439 acres) a total of approximately 11,666 acres, resulting in an estimated 7,900 net acres and 2,700 average annual habitat units (AAHUs) restored and nourished over the 50 year period of analysis. Dredged borrow sediment sources would be the Calcasieu Ship Channel and other nearby sites located immediately offshore in the Gulf of Mexico (see **Figures 3 and 4**, attached Fact Sheets and Appendix K in the Integrated Final Report). The locations of the nine marsh restoration measures include:

- three areas on the south side of Highway 82 approximately 4.5 miles west of Grand Chenier;
- Pecan Island west of the Freshwater Bayou Canal approximately 5 miles north of the Freshwater Bayou locks;
- Christian Marsh located east of Freshwater Bayou Canal and approximately 5 miles north of Freshwater Bayou locks;
- southern shoreline of GIWW west of Calcasieu Ship Channel near Black Lake;
- eastern rim of Calcasieu Lake within the Cameron-Creole Watershed;
- east of Mud Lake and north of Highway 82; and
- Mud Lake west of Calcasieu Ship Channel adjacent to southern rim of West Cove.

Although the period of analysis for all NER RP measures is 50 years, the operation, maintenance, repair, replacement, and rehabilitation costs (OMRR&R), the responsibility of the non-Federal Sponsor, is for as long as a project remains authorized as a Federal project. The AAHUs estimated for the NER measures are based on maintenance cycles described in **Tables 3, 4 and 5**, and the attached Fact Sheets.



Existing Coastal Restoration Projects Directly Impacted by the NER RP Measures: Many of the NER RP measures would be constructed in the immediate vicinity of Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) projects (**Figure 5**). **Table 7** lists the names of existing coastal restoration projects within the Southwest Coastal Louisiana project area corresponding to **Figure 5**. The following existing coastal restoration projects would be impacted by the implementation of the NER RP.

- Shoreline protection Measure 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and CS 33 (Cameron Parish Shoreline).
- Project CS-59 (Oyster Bayou Marsh Creation and Terracing) would be directly impacted by construction of marsh restoration NER RP measure 124c (**Figure 6**). Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation) would be directly impacted by construction of marsh restoration NER RP measure 3c1 (**Figure 7**). When overlap occurs, proposed NER RP measures would be constructed to avoid existing coastal restoration projects by construction of temporary containment/exclusion dikes that would contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing coastal restoration projects sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed.

Mitigation Projects Directly Impacted by NER RP Measures: Existing mitigation projects are also located within areas proposed for restoration under the NER RP. Existing mitigation projects, identified by Mitigation Manger Kelley Templet with the LADNR, Office of Coastal Management, were constructed by various companies (e.g., oil and gas, Union Pacific, and others) and are designed and constructed to offset unavoidable anticipated losses to wetlands from permitted activities. **Figure 8** and **Table 8** contains information about mitigation projects that occur within the project area. In most instances, these mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. Where overlap occurs, proposed NER RP measures would not be constructed until the mitigation projects satisfy their 20-year permitted obligations.

Fact Sheets located in Appendix K of the Integrated Final Report and EIS also contain additional NER RP measure details, description of construction equipment, and quantities and types of fill to be placed in wetlands.

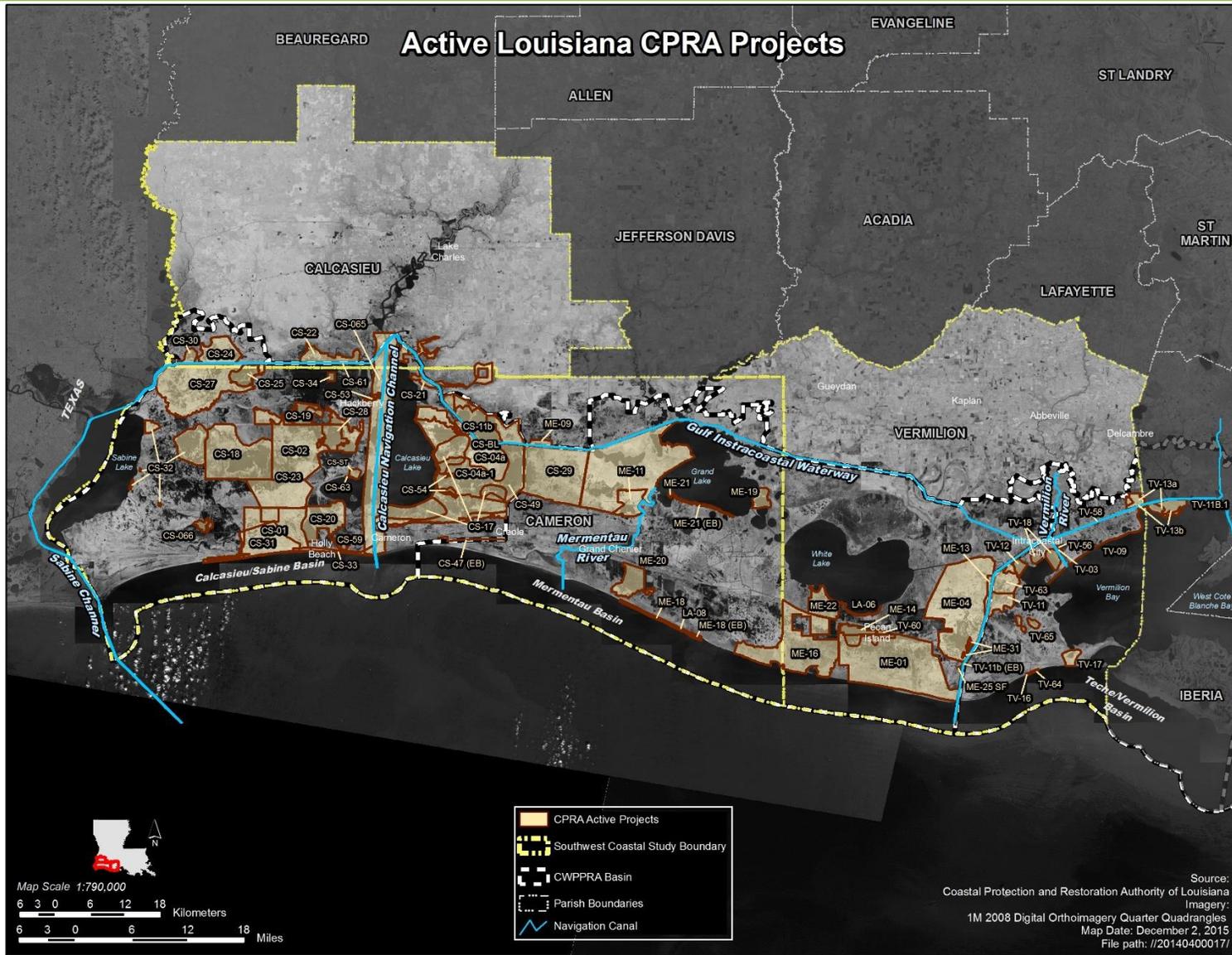


Figure 5. Ecosystem Restoration Activities in the Southwest Coastal Louisiana Project Area.



Table 7. List of Existing Coastal Restoration Projects Displayed in Figure 5.

CS-01 Holly Beach Breakwaters Project	CS-19 West Hackberry Vegetative Planting Demo	TV-11 Freshwater Bayou Bank Protection
CS-28-1 Sabine Refuge Marsh Creation, Cycle 1	CS-32 East Sabine Lake Hydrologic Restoration	ME-14 Pecan Island Terracing
CS-27 Black Bayou Hydrologic Restoration	CS-BL Blind Lake LA-06 SP Foundation	TV-11b (EB) EB - Freshwater Bayou Bank Stabilization
*CS-59 Oyster Bayou Marsh Creation and Terracing (impacted by NER RP Measure 124c)	Improvements Demo	ME-16 Freshwater Introduction South of Highway 82
CS-02 Rycade Canal Marsh Management	CS-20 East Mud Lake Marsh Management	TV-11B.1 Acadiana Gulf of Mexico Access Channel
CS-28-2 Sabine Refuge Marsh Creation, Cycle 2	CS-33* -impacted by NER RP Measure 5a Cameron Parish Shoreline Restoration	ME-18 Rockefeller Refuge Gulf Shoreline Stabilization
CS-27 Black Bayou Hydrologic Restoration	CS-ST Sabine Terraces LA-08 Bio-Engineered Oyster Reef Demo	TV-12 Little Vermilion Bay Sediment Trapping
CS-61 Brannon Ditch	CS-21 Highway 384 Hydrologic Restoration	ME-18 (EB) EB - Rockefeller Shoreline Protection Demo
CS-04a Cameron-Creole Maintenance	CS-34 Marcantel Supplemental Beneficial Use Disposal Area	TV-13a Oaks/Avery Canal Hydrologic Restoration, Increment 1
CS-28-3 Sabine Refuge Marsh Creation, Cycle 3	LA-06 SP Foundation Improvements Demo ME-01 Pecan Island Freshwater Introduction	ME-19 Grand-White Lakes Landbridge Protection
*CS-59 Oyster Bayou Marsh Creation and Terracing (impacted by NER RP Measure 124c)	CS-22 Clear Marais Bank Protection	TV-13b Oaks/Avery Structures
CS-63 Sabine Shellbank Stabilization	CS-47 (EB) EB - Trosclair Road Repairs	ME-20 South Grand Chenier Marsh Creation
CS-04a-1 Cameron-Creole Structure Automation	LA-08 Bio-Engineered Oyster Reef Demo	TV-16 Cheniere Au Tigre Sediment Trapping Demonstration
CS-28-4-5 Sabine Refuge Marsh Creation, Cycle 4-5	ME-04 Freshwater Bayou Wetland Protection	ME-21 Grand Lake Shoreline Protection
CS-61 Brannon Ditch	CS-23 Replace Sabine Refuge WCS	TV-17 Lake Portage Land Bridge
CS-65 Calcasieu Ship Channel Salinity Controls	CS-49 Cameron-Creole Freshwater Introduction	ME-21 (EB) EB - Grand Lake Shoreline Protection
CS-11b Sweet Lake/Willow Lake Hydrologic Restoration	ME-01 Pecan Island Freshwater Introduction	TV-18 Four Mile Canal Terracing and Sediment Trapping
CS-29 Black Bayou Culverts Hydrologic Restoration	ME-09 Cameron Prairie National Wildlife Refuge SP	ME-22 South White Lake Shoreline Protection
CS-63 Sabine Shellbank Stabilization	CS-24 Perry Ridge Shore Protection	TV-56 Four-Mile Canal Storm Surge Reduction Construction
CS-66 Cameron Meadows Marsh Creation and Nourishment	CS-53 Kelso Bayou Marsh Creation	ME-25 SF Marsh Creation Near Freshwater Bayou
CS-17 Cameron Creole Plugs	ME-04 Freshwater Bayou Wetland Protection	TV-58 Boston Canal
CS-30 GIWW - Perry Ridge West Bank Stabilization	ME-11 Humble Canal Hydrologic Restoration	ME-31 Freshwater Bayou Marsh Creation
CS-65 Calcasieu Ship Channel Salinity Controls	CS-25 Plowed Terraces Demonstration	TV-60 Front Ridge Chenier Terracing/Protection
CS-BL Blind Lake	*CS-54 Cameron-Creole Watershed Grand Bayou MC (impacted by NER RP Measure 3c1)	TV-03 Vermilion River Cutoff Bank Protection
CS-18 Sabine National Wildlife Refuge Erosion Protection	ME-09 Cameron Prairie National Wildlife Refuge SP	TV-63 Cole's Bayou Restoration
*CS-31 Holly Beach Sand Management (impacted by NER RP Measure 5a)	TV-65 Rainey Audubon Wildlife Sanctuary Earthen Terraces	TV-09 Boston Canal/Vermilion Bay Bank Protection
CS-66 Cameron Meadows Marsh Creation and Nourishment	ME-13 Freshwater Bayou Bank Stabilization	TV-64 Cheniere au Tigre
CS-ST Sabine Terraces		

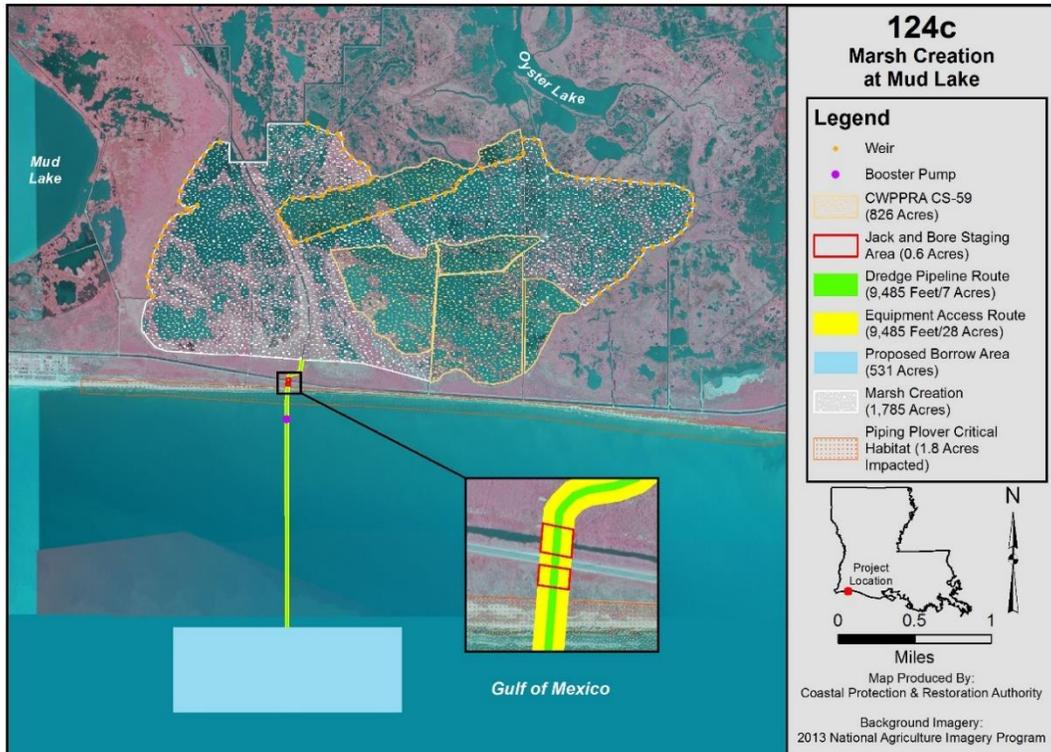


Figure 6. NER RP Measure 124c Overlap with Project CS-54 Cameron Creole Watershed Grand Bayou Marsh Creation.

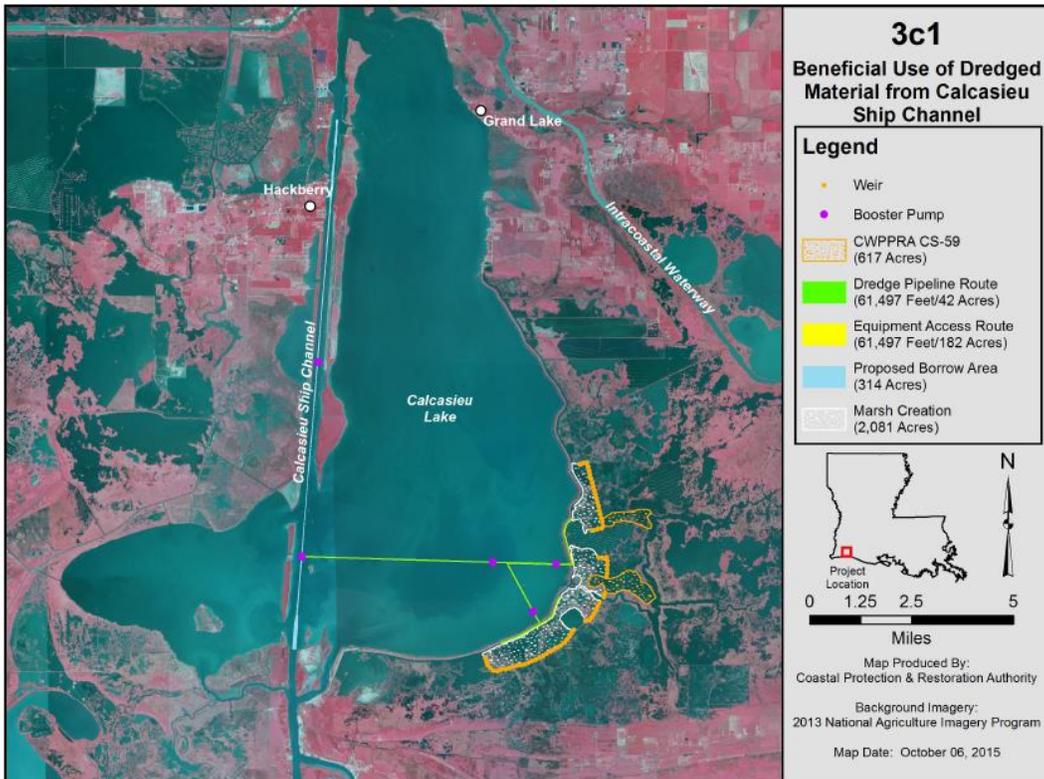


Figure 7. NER RP Measure 3c1 Overlap with Project CS-59 Oyster Bayou Restoration.

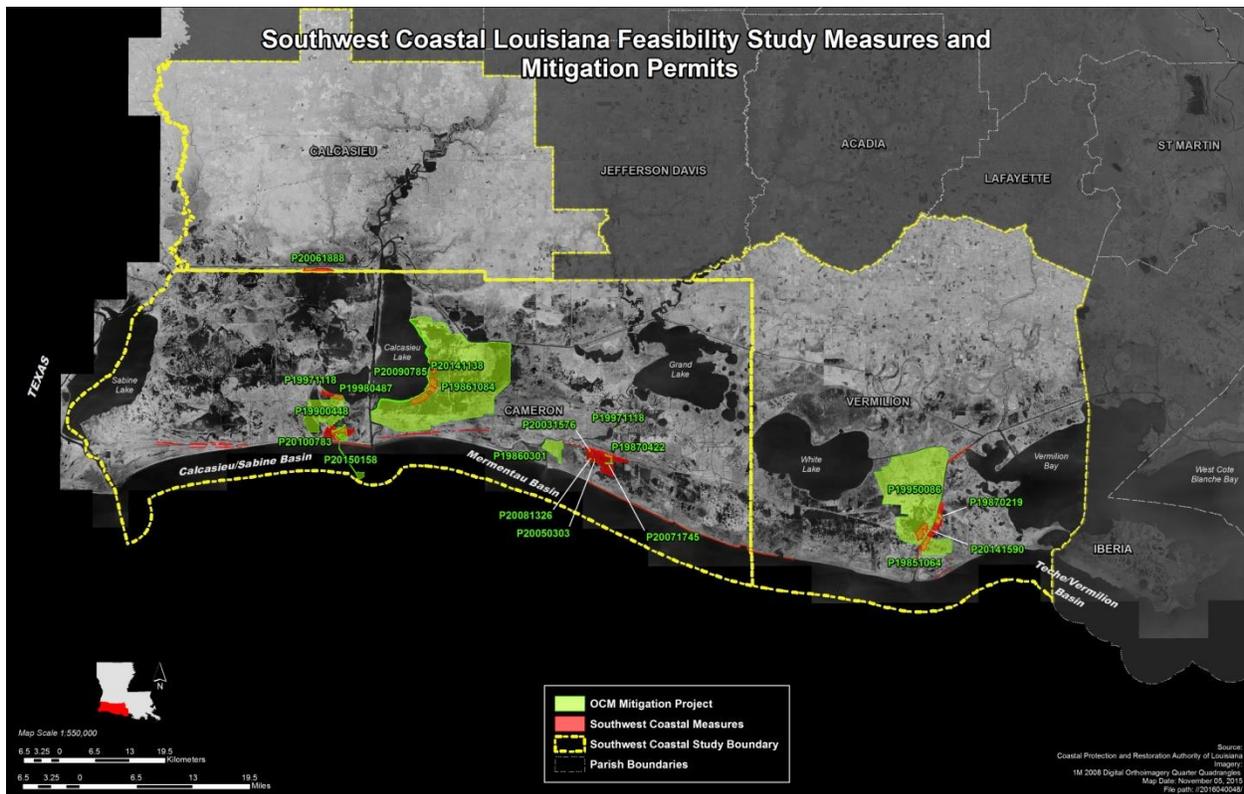


Figure 8. Permitted Mitigation Projects and Southwest Coastal Louisiana Study Measures.

Table 8: Mitigation Projects that Overlap with NER RP Features.					
Permit #	Description	NER RP Feature	Permittee or Owner	Expiration Date (permit completion date + 20 years)	Mitigation Project Description
Tier I Features					
P20061888	Terraces at GIWW N of Black Lake	3a1	Gulfport Energy Corporation	11/30/2032	Proposed construction of 5,358 linear ft of terraces south of the GIWW and north of Black Lake.
P19900448	Marsh Management Plan area	124d	Apache Louisiana Minerals	11/13/2016	Install and maintain water control structures for CTU 1 and 2. In CTU 1, 64,000 linear ft of smooth cordgrass plantings. In CTU 2, 32,470 linear ft of boundary levee are to be repaired. Various water control structures are to be repaired or replaced.
P19971118	West Cove Planting Project	124d	Union Pacific Resources	7/28/2022	West Cove Planting Project; 5,000 ft of plantings of <i>Spartina alterniflora</i> .
P19950086	Marsh Management Plan area	127c3	Vermilion Corporation	4/1/2021	Eight water control structures will be installed; a riprap levee will be constructed; five double flagged culverts and one earthen plug will be installed; two earthen plugs will be constructed.



Tier II Features					
P20141590	Spoil Placement	306a1	Hilcorp Energy Company	4/8/2040	Dredging of 15,430 cubic yards of native material to construct slip for the purpose of installing a drill rig, well protector and pilings. The dredged material will be pumped into a shallow pond adjacent to the proposed drill site using a temporary discharge pipe. An additional 301 cubic yards of material will be displaced to construct containment berms.
Tier III Features					
P20090785	Spoil disposal/levee restoration	3c1	Cameron Parish Drainage District #3	8/13/2034	Consists of five water control structures and 17.1 miles of earthen levee (CWPPRA Project CS-04A-L Phase II).
P20141138	Rip-rap Grand Bayou	3c1	CPRA	1/29/2040	Installation of 21,000 tons of riprap along the Calcasieu Lake Shoreline near the Peconi, Mangrove and Grand Bayou water control structures.
P19870422	Marsh Management Plan area	47a2	T. Bonsall	2/3/2023	Construction of a levee and multiple water control structures (South of Upper Mud Lake).
P20031576	Mitigation for P20031304	47a2	Kash Oil & Gas, Inc.	3/31/2029	Constructed 4,803 linear feet of terraces and planted with <i>Spartina alterniflora</i> .
P20081326	Mitigation for P20080132	47a2	PetroQuest Energy, L.L.C.	11/25/2033	Construct and plant 2,897 linear ft of wave dampening terraces that will capture re-suspended sediments and protect fragile shorelines by planting plugs of smooth cordgrass on both sides of constructed terraces.
P20071745	Mitigation for 20070883	47c1	Manti Operating Company	3/5/2025*	Construction of ten 500-foot terraces, eight 300-foot terraces, two 200-foot terraces and eight 400-foot terraces (6.1 acres). Plantings of <i>Spartina alterniflora</i> rows on each side of the terraces.

If project measures overlap with existing mitigation projects, the project measure would be constructed after the mitigation period of performance expires so that mitigation credits can be realized without interference. This would occur for measures 3a1, 47a1, and 47a2, which will be constructed in Tier III of the implementation plan, after the mitigation projects have concluded. All marsh restoration measures would have one future re-nourishment cycle at about year 30 following construction. The costs are included in the OMRR&R estimates and would be the responsibility of the local non-Federal Sponsor. OMRR&R plans have been developed for each restoration measure. The borrow areas and temporary access corridors for these activities would be the same as for initial construction, and the equipment used would be similar (hydraulic cutter-head dredge), although it may use a smaller dredge, since less material would be required. For shoreline protection, placement of additional rock in successive lifts would be required. This would use the same temporary access corridors as initial construction. Anticipated maintenance requirements are detailed in the attached Fact Sheets (see also Appendix K of the Integrated Final Report).



Monitoring results would be used to adjust anticipated maintenance cycles due to unanticipated changes in performance, especially within the first ten years, are determined. If a change in the anticipated maintenance cycles is warranted, modifications to this Consistency Determination would be submitted to the LDNR, Office of Coastal Management for consistency review. Coordination with LDNR and other appropriate regulatory agencies would be initiated prior to maintenance activities to ensure there were no deleterious impacts (e.g., to new nesting sites for bald eagles, etc.). See also attached Fact Sheets and Appendix K of the Integrated Final Report.

Shoreline Protection/Stabilization Measures

The five shoreline protection/stabilization measures, which span approximately 251,528 linear feet, would be located to reduce erosion of canal banks and shorelines in critical areas to protect adjacent wetlands and critical geomorphic measures. The shoreline protection/stabilization measures are anticipated to result in approximately 1,738 AAHUs and 6,135 net acres protected/stabilized. Construction of the five shoreline protection measures would require dredging floatation or access corridors to transport material to the shoreline protection site. Material dredged via mechanical dredge for access corridors for construction of the five shoreline protection features would be temporarily side-cast onto water bottoms immediately adjacent to the temporary access corridor. Following construction, the side-cast material would be returned to the temporary access corridor. Only measures associated with wetland areas capable of producing gains in excess of 100 net acres are included in the shoreline protection measures. See also attached Fact Sheets and Appendix K of the Integrated Final Report.

Chenier Reforestation

Chenier restoration consists of replanting of 435 seedlings per acre at 10 foot x 10 foot spacing, in 35 chenier locations. Approximately 1,413 net acres in Cameron and Vermilion Parishes would be reforested over the 50 year period of analysis, resulting in 538 AAHUs. Areas eligible for chenier restoration consist of areas greater than five feet in elevation and with low shoreline erosion rates, provided the existing canopy coverage is less than 50%, unless nearby development would prevent achieving study objectives. See also attached Fact Sheets and Appendix K of the Integrated Final Report.

Other Measure Recommendations

- The Calcasieu Ship Channel Salinity Barrier measure is being recommended for long-term study.
- The Cameron-Creole Spillway Salinity Control Structure measure is being recommended for long-term study.
- Two marsh restoration measures, located partially on USFWS properties, are recommended for construction by the USFWS, including: measure 124d Marsh Restoration at Mud Lake, located on Sabine National Wildlife Refuge (NWR) and measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel located on the Cameron Prairie NWR (**Figure 9**). While USACE believes that these features are worthy of recommendation, USACE has determined that these features would more properly be implemented by USFWS. Therefore, USACE will not seek authorization and funding of these features. Rather USACE will recommend to USFWS that it consider seeking independent Congressional authorization and funding for implementation of these features by USFWS.

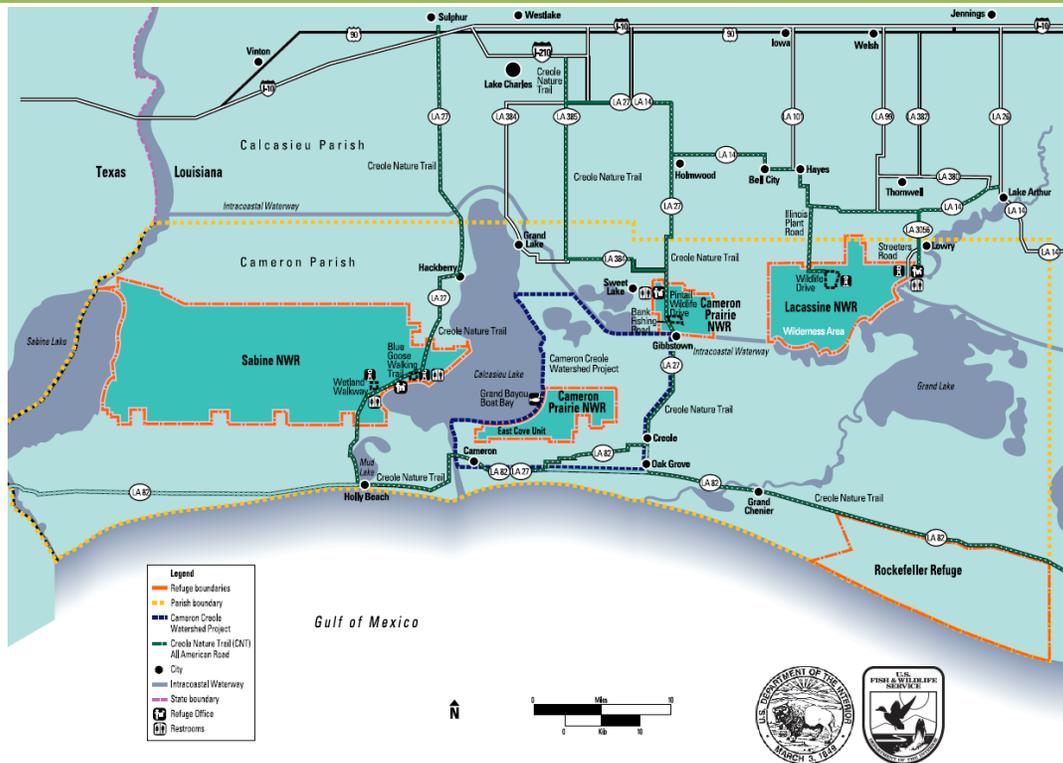


Figure 9. Sabine NWR and Cameron Prairie NWR.

NER RP Construction Tiering

NER RP measures were categorized into three tiers whereby Tier I measures would be constructed before Tier II, and Tier II measures constructed before Tier III. Tier I measures may be constructed simultaneously because they would not affect the construction of any nearby Tier I project measure. Shoreline protection measures would be constructed prior to marsh restoration to provide immediate protection of the storm-vulnerable marsh restoration measures. This approach contributes to the sustainability of the marsh restoration measures. Tier II project measures were so categorized because they utilize the same borrow or staging area, and/or construction of these measures would potentially interfere with construction of a Tier I project measure. Tier II project measures would be constructed contemporaneously as the construction of any one of these project measures would not affect any other project measure within this grouping. Tier III project measures were so categorized because they would utilize the same borrow or staging area, and/or interfered with construction of a Tier II project, and/or interfered with an existing mitigation project. Tier III project measures would be constructed contemporaneously if they would not affect construction of the other project measures within this grouping. In categorizing project measures, it was assumed that all construction funds would be available, multiple construction contracts could be let at one time, and an adequate supply of all materials to facilitate construction. More detailed design and analysis would be conducted during development of the Final EIS and during the Preconstruction Engineering and Design (PED) Phase. The construction schedule for completing all project measures is expected to last a total of about 60 months. Dredge spoil retention measures would be constructed prior to discharge of dredged material at marsh restoration sites. Timing and duration of construction for each measure is provided in **Tables 3, 4, and 5**.

Tier I Projects:

- Holly Beach Shoreline Stabilization – Breakwaters (5a)
- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b1)
- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bSE)
- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bNE)



- Fortify Spoil Banks of the GIWW and Freshwater Bayou (16bW)
- Beneficial Use of Dredged Material from the Calcasieu Ship Channel (3a1)
- Marsh Restoration at Mud Lake (124d)¹
- Marsh Restoration at Pecan Island (127c3)
- Chenier Ridges: Grand Chenier Ridge (416)²
- Restore Bill Ridge (509c)²
- Chenier Ridges: Cheniere au Tigre (509d)²
- Restore Blue Buck Ridge (510a)²
- Restore Hackberry Ridge (510b)²
- Restore Front Ridge (510d)²

Tier II Projects:

- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b2)
- Marsh Restoration at Mud Lake (124c)
- Rainey Marsh Restoration Southwest Portion (Christian Marsh) (306a1)

Tier III Projects:

- Beneficial Use of Dredged Material from the Calcasieu Ship Channel (3c1)¹
- Gulf Shoreline Restoration: Calcasieu River to Freshwater Bayou (6b3)
- Marsh Restoration Using Dredged Material South of Highway 82 (47a1)
- Marsh Restoration Using Dredged Material South of Highway 82 (47a2)
- Marsh Restoration Using Dredged Material South of Highway 82 (47c1)

Recommended for Further Study:

- Calcasieu Ship Channel Salinity Control Structure
- Cameron-Creole Spillway Structure

¹- Recommended for USFWS independent Congressional authorization and appropriation for construction by USFWS

²- Individual features that comprise the chenier reforestation measure



LOUISIANA COASTAL USE GUIDELINES

1. GUIDELINES APPLICABLE TO ALL USES

These and the following responses are at the feasibility level in nature and would be followed by more detailed analysis in subsequent NEPA documents and associated consistency determination(s).

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

Response: Acknowledged.

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

Response: Acknowledged.

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

Response: Acknowledged.

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

Response: Acknowledged.

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

Response: No violations or revocations of such grants or donations are expected.

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

a) type, nature and location of use.

Response: Acknowledged.

b) elevation, soil and water conditions and flood and storm hazard characteristics of site.

Response: Acknowledged.

c) techniques and materials used in construction, operations and maintenance of use.

Response: Acknowledged.

d) existing drainage patterns and water regimes of surrounding area including flow, circulation, quality, quantity and salinity; and impacts on them.



Response: Acknowledged.

e) availability of feasible alternative sites or methods – for implementing the use.

Response: Acknowledged.

f) designation of the area for certain uses as part of a local program.

Response: Acknowledged.

g) economic need for use and extent of impacts of use on economy of locality.

Response: Acknowledged.

h) extent of resulting public and private benefits.

Response: Acknowledged.

i) extent of coastal water dependency of the use.

Response: Acknowledged.

j) existence of necessary infrastructure to support the use and public costs resulting from use.

Response: Acknowledged.

k) extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited.

Response: Acknowledged.

l) proximity to, and extent of impacts on important natural features such as beaches, barrier islands, tidal passes, wildlife and aquatic habitats, and forest lands.

Response: Acknowledged.

m) the extent to which regional, state and national interests are served including the national interest in resources and the siting of facilities in the coastal zones as identified in the coastal resources program.

Response: Acknowledged.

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

Response: Acknowledged.

o) likelihood of, and extent of impacts of, resulting secondary impacts and cumulative impacts.

Response: Acknowledged.

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

Response: Acknowledged.

q) extent of impacts on navigation, fishing, public access, and recreational opportunities.

Response: Acknowledged.

r) extent of compatibility with natural and cultural setting.



Response: Acknowledged.

s) extent of long term benefits or adverse impacts.

Response: Acknowledged.

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

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

Response: The Nonstructural NED RP would not alter freshwater flows and would have no reductions in the natural supply of sediments or nutrients to the coastal system. Rather, the Nonstructural NED RP would reduce the risk of damages resulting from hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. Best available practical techniques and best management practices (BMPs) would be used to avoid, minimize and reduce the potential for affecting or reducing the natural supply of sediments and nutrients into the coastal system.

The NER RP measures would restore and nourish transitional estuarine marsh, provide shoreline protection for back marsh areas, and reforest natural chenier ridges. The NER RP would use the best available practical techniques and BMPs for restoration would be used to avoid, minimize and reduce the potential for affecting or reducing the natural supply of sediments and nutrients into the coastal system.

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

Response: The Nonstructural NED and NER RP are not expected to have any adverse economic impacts on the locality of the use or on nearby governmental bodies. No industries, jobs, or other economic activities are likely to be adversely impacted by the proposed action.

The Nonstructural NED RP would use the best available practical techniques and BMPs to avoid, minimize and reduce the potential for adverse economic impacts of providing risk reduction of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. Implementing the Nonstructural NED RP would reduce adverse economic impacts by reducing administrative costs and claims to the Federal Flood Insurance Program, under the FEMA, for repetitive flood insurance claims. This estimate is based upon present information and could change during implementation of the Nonstructural NED RP.

The NER RP would use the best available practical techniques and BMPs for implementing each measure. NER RP measure sites, dredge borrow sites, and temporary access corridors would be temporarily unavailable and restricted from human uses during construction, dredging and implementation. However, any restrictions of human use would be temporary and only during dredging and construction. Following construction, the NER RP measures would be available for human uses. The NER RP would reforest cheniers which provide important stopover habitat for migrating Neotropical birds that are sought by birdwatchers. Restoring, nourishing and protecting important, essential and in some instances critical transitional, estuarine marsh habitats used by various terrestrial and aquatic organisms for shelter, nesting, feeding, roosting, cover, nursery, EFH and other life requirements would likely lead to localized increased use by these organisms as well as potential localized increase in productivity. Consequently, localized increases in estuarine aquatic organisms could be utilized for recreational and commercial fishing which could have localized positive economic effects. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction



to avoid and minimize potential adverse economic impacts on the locality of use and affected government bodies.

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

Response: The Nonstructural NED RP would not discharge inorganic nutrient compounds into coastal waters because of the remoteness of identified structures from coastal waters. Rather, the Nonstructural NED RP would reduce damages resulting from hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. Construction methods would employ the use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for detrimental discharges of inorganic nutrient compounds into coastal waters.

Activities associated with implementing the NER RP measures includes dredging temporary access corridors, dredging and placement of borrow sediments at the nine marsh restoration measures, and placement of geotextile fabric and rock for the five shoreline protection measures could cause temporary and localized increases in turbidity and total suspended sediments, which may contain inorganic nutrient compounds. **Tables 3, 4, and 5** provide estimated construction time frames for each NER RP measure. However, the best available practical techniques and BMPs would be used to avoid, minimize and reduce the potential for detrimental discharges of inorganic nutrient compounds into coastal waters. Coastal waters at each NER RP measure site would return to levels of inorganic nutrient compounds similar to those exhibited prior to construction. Chenier reforestation would have no such effects as these sites are located away from coastal waters.

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

Response: The Nonstructural NED RP would not result in alterations in the natural concentration of oxygen in coastal waters because of the remoteness of identified structures from coastal waters. Rather, the Nonstructural NED RP would reduce damages from hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. In addition, the use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for alterations in the natural concentration of oxygen in coastal waters.

Activities associated with implementing the NER RP measures includes dredging and construction of temporary access corridors, dredging and placement of sediments for nine marsh restoration and nourishment measures, and construction of the five shoreline protection measures could result in a localized, but temporary, decrease in dissolved oxygen concentrations when the biological and the chemical content of the suspended material reacts with the dissolved oxygen in the water. This may result in oxygen depletion. The extent and persistence of these adverse impacts caused by discharges depend upon the relative increase in suspended particulates above the amount occurring naturally, the duration of the higher levels, the current patterns, water level, and fluctuations present when such discharges occur, the volume, rate, and duration of the discharge, particulate deposition, and the seasonal timing of the discharge. However, any such effects are expected to be minor and would occur only during actual dredging and construction activities. **Tables 3, 4, and 5** provide estimated construction time frames for each NER RP measure. Shortly after dredging and construction is completed, dissolved gases and dissolved oxygen levels would return to levels similar to those before construction. The best available practical techniques and BMPs would be used to avoid, minimize and reduce the potential adverse alterations of dissolved gases such as dissolved oxygen in coastal waters. Chenier reforestation measures would have no effects or alterations to the natural concentration of oxygen in coastal waters due to location of these measures from coastal waters and use of the best available practical techniques and BMPs during construction activities.



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

Response: The Nonstructural NED RP would not destroy or adversely alter streams, wetlands, tidal passes, inshore waters and water bottoms, beaches, dunes, barrier islands, or other natural biologically valuable areas or protective coastal features because of the remoteness of identified structures from coastal waters. Rather, the Nonstructural NED RP would reduce damages resulting from hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. In addition, the use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for destruction or adverse alterations of streams, wetland, tidal passes, inshore waters and water bottoms, beaches, dunes, barrier islands, or other natural biologically valuable areas or protective coastal features. The best available practical techniques and BMPs would be used to avoid, minimize and reduce the potential destruction or adverse alteration of biologically valuable or protective coastal features.

Water bottoms at the NER RP dredge borrow sites would temporarily be altered due to dredging. However, these areas would naturally refill due to the high energy Gulf of Mexico, navigation channel dynamics and other natural processes of sediment movement throughout the ecosystem. Shallow open water bottoms at the nine marsh restoration sites would be converted to transitional estuarine marsh habitat which is currently being eroded and lost throughout coastal Louisiana and the project area. Placement of geotextile fabric and rock for shoreline protection measures, by design, would permanently alter water bottoms in these areas to reduce wave erosion. Chenier reforestation would have no destructive or adverse alterations to the natural biologically valuable or protective coastal features. Rather, chenier reforestation would use the best available practical techniques and BMPs for reforestation which would provide ecologically important habitat to migrating neotropical birds, resident bird populations as well as other wildlife that utilize chenier forest habitats. In addition, chenier reforestation would help maintain natural chenier coastal features thereby restoring the protective nature of these features. The NER RP would use the best available practical techniques and BMPs would be used to avoid, minimize and reduce potential adverse destruction or alterations of natural biologically valuable areas or protective coastal features.

f) adverse disruption of existing social patterns.

Response: Disruptions of existing social patterns due to implementing the Nonstructural NED RP would be primarily associated with the construction activities:

1. Elevating identified structures to the 100-year base flood elevation based on year 2075 hydrology of eligible residential structures. If the required elevation is greater than 13 feet above ground level, the structure would be identified for voluntary acquisition.
2. Dry flood-proofing to the BFE generally means the use of a various techniques that make a structure waterproof and substantially impenetrable to floodwaters. For example, the walls, doors, windows, and other openings of eligible non-residential structures are made impermeable to water penetration.
3. Construction of localized storm surge risk reduction measures of less than 6 feet in height around industrial complexes and warehouses.

The voluntary nature of implementing the Nonstructural NED RP is anticipated to result in construction on a structure-by-structure basis. This would help to avoid, minimize and reduce the potential for disruption of existing social patterns. Nevertheless, construction activities could cause localized, but in most instances temporary impacts including: disruption and congestion of vehicular traffic patterns in the immediate vicinity of structures undergoing risk reduction; noise; dust; diesel and gas engine fumes emissions; vibration; emissions of construction wastes; greenhouse gas emissions; increased local electricity and fuel consumption; and local increases in the number of vehicles, construction equipment and workers in the vicinity of those structures undergoing risk reduction. However, the best available practical techniques and BMPs would be used to avoid,



minimize and reduce potential adverse disruption of social patterns. Following temporary construction of voluntary flood risk reduction measures, these areas would once again be available for social patterns similar to pre-construction social patterns.

The NER RP measure sites would temporarily and locally be unavailable for social patterns (primarily water-related activities) during construction and dredging activities. This would include: dredging activities at the borrow sites, dredging temporary access corridors and placement of dredged sediments at the nine marsh restoration sites, construction associated with the five shoreline protection sites and planting and invasive species control activities during the chenier reforestation. The NER RP would use the best available practical techniques and BMPs would be used to avoid and minimize adverse disruption of existing social patterns from implementing the NER RP measures. Following construction, these areas would once again be available for social patterns similar to pre-construction social patterns.

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

Response: Implementing the Nonstructural NED RP measures would not alter the natural temperature regime of coastal waters due to the remoteness of the Nonstructural NED RP measures from coastal waters. Rather, the Nonstructural NED RP would reduce damages resulting from hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for alterations of the natural temperature regime of coastal waters.

Implementing the NER RP measures would not result in long-term alterations of the natural temperature regime. However, dredging and construction of the temporary access corridors, the nine marsh restoration measures, placement of geotextile fabric and rock for the five shoreline protection measures could cause temporary increases in turbidity and total suspended sediments which could lead to temporary and localized increases in water temperatures at the dredging and construction sites. **Tables 3, 4, and 5** provide estimated construction time frames for each NER RP measure. However, temperatures would return to pre-construction conditions following construction and dredging activities. Chenier reforestation and implementing the Nonstructural NED RP would have no effects or alterations to the natural concentration of oxygen in coastal waters. The 35 chenier restoration measures would not involve dredging or placement of materials into coastal waters. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts to the natural temperature regime of coastal waters.

h) detrimental changes in existing salinity regimes.

Response: Implementing the Nonstructural NED RP measures would not result in any detrimental changes in existing salinity regimes due to the remoteness of the Nonstructural NED RP measures from coastal waters. Rather, the Nonstructural NED RP would reduce hurricane and storm surge by 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for detrimental changes in existing salinity regimes.

The NER RP has a total of 49 ecosystem restoration measures. Dredging the temporary access corridors would not result in detrimental changes in existing salinity regimes. The nine marsh restoration measures would initially create (8,175 acres) and nourish (3,439 acres) a total of approximately 11,666 acres, resulting in an estimated 7,900 net acres and 2,700 AAHUs restored and nourished over the 50 year period of analysis. Dredged borrow sediment sources would be the Calcasieu Ship Channel and other nearby sites located immediately offshore in the Gulf of Mexico (see **Figures 3 and 4**, attached Fact Sheets and Appendix K in the Integrated Final Report).



The location and size of these marsh restoration measures is not sufficient to change existing salinity regimes. Six of the NER RP marsh restoration measures would utilize borrow material from offshore in the Gulf of Mexico. Measure 124c would restore marsh in a saline marsh zone, therefore no adverse short or long-term impacts are anticipated. Measures 47a1, 47a2, 47c1, 127c3 and 306a1 would restore marsh in a brackish marsh zone. There may be a temporary and localized increase in the salinity of the surrounding areas from the use of more dredged saline offshore waters and sediments used for marsh restoration. However, the proposed borrow area for 127c3 and 306a1 is between the mouth of Freshwater Bayou and Southwest Pass, where freshwater influences, especially in the spring, would keep the salinity lower than typical Gulf of Mexico salinity (≈ 35.6 ppt). Brackish and saline marsh vegetation typically overlap their respective zones throughout coastal Louisiana. Although, initial marsh re-vegetation may be more saline species, as conditions freshen to a brackish regime, the vegetation would likely transition to those species typical of brackish marsh assemblages.

The five shoreline protection measures would provide a total 251,528 linear feet of protection for 6,135 net acres of marsh with 1,738 AAHUs over the 50 year period of analysis. The locations, size and configuration of the five shoreline protection measures is not sufficient to result in any detrimental changes in existing salinity regimes.

The 35 chenier reforestation measures would not impact waters of the United States and therefore would not change existing salinity regimes.

The Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measure are both being recommended for long-term study. Part of the reasoning for recommending these measures for long-term study is because of their potential for altering salinity regimes. These measures would not be constructed without the authority for additional study, NEPA analysis and associated environmental compliance coordination and permits. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts to existing salinity regimes.

i) detrimental changes in littoral and sediment transport processes.

Response: Implementing the Nonstructural NED RP measures would not result in any detrimental changes in littoral or sediment transport processes due to the remoteness of the Nonstructural NED RP measures from coastal waters. Rather, the Nonstructural NED RP would reduce damages resulting from hurricane and storm surge by: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. In addition, the use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for detrimental changes in littoral and sediment transport processes.

The NER RP has a total of 49 ecosystem restoration measures. Dredging the temporary access corridors would not result in detrimental changes in littoral or sediment transport processes. The nine marsh restoration measures would initially restore (8,175 acres) and nourish (3,439 acres) for a total of approximately 11,666 acres, resulting in an estimated 7,900 net acres and 2,700 AAHUs restored and nourished over the 50 year period of analysis. Dredged borrow sediment sources would be taken from the Calcasieu Ship Channel and other nearby sites located immediately offshore in the Gulf of Mexico (see **Figures 3 and 4**, attached Fact Sheets and Appendix K in the Integrated Final Report). The location and size of offshore borrow sites for marsh restoration measures 124c, 47a1, 47a2, 47c1, 127c3, and 306a1 is not anticipated to affect the wave climate at the shoreline. Research conducted for the LCA – Maintain Land Bridge between Caillou Lake and Gulf of Mexico and LCA – Stabilize Shoreline at Point Au Fer Island studies using the STWAVE model indicated that no significant impacts from wave refraction would occur.

The five shoreline protection measures would provide a total 251,528 linear feet of protection for 6,135 net acres of marsh with 1,738 AAHUs over the 50 year period of analysis. The locations, size and configuration of the five shoreline protection measures is not sufficient to result in any detrimental changes in existing salinity regimes. However, often of concern with regard to potential to cause changes in littoral or sediment transport



processes is the design of offshore breakwater measures (e.g., shoreline protection measures 5a, 6b1, 6b2, and 6b3). Shoreline Measure 5a would extend from the western Calcasieu Ship Channel jetty to the existing breakwaters of the existing coastal restoration project CS-31 Holly Beach Sand Management project. The introduction of sands for the project CS-33 Cameron Parish Shoreline Restoration project increased the sediment budget for this area, so that downstream sediment starvation is not expected to be a problem. Additionally, the existing jetty and shipping channel already cause disruption to the littoral and sediment transport in this area from the east. Shoreline protection measures 6b1, 6b2, and 6b3 would be constructed offshore from the Gulf of Mexico shoreline near Rockefeller Refuge. The Refuge is characterized as fine-grained marsh sediment, with a veneer of crushed shell. The fine-grained sediment does not contribute to the littoral sediment transport.

The 35 chenier reforestation measures would not impact waters of the United States and therefore would not change existing salinity regimes.

However, the Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measure are both being recommended for long-term study. Part of the reasoning for recommending these measures for long-term study is because of their potential for altering salinity regimes. These measures would not be constructed without the authority for additional study, NEPA analysis and associated environmental compliance coordination and permits. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts to littoral and sediment transport processes.

j) adverse effects of cumulative impacts.

Response: Cumulative impacts represent the effects of implementing the proposed action (both the Nonstructural NED RP and the NER RP) on significant resources when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Nonstructural NED RP Cumulative Impacts: The Nonstructural NED RP would provide reduced risk of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. These incremental impacts would be in addition to the direct and indirect impacts attributable to other existing, and authorized for construction, non-structural hurricane and storm surge damage risk reduction (HSDRRS) existing and authorized for construction projects throughout the Sabine, Calcasieu, Mermentau, and Teche-Vermilion basins; the State and the Nation.

The National Nonstructural Flood Proofing Committee (NNFPC) describe nonstructural flood proofing measures as permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding. Nonstructural flood proofing measures differ from structural measures in that they focus on reducing the consequences of flooding instead of focusing on reducing the probability of flooding, and include: elevation, relocation, buyout/acquisition, dry flood proofing, wet flood proofing, and berms or floodwalls. Nonphysical nonstructural measures include: flood warning systems, flood insurance, floodplain mapping, flood emergency preparedness plans, land use regulation, zoning, evacuation plans, and risk communication (source: <http://www.usace.army.mil/Missions/CivilWorks/ProjectPlanning/nfpc.aspx>; accessed December 3, 2015). The following selection of non-structural risk reduction projects are provided as part of the cumulative impacts analysis.

- The following selection of non-structural projects is taken from a more complete list of non-structural risk reduction projects involving the USACE is available upon request (source: personal



- communication Keven Lovetro, USACE National Nonstructural Flood proofing Committee, December 7, 2015):
- Pineville, KY, permanent evacuation, raising in place, demolish and replacement, flood warning, 72 structures, estimated cost \$4M, complete in early 1990's
 - Harlan, KY, permanent evacuation, raising in place, demolish and replacement, flood warning, 180 structures, estimated cost \$17.2M, complete in early 1990's
 - Barbourville, KY, permanent evacuation, raising in place, demolish and replacement, flood warning, 51 structures, estimated cost \$3.9M, complete in early 1990's
 - Matewan, KY, elevation, buyouts, flood warning and preparedness, 57 structures, estimated cost \$10M, Completed 1995
 - South Williamson, KY, elevation, buyouts, flood warning and preparedness, 100 structures, estimated costs \$15M, completed
 - Williamson, Mingo County, WV, elevation, buyouts, relocation, flood warning and preparedness, 178 structures, estimated cost \$24M, completed 1994
 - McDowell County, WV, elevation, buyouts, flood warning and preparedness, 1000 structures, estimated cost \$200M, being implemented
 - Upper Mingo County, WV, elevation, buyouts, flood warning and preparedness, 125 structures, estimated costs \$16M, completed 2007
 - Wayne County, WV, elevation, buyouts, flood warning and preparedness, 95 structures, estimated costs \$9M, completed 2006
 - Grundy, VA, elevation, buyouts, relocation, flood warning and preparedness, 228 structures, estimated costs \$131M, being implemented
 - Hatfield Bottom, WV, elevation, buyouts, flood warning and preparedness, 75 structures, estimated cost \$8M, completed 2000
- The following nonstructural projects were identified in a planning conference at Buffalo, New York in 2009
<http://wleb.org/watersheds/WLEB%207%20Aug%2009/Bufallo%20District%20Planning%20Part%202.pdf>; accessed December 3, 2015):
 - Johnson Creek, Arlington, Texas consists of the nonstructural acquisition and removal of 140 residential structures; vacated areas would be redeveloped for recreation (source: <http://planning.usace.army.mil/toolbox/library/ChiefReports/Johnson%20Creek,%20Arlington,%20TX%2011%20Aug%2009.pdf>; accessed December 3, 2015).
 - Temama, Tehama, California elevation, flood warnings/evacuation.
 - Reclamation Districts 2099, 2100 2192, Stanislaus County, California, acquisition, flowage easement, ring levee.
 - Missouri River, Pierre/Fort Pierre, South Dakota acquisition, relocation, elevation, and wet flood proofing.
 - Mill Creek, Baltimore, Maryland, acquisition is in feasibility stage.
 - Paxton Creek, Baltimore, Maryland, flood warning system.
 - Cypress Creek, Galveston, Texas, acquisition.
 - MsCIP, Mississippi, relocation, buyout, elevation, flood proofing.
 - Onion Creek, Austin, Texas, buyout.
 - Yellowstone River Glendive, Montana, relocation, acquisition
 - West Shore Lake Pontchartrain, St. Charles, St. John the Baptist and St. James Parishes, Louisiana, berm around the small ring berms and elevation; signed Chiefs Report, (source: http://www.mvn.usace.army.mil/Portals/56/docs/PAO/Matt/West%20Shore%20Lake%20Pontchartrain%20Chiefs%20Report_signed_12June2015.pdf; December 3, 2015).
 - Dallas Floodway Extension, Trinity River buyouts, and levee structures within floodplain, wetlands <http://www.swf.usace.army.mil/Missions/WaterSustainment/DallasFloodwayExtension.aspx>; accessed December 3, 2015).



- Upper Des Plaines River and Tributaries, Illinois and Wisconsin, Non-structural flood risk management measures would include elevating structures, dry flood-proofing, filling basements in combination with dry flood-proofing, wet flood proofing, constructing engineered low-level ring levees at large commercial or public building sites, and evacuating portions of floodplains.
- Red River of the North (Fargo-Moorhead Study), berm, raise existing berm, elevate, buyout, wet and dry flood proof (source: http://www.floods.org/Files/Conf2013_ppts/G1/G1_Behm.pdf; accessed December 3, 2015).
- The Green Brook Flood Control Project Middlesex, Somerset and Union Counties, New Jersey (source: <http://www.nan.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/11241/Article/487324/fact-sheet-green-brook-sub-basin.aspx>; accessed December 3, 2015) includes flood proofing, volunteer buyout and demolition of homes.
- Project: Tug Fork Basin, McDowell County, West Virginia Nonstructural Flood Control Project elevation, dry flood proofing, acquisition, flood warning, wet flood proofing are underway 54 acquisitions and 10 flood proofings complete (source: http://www.wvcommerce.org/App_Media/assets/download/ndrc/WV_External_Data/Adapt/McDowell202.pdf; and accessed December 3, 2015).
- The conceptual 2012 State Master Plan recommends a comprehensive nonstructural program as part of its strategy to reduce the flood risk for Louisiana citizens. Nonstructural projects include raising a building's elevation, flood proofing structures, and voluntary acquisition or relocation. These measures are key components of protecting communities through a "multiple lines of defense approach" (<http://coastal.la.gov/project-content/ccrp/>; accessed March 12, 2013).
- The FEMA Hazard Mitigation Assistance (HMA) grants programs (<http://www.fema.gov/hazard-mitigation-assistance>; accessed December 3, 2015) provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages. Currently, FEMA administers the following HMA grant programs:
 - Hazard Mitigation Grant Program (HMGP) assists in implementing long-term hazard mitigation measures following Presidential disaster declarations. Funding is available to implement projects in accordance with State, Tribal, and local priorities.
 - Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and to implement mitigation projects before disasters. The program goal is to reduce overall risk to the population and structures, while at the same time, also reducing reliance on Federal funding from disaster declarations.
 - Flood Mitigation Assistance (FMA) provides annual funds so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP.

NER RP Cumulative Impacts: Over the 50-year period of analysis, the NER RP would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. Whereas the chenier restoration measures would restore a net total of 1,413 net acres with 538 AAHUs. The positive cumulative impacts of implementing the NER RP would be the additive, and in some instances the synergistic, effects of restoring and nourishing sites over the 50 year period of analysis, an estimated 7,900 net acres and 2,700 AAHUs. The five shoreline protection measures would span approximately 251,528 linear feet, and are anticipated to protect/stabilize approximately 6,135 net acres and 1,738 AAHUs. Although not impacting waters of the United States, the approximately 1,413 net acres from 35 reforestation sites in Cameron and Vermilion Parishes would be reforested over the 50 year period of analysis, resulting in 538 AAHUs.

The primary cumulative impacts of the NER RP would be related to dredging and construction of the nine marsh restoration measures and the five shoreline protection measures and the reforestation of the 35 chenier reforestation measures. Dredging and construction related impacts are generally temporary and localized and



include: increased turbidity and total suspended sediments, organic enrichment, chemical leaching, reduced dissolved oxygen, and elevated carbon dioxide levels. Following construction, these temporary and localized effects would return to pre-construction levels. The only significant long term adverse cumulative effects expected from implementing the NER RP measures would be associated with the conversion of existing fragmented marsh and shallow water bottom habitats to transitional estuarine marsh habitat and rocky shoreline protection habitats. However, conversion of fragmented marsh and shallow water bottoms to these transitional estuarine marsh habitat and shoreline protection habitat would provide greater long-term positive benefits when considered within the context of the ongoing extensive land loss throughout coastal Louisiana and the project area which is converting extensive areas of marsh to shallow open water.

Additional long term positive cumulative impacts would be related to restoring and protecting important, essential and in some instances critical habitats used by various terrestrial and aquatic organisms for shelter, nesting, feeding, roosting, cover, nursery, EFH and other life requirements; as well as local increases in productivity. The NER RP breakwater measures would provide protection to designated critical wintering habitat for piping plover which would work synergistically with other barrier shoreline restoration and protection features (e.g., State of Louisiana Caminada Headland Beach and Dune Restoration, CWPPRA projects TE-27 and TE-50 Whiskey Island restoration and other barrier restoration projects. Increased recreational and commercial fishing opportunities provided by marsh restoration measures that would provide important, critical and essential habitats as well as protection of recreational marsh lands from wave erosion effects by the shoreline protection measures. The cumulative impacts of the proposed action would be a positive increasing the visual resources, especially the viewscape, in the form of providing additional acres of marsh wetlands (and chenier ridge) in an area that is otherwise being degraded, fragmented and lost throughout the southwest coastal basin, coastal Louisiana, and the Nation. Restoration of marsh would convert existing view sheds of open water into marsh wetlands interspersed with large bodies of open water and use the basic design elements of form, line, texture, color, and repetition to create an aesthetically pleasing view shed. These NER RP impacts would be in addition to, and often synergistic with, the impacts and benefits from marsh acres restored, nourished and protected by other Federal, state, local, and private restoration efforts within or near the Southwest Coastal Louisiana Study Area, the Louisiana state coastal area, and the nation’s coastal areas. Some of these other efforts include the following:

- CWPPRA Program – There are currently 149 active CWPPRA projects throughout coastal Louisiana. In September 2015, 101 projects were completed, benefiting over 97,401 acres. 21 projects are currently under active construction with 22 additional projects approved and in the engineering and design phase of development (source: <https://lacoast.gov/new/About/FAQs.aspx>; accessed November 23, 2015). There are 8 CWPPRA projects within Calcasieu Parish, 39 CWPPRA projects within Cameron Parish, and 12 CWPPRA projects within Vermilion Parish. **Table 9** provides a cumulative impacts comparison by listing the potential direct and indirect impacts of NER RP measures on existing coastal restoration projects, including CWPPRA projects, in Calcasieu, Cameron and Vermilion Parishes.

Table 9. Potential Direct and Indirect Impacts of Southwest Coastal Louisiana NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes
(source: <https://lacoast.gov/new/Projects/List.aspx>; accessed November 23, 2015)

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
Calcasieu Parish Existing Coastal Restoration Projects				
CS-09	Brown Lake Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	37	NER RP measures would have no potential direct or secondary impacts on this deauthorized project.
CS-22	Clear Marais Bank Protection	Shoreline Protection	1,067	No potential impacts by NER RP restoration and protection measures.
CS-24	Perry Ridge Shore Protection	Shoreline Protection	1,203	No potential impacts by NER RP restoration and protection measures.



Table 9. Potential Direct and Indirect Impacts of Southwest Coastal Louisiana NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes
(source: <https://lacoast.gov/new/Projects/List.aspx>; accessed November 23, 2015)

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
CS-27	Black Bayou Hydrologic Restoration	Hydrologic Restoration	3,594	No potential impacts by NER RP restoration and protection measures.
CS-30	GIWW - Perry Ridge West Bank Stabilization	Shoreline Protection	83	No potential impacts by NER RP restoration and protection measures.
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.
Cameron Parish Existing Coastal Restoration Projects				
CS-04a	Cameron-Creole Maintenance	Hydrologic Restoration	2,602	NER RP measure 3c1 could provide some indirect benefits to the CS-04a project, completed in 1997, by reducing the tidal prism in the Cameron-Creole Watershed. This would reduce the velocities through the water control structures by reducing fetch in the open water areas thereby providing some protection from wind-driven wave erosion.
CS-09	Brown Lake Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	37	NER RP measures would have no potential direct or secondary impacts on this deauthorized project.
CS-11b	Sweet Lake/Willow Lake Hydrologic Restoration	Shoreline Protection	247	No potential impacts by NER RP restoration and protection measures.
CS-17	Cameron Creole Plugs	Hydrologic Restoration	865	No potential impacts by NER RP restoration and protection measures.
CS-18	Sabine National Wildlife Refuge Erosion Protection	Shoreline Protection	5,542	No potential impacts by NER RP restoration and protection measures.
CS-19	West Hackberry Vegetative Planting Demonstration	Demonstration, Sediment Trapping, Vegetative Planting	0	No potential impacts by NER RP restoration and protection measures.
CS-20	East Mud Lake Marsh Management	Marsh Management	1,520	NER RP measure 124c could provide secondary benefits to the CS-20 water control structures by reducing open water fetch and tidal prism which would reduce erosion from wind-driven waves and tidal velocities through the water control structures.
CS-21	Highway 384 Hydrologic Restoration	Hydrologic Restoration	150	No potential impacts by NER RP restoration and protection measures.
CS-23	Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully	Marsh Management	953	No potential impacts by NER RP restoration and protection measures.
CS-25	Plowed Terraces Demonstration	Demonstration, Sediment and Nutrient Trapping	0	No potential impacts by NER RP restoration and protection measures.
CS-26	Compost Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures.



Table 9. Potential Direct and Indirect Impacts of Southwest Coastal Louisiana NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes
(source: <https://lacoast.gov/new/Projects/List.aspx>; accessed November 23, 2015)

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
CS-27	Black Bayou Hydrologic Restoration	Hydrologic Restoration	3,594	No potential impacts by NER RP restoration and protection measures.
CS-28-1	Sabine Refuge Marsh Creation, Cycle 1	Marsh Creation	214	No potential impacts by NER RP restoration and protection measures.
CS-28-2	Sabine Refuge Marsh Creation, Cycle 2	Marsh Creation	261	No potential impacts by NER RP restoration and protection measures.
CS-28-3	Sabine Refuge Marsh Creation, Cycle 3	Marsh Creation	187	No potential impacts by NER RP restoration and protection measures.
CS-28-4-5	Sabine Refuge Marsh Creation, Cycles 4 and 5	Marsh Creation	331	No potential impacts by NER RP restoration and protection measures.
CS-29	Black Bayou Culverts Hydrologic Restoration	Hydrologic Restoration	540	No potential impacts by NER RP restoration and protection measures.
CS-31	Holly Beach Sand Management	Shoreline Protection	330	NER RP Measure 5a would provide shoreline protection and stabilization that would secondarily benefit this existing project, which was completed in 2003.
CS-32	East Sabine Lake Hydrologic Restoration	Hydrologic Restoration	225	No potential impacts by NER RP restoration and protection measures.
CS-49	Cameron-Creole Freshwater Introduction	Freshwater Diversion	473	This authorized project, is scheduled to begin construction in September 2016. NER RP measure 3c1 would create marsh within and adjacent to the vegetative planting areas at the westernmost reaches of CS-49, which would increase the resiliency and habitat function of the wetlands in the area.
CS-53	Kelso Bayou Marsh Creation	Marsh Creation	274	No potential impacts by NER RP restoration and protection measures.
CS-54	Cameron-Creole Watershed Grand Bayou Marsh Creation	Marsh Creation	476	NER RP measure 3c1 would secondarily impact this project, authorized for construction in January 2015, by creating marsh adjacent to the westernmost reaches of CS-54 and providing some indirect protection from wave-induced erosion.
CS-59	Oyster Bayou Marsh Creation and Terracing	Marsh Creation, Terracing	433	NER RP 124c measure would create marsh adjacent to CS-59, scheduled to be completed in October 2016, which would increase the resiliency and habitat function of the wetlands in the area.
CS-66	Cameron Meadows Marsh Creation and Terracing	Marsh Creation, Terracing	264	No potential impacts by NER RP restoration and protection measures.
CS-78	No Name Bayou Marsh Creation	Marsh Creation	497	No potential impacts by NER RP restoration and protection measures.
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-08	Bio-Engineered Oyster Reef Demonstration	Demonstration	0	NER RP shoreline protection measure 6b1 would provide positive direct effects for the existing LA-08 oyster reef CWPPRA demonstration project by installing a lightweight aggregate core breakwater field thereby protecting LA-08 from high energy Gulf of Mexico wind-driven wave erosion
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.



Table 9. Potential Direct and Indirect Impacts of Southwest Coastal Louisiana NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes
 (source: <https://lacoast.gov/new/Projects/List.aspx>; accessed November 23, 2015)

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
ME-09	Cameron Prairie National Wildlife Refuge Shoreline Protection	Shoreline Protection	247	No potential impacts by NER RP restoration and protection measures.
ME-11	Humble Canal Hydrologic Restoration	Hydrologic Restoration	378	No potential impacts by NER RP restoration and protection measures.
ME-16	Freshwater Introduction South of Highway 82	Hydrologic Restoration	296	The SWC shoreline protection measures 6b2 and 6b3 would provide direct benefits to the outfall area of the ME-16 hydrologic restoration project, completed in 2006, by reducing Gulf of Mexico shoreline erosion through the installation of lightweight aggregate core breakwater fields.
ME-17	Little Pecan Bayou Hydrologic Restoration (Deauthorized)	Hydrologic Restoration	56	This hydrologic restoration project was deauthorized prior to construction, so would have no potential impacts on or by NER RP restoration and protection measures.
ME-18	Rockefeller Refuge Gulf Shoreline Stabilization	Shoreline Protection	256	The ME-18 project would be constructed from 2016 to 2018, and would consist of a lightweight aggregate core breakwater field extending from Joseph Harbor approximately 3 miles west. This would preclude the need to install the lightweight aggregate core breakwater field in this section as part of the 6b1 measure, but the 6b1 measure would construct a lightweight aggregate core breakwater field from the western end of the ME-18 project to a point approximately 8 miles to the west.
ME-19	Grand-White Lakes Landbridge Protection	Shoreline Protection	213	No potential impacts by NER RP restoration and protection measures.
ME-20	South Grand Chenier Marsh Creation	Hydrologic Restoration	414	This project, which is expected to be completed in 2016, would provide indirect protection to SWC marsh restoration measure 47c3 by reducing erosion from the eastern direction in the southern area. The 3c1 measure would create marsh adjacent to the westernmost reach of the marsh restoration cells, which would provide some indirect protection from erosion.
ME-21	Grand Lake Shoreline Protection	Shoreline Protection	45	No potential impacts by NER RP restoration and protection measures.
ME-24	Southwest LA Gulf Shoreline Nourishment and Protection (Transferred)	Shoreline Protection	888	This project has not been authorized for construction. However, the NER RP shoreline protection measure 6b3 would protect ME-24 project from wind-driven wave erosion from the Gulf of Mexico once authorized and constructed.
ME-32	South Grand Chenier Marsh Creation - Baker Tract	Marsh Creation	393	No potential impacts by NER RP restoration and protection measures.
Vermilion Parish Existing Coastal Restoration Projects				
LA-03a	Nutria Harvest for Wetland Restoration Demonstration	Demonstration, Herbivory Control	0	No potential impacts by NER RP restoration and protection measures.
LA-03b	Coastwide Nutria Control Program	Herbivory Control	14,963	No potential impacts by NER RP restoration and protection measures.
LA-06	Shoreline Protection Foundation Improvements Demonstration	Demonstration, Shoreline Stabilization	0	No potential impacts by NER RP restoration and protection measures.



Table 9. Potential Direct and Indirect Impacts of Southwest Coastal Louisiana NER RP Measures on Existing Coastal Restoration Projects in Calcasieu, Cameron and Vermilion Parishes
(source: <https://lacoast.gov/new/Projects/List.aspx>; accessed November 23, 2015)

Project Number	Project Name	Project Types	Net Acres Benefited	Southwest Coastal Louisiana NER RP Measure Impacts
LA-30	Coastwide Reference Monitoring System	Monitoring	--	No potential impacts by NER RP restoration and protection measures.
ME-04	Freshwater Bayou Wetland Protection	Hydrologic Restoration, Shoreline Protection	1,593	Although NER RP measure 127c3 is located nearby there would be no potential impacts by NER RP measures on ME-04, which was constructed in 1998.
ME-08	Dewitt-Rollover Vegetative Plantings Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures on this deauthorized project.
ME-12	Southwest Shore White Lake Demonstration (Deauthorized)	Demonstration	0	No potential impacts by NER RP restoration and protection measures on this deauthorized project
ME-13	Freshwater Bayou Bank Stabilization	Shoreline Protection	511	No potential impacts by NER RP restoration and protection measures.
ME-14	Pecan Island Terracing	Sediment and Nutrient Trapping	442	No potential impacts by NER RP restoration and protection measures.
ME-22	South White Lake Shoreline Protection	Shoreline Protection	844	No potential impacts by NER RP restoration and protection measures.
ME-23	South Pecan Island Freshwater Introduction (Deauthorized)	Hydrologic Restoration	98	No potential impacts by NER RP restoration and protection measures.
ME-24	Southwest LA Gulf Shoreline Nourishment and Protection (Transferred)	Shoreline Protection	888	NER RP shoreline protection measure 6b3 would provide secondary benefits for the ME-24 project by installing a lightweight aggregate core breakwater field, which would protection it from wind-driven wave erosion from the Gulf of Mexico.
ME-31	Freshwater Bayou Marsh Creation	Marsh Creation	279	No potential impacts of NER RP measure 127c3 because this project has not been authorized for construction.
TV-03	Vermilion River Cutoff Bank Protection	Shoreline Protection	65	No potential impacts by NER RP restoration and protection measures.
TV-09	Boston Canal/Vermilion Bay Bank Protection	Shoreline Protection, Vegetative Planting	378	No potential impacts by NER RP restoration and protection measures.
TV-11b	Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock (Inactive)	Shoreline Stabilization	241	NER RP 16b would construct a foreshore rock dike along a reach proposed by TV-11b, which has not been constructed. If TV-11b is constructed, the NER RP 16b reach of shoreline protection would not be required under TV-11b.
TV-12	Little Vermilion Bay Sediment Trapping	Shoreline Protection, Sediment Trapping	441	No potential impacts by NER RP restoration and protection measures.
TV-13a	Oaks/Avery Canal Hydrologic Restoration, Increment 1	Hydrologic Restoration	160	No potential impacts by NER RP restoration and protection measures.
TV-16	Chenièrè Au Tigre Sediment Trapping Demonstration	Demonstration, Sediment and Nutrient Trapping	0	No potential impacts by NER RP restoration and protection measures.
TV-17	Lake Portage Land Bridge	Shoreline Protection	24	No potential impacts by NER RP restoration and protection measures.
TV-18	Four Mile Canal Terracing and Sediment Trapping	Sediment and Nutrient Trapping	167	No potential impacts by NER RP restoration and protection measures.
TV-63	Cole's Bayou Marsh Restoration	Hydrologic Restoration, Marsh Creation	398	No potential impacts by NER RP restoration and protection measures.



- Project CS-59 (Oyster Bayou Marsh Creation and Terracing) would be directly impacted by construction of marsh restoration NER RP measure 124c (**Figure 6**). Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation) would be directly impacted by construction of marsh restoration NER RP measure 3c1 (**Figure 7**). Project CS-59 is on Priority Project List 20 with Phase 1 funding approval for engineering and design work to restore 609 acres and nourish about 7 acres of brackish marsh. Project CS-54 is on Project Priority List 21 with specific goals to create 510 acres of saline marsh, nourish 90 acres of existing saline marsh; create 17,500 linear feet of terraces; and, reduce wave/wake erosion. When overlap occurs, proposed NER RP measures would be constructed to avoid existing coastal restoration projects. This would generally include construction of temporary containment/exclusion dikes to contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing project sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed.
 - NER RP shoreline protection measure 5a (Holly Beach Shoreline Stabilization-Breakwaters) would be located immediately offshore of the projects CS-31 (Holly Beach Sand Management) and CS 33 (Cameron Parish Shoreline) indirectly benefiting these existing projects by providing shoreline protection and stabilization from high energy Gulf wave erosion.
 - Project TV-11b, a bank stabilization project, could be impacted by NER RP marsh restoration measure 3c1, but this project is presently inactive.
- Louisiana Coastal Area (LCA), Ecosystem Restoration Study (2004 USACE) recommends 15 near-term measures aimed at addressing the critical restoration needs. The components recommended for authorization include five critical near-term ecosystem restoration measures, a demonstration program consisting of a series of demonstration projects, a beneficial use of dredged material (BUDMAT) program, and a science and technology program. The five critical near-term ecosystem restoration measures, demonstration projects, and BUDMAT projects are all subject to the approval of feasibility level of detail decision documents by the Secretary of the Army. The January 31, 2005 Chief's Report approved the Near-Term Plan substantially in accordance with the 2004 LCA Study. Title VII of the Water Resources Development Act of 2007 (WRDA 2007) (Public Law 110-114) authorized an ecosystem restoration Program for the Louisiana Coastal Area substantially in accordance with the Near-Term Plan.
 - The Chenier Plain Freshwater Management and Allocation Reassessment Study (Chenier Plain Study), recommended in the 2005 Chief's Report was one of six large-scale restoration concepts that were purported to have the ability to “significantly restore environmental conditions that existed prior to large-scale alteration of the natural ecosystem” upon construction. Guidance provided by the Director of Civil Works on December 19, 2008 states that “the coastal restoration components proposed as part of the LCA Chenier Plain study would be evaluated as part of the Southwest Coastal Louisiana feasibility study”. Although several of these projects have been authorized for construction, there is presently no willing local non-Federal Sponsor. Consequently, the authorized projects without an identified local non-Federal Sponsor are not considered reasonably foreseeable and are therefore not considered part of either the No Action Alternative (future without project conditions [FWOP]) or the future with project conditions. Nevertheless, the LCA Program is mentioned here since there is some potential that a willing local non-Federal Sponsor may be determined and these projects could therefore become part of the cumulative impacts assessment under the FWOP and future with project conditions.
 - The CEMVN and its local non-Federal Sponsor, Plaquemines Parish, recently completed the 44-acre West Bay Marsh Creation Tier 1 project, part of the LCA's Beneficial Use of Dredged Material (BUDMAT) Program.
 - BUDMAT project (Environmental Assessment #535). Plaquemines Parish is also the non-Federal Sponsor for two additional LCA BUDMAT projects: Ridge Restoration at Tiger Pass, and Restoration of Cat Island. These two projects are still in the study phase.



- An ongoing effort by CPRAB is development of the 2012 Louisiana’s Comprehensive Master Plan for a Sustainable Coast (source: http://issuu.com/coastalmasterplan/docs/coastal_master_plan-v2?e=3722998/2447530; accessed November 23, 2015). However, the unauthorized and unfunded conceptual projects are not reasonably foreseeable under the FWOP conditions or the future with project conditions. Nevertheless, the Louisiana State Master Plan is mentioned here since there is some potential that these projects would become funded and therefore considered as part of a cumulative impacts assessment under the FWOP and future with project conditions. The 2012 State Master Plan indicates that the CPRAB has, since 2007:
 - Built or improved 159 miles of levees
 - Benefited 19,405 acres of coastal habitat
 - Secured approximately \$17 billion in state and Federal funding for protection and restoration projects
 - Identified and used dozens of different Federal, state, local and private funding sources of projects
 - Moved over 150 projects into design and construction
 - Constructed projects in 20 parishes
 - Constructed 32 miles of barrier islands/berms
 - The 2012 State Master Plan developed and evaluated a total of 397 projects, with each project having its own timeline and budget, including:
 - 248 restoration projects,
 - 33 structural risk reduction (protection) projects, and
 - 116 conceptual nonstructural flood risk reduction projects
 - The 2012 State Master Plan developed for the Southwest Coast, a total of 42 projects with 36 projects to be constructed in the 1st Implementation Period (2012 -2032) including: 5 bank stabilization, 11 hydrologic restoration, 8 marsh creation, 4 ridge restoration, 6 shoreline protection, and 1 each structural protection and multiple protection measure; a total of 6 projects would be constructed in the 2nd Implementation Period (2032-2051) including: 2 each marsh creation and shoreline protection, and 1 each ridge restoration and multiple protection measures.
 - However, the Tulane Institute on Water Resources Law & Policy 2014 Issue Paper “Turning Coastal Restoration and Protection Plans Into Realities: The Cost of Comprehensive Coastal Restoration and Protection” indicates that the 2012 State Master Plan has not come to terms with the true costs of saving coastal Louisiana and how to finance it:

...the cost of implementing those measures will exceed the \$50 billion figure set forth in the Plan, in all likelihood by a factor of at least two. When one includes the anticipated costs of the Urban Water Plan, federal flood protection, and other factors excluded from the 2012 Master Plan, the cost of restoring this coast and protecting its people can be expected to exceed \$100 billion over 50 years.³⁰ The reasons for this lie primarily in the 2012 Master Plan’s use of 2010 dollars instead of inflation adjusted dollars and the exclusion of a range of projects and programs from the Plan’s cost estimates. The use of present value dollars in the 2012 Master Plan and the Urban Water Plan was neither hidden nor inappropriate as a methodology, and no criticism of that methodology is intended. However, when looking forward to the challenge of financing everything that is planned and necessary, a more comprehensive approach must be used. The value of keeping this coast ecologically and economically in business has been repeatedly demonstrated to be immense and well in excess of the adjusted price of the 2012 Master Plan. The price of putting the pieces of coastal Louisiana and the Gulf Coast back together after Hurricanes Katrina and Rita alone approached \$100 billion. Knowing what is at stake and coming to terms with the true costs of saving coastal Louisiana are prerequisites for a robust civic conversation about how best to finance it. It will require engagement at the local, state, and national levels from a broad range of public and private stakeholders, and answers will not come easily.
- Restoration of injuries to natural resources damaged by the 2010 Deepwater Horizon oil spill:



- The Natural Resource Damage Assessment (NRDA) is a legal process under the Oil Pollution Act of 1990 (OPA) and the Louisiana Oil Spill Prevention and Response Act of 1991 (LOSPRA) whereby designated trustees represent the public to ensure that natural resources injured in an oil spill are restored (source: <http://la-dwh.com/AboutNRDA.aspx>; accessed November 25, 2015). Both federal and state NRDA regulations provide a step-by-step process for trustees to determine injuries, to assess damages, and to develop and implement restoration projects that compensate the public for injuries to natural resources impacted by an incident. In general, the NRDA process involves three steps: (1) pre-assessment; (2) restoration planning; and (3) restoration implementation.
- On July 11, 2011, Governor Bobby Jindal unveiled the “Louisiana Plan” which outlines 13 initial proposed early restoration projects (source: <http://la-dwh.com/LouisianaPlanProjects.aspx>; accessed November 25, 2015). The proposed projects come in many forms including marsh restoration, barrier island restoration, shoreline projection measures, resource-specific projects, and projects aimed at addressing impacts to our citizens’ ability to use Louisiana’s natural resources (**Table 5**). The projects are consistent with Louisiana’s Coastal Master Plan; they are consistent with the criteria outlined in the early restoration framework agreement and applicable regulations; and they support the goal of compensating the public for natural resource injuries resulting from the Deepwater Horizon Oil Spill.

Table 5. “Louisiana Plan” proposed early restoration projects

Project Name	Approximate Cost (\$)
Oyster Reestablishment Program (Louisiana Oyster Cultch Project)	\$15 M
Saltwater Hatchery	\$48 M
Shell Island - Larger Lobe	\$110 M
Chandeleur Islands Restoration	\$65 M
Biloxi Marsh Shoreline Protection Phase 2	\$45 M
Lake Hermitage Additional Increment - (Lake Hermitage Marsh Creation – NRDA Early Restoration Project)	\$13.9 M
Grand Liard Marsh & Ridge Restoration	\$31.3 M
Cheniere Ronquille Barrier Island Restoration	\$44 M
Bay Side Segmented Breakwater at Grand Isle	\$3.3 M
West Grand Terre Beach	\$9 M
West Grand Terre Stabilization	\$3 M
Barataria Basin Barrier Shoreline Restoration - Caminada Headland	\$75 M
Maintain Land bridge between Caillou Lake and Gulf of Mexico	\$71 M

- On October 5, 2015, the Deepwater Horizon Natural Resource Damage Assessment Trustees released the Deepwater Horizon Oil Spill Draft Programmatic Damage Assessment and Restoration Plan and Programmatic Environmental Impact Statement (PDARP/PEIS) for public review and comment (source: http://la-dwh.com/PDARP_PEIS/Draft_PDARP_PEIS.aspx; accessed November 25, 2015). The Trustees identified Alternative A as their preferred alternative. Alternative A (described in Section 5.5) is an integrated restoration portfolio that emphasizes the broad ecosystem benefits that can be realized through coastal habitat restoration in combination with resource-specific restoration in the ecologically interconnected northern Gulf of Mexico ecosystem. **Table 6** is a copy of Table 5.10-1 from the PDARP/PEIS, and shows the Trustees’ allocations by goal and restoration type (rows) and restoration area (columns). This table also highlights where investments have already been made through the Trustees’ Early Restoration efforts (source: <http://www.gulfspillrestoration.noaa.gov/wp->



[content/uploads/Chapter-5_Restoring-Natural-Resources1.pdf](#); accessed November 25, 2015). Under the PDARP/PEIS, the State of Louisiana would receive \$5 billion of the total \$8.1 billion restoration funding allocation for the Early Restoration work. Due to the large proportion of the wetlands and coastal and nearshore habitat funding allocated to Louisiana, wetland projects identified in the Louisiana Master Plan were used to evaluate the potential magnitude of benefits achievable here. However, as described in Section 5.5.2 of the PDARP/PEIS, the restoration dollars could be used for a variety of restoration approaches. For illustration purposes only, the approximately \$4 billion allocated to Louisiana for this restoration type could be sufficient to create 20,000 to 40,000 acres of coastal marsh in Louisiana (LA Master Plan) along hundreds of miles of shoreline, supporting the diversity of fish, birds, and animals that depend on coastal marsh.

- The EPA, reporting on the Nation, states the number of restoration projects grows yearly. Current Federal initiatives call for a wide range of restoration actions, including improving or restoring 25,000 miles of stream corridor; achieving a net increase of 100,000 acres of wetlands each year and establishing two million miles of conservation buffers (source: <http://water.epa.gov/type/wetlands/restore/principles.cfm>; accessed March 12, 2015).



Table 6. Settlement of NRD claims and final allocations (source: http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/Chapter-5_Restoring-Natural-Resources1.pdf; accessed November 25, 2015).

Major Restoration Categories	Unknown Conditions	Regionwide	Open Ocean	Alabama	Florida	Louisiana	Mississippi	Texas	Total Restoration Funding*
1. Restore and Conserve Habitat									
Wetlands, Coastal, and Nearshore Habitats				65,000,000	5,000,000	4,009,062,700	55,500,000	100,000,000	4,234,562,700
Habitat Projects on Federally Managed Lands				3,000,000	17,500,000	50,000,000	5,000,000		75,500,000
Early Restoration (through Phase IV)				28,110,000	15,629,367	259,625,700	80,000,000		383,365,067
2. Restore Water Quality									
Nutrient Reduction (Nonpoint Source)				5,000,000	35,000,000	20,000,000	27,500,000	22,500,000	110,000,000
Water Quality (e.g., Stormwater Treatments, Hydrologic Restoration, Reduction of Sedimentation, etc.)					300,000,000				300,000,000
3. Replenish and Protect Living Coastal and Marine Resources									
Fish and Water Column Invertebrates			380,000,000						380,000,000
Early Restoration Fish and Water Column Invertebrates			20,000,000						20,000,000
Sturgeon			15,000,000						15,000,000
Sea Turtles	60,000,000		55,000,000	5,500,000	20,000,000	10,000,000	5,000,000	7,500,000	163,000,000
Early Restoration Turtles	29,256,165							19,965,000	49,221,165
Submerged Aquatic Vegetation						22,000,000			22,000,000
Marine Mammals	19,000,000	55,000,000	5,000,000	5,000,000	50,000,000	10,000,000			144,000,000
Birds	70,400,000	70,000,000	30,000,000	40,000,000	148,500,000	25,000,000	20,000,000		403,900,000
Early Restoration Birds	1,823,100		145,000	2,835,000	71,937,300			20,603,770	97,344,170
Mesophotic and Deep Benthic Communities			273,300,000						273,300,000
Oysters	64,372,413			10,000,000	20,000,000	26,000,000	20,000,000	22,500,000	162,872,413
Early Restoration Oysters				3,329,000	5,370,596	14,874,300	13,600,000		37,173,896
4. Provide and Enhance Recreational Opportunities									
Provide and Enhance Recreational Opportunities				25,000,000	63,274,513	38,000,000	5,000,000		131,274,513
Early Restoration Recreational Opportunities			22,397,916	85,505,305	120,543,167	22,000,000	18,957,000	18,582,688	287,986,076
5. Monitoring, Adaptive Management, Administrative Oversight									
Monitoring and Adaptive Management		65,000,000	200,000,000	10,000,000	10,000,000	225,000,000	7,500,000	2,500,000	520,000,000
Administrative Oversight and Comprehensive Planning		40,000,000	150,000,000	20,000,000	20,000,000	33,000,000	22,500,000	4,000,000	289,500,000
Adaptive Management NRD Payment for Unknown Conditions	700,000,000								700,000,000
Total NRD Funding	\$700,000,000	\$349,851,678	\$1,240,697,916	\$295,589,305	\$680,152,643	\$5,000,000,000	\$295,557,000	\$238,151,458	

*The total restoration funding allocation for the Early Restoration work; each restoration type; and monitoring, adaptive management, and administrative oversight is \$8.1 billion (plus up to an additional \$700 million for adaptive management and unknown conditions).

- The NOAA Restoration Center has restored 2,812 projects nationwide and its programs provide funding and technical assistance for coastal habitat restoration projects throughout the United States and territories. In Louisiana, the Restoration Center is planning, implementing or has restored 100 projects including CWPPRA and community-based restoration projects (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015). In Southwest Coastal Louisiana, the NOAA Restoration Center has 20 restoration projects (**Table 7**):

Table 7. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
Black Bayou Hydrologic Restoration Project	CWPPRA	LDNR	completed	*2960 acres tidal wetland habitat restored *634 acres tidal wetland habitat protected
Cameron Meadows Marsh Creation and Terracing	CWPPRA	CPRA	implementation	tidal wetland
Cameron Shoreline Vegetation Planting Phase II	Community-based	Cameron Parish, Cheniere Energy, Gulf Coast Soil & Water Conservation Service, State Farm Insurance Co., Lonnie G. Harper	completed	6.5 acres of dune habitat restored by installing a sand fence and shoreline planting



Table 7. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
		and Associates, LLC, Coalition to Restore Coastal Louisiana, America's Wetlands, Restore America's Estuaries, Disney, LDNR, 143 volunteers contributed 920 hours to this project.		
Peveto Beach Sand Fencing	Community-based	Imperial Calcasieu Resource Conservation and Development Council, Inc., 48 volunteers contributed 238 hours to this project.	completed	10 acres of dune habitat restored
Peveto Sand Fencing and Vegetation Project 2	Community-based	Gulf of Mexico Foundation, Imperial Calcasieu Resource Conservation and Development Council, Inc., 12 volunteers contributed 372 hours to this project.	completed	1.72 acres of dune habitat restored
Oyster Bayou Marsh Creation	CWPPRA	Office of Coastal Protection and Restoration (LA OCPR), CPRA	implementation	tidal wetland
Bayou Verdine CERCLA –Sabine 1999 Unit Hydrologic Restoration and Marsh Creation	DARRP	Contributed to this project	completed	Create 14.7 acres of marsh in open water areas. Additionally, a 260-acre area of marsh and shallow mud flats will be restored to tidal hydrology
Cameron-Creole Watershed Mottled Duck Research and Terracing Project	Community-based	National Fish and Wildlife Foundation, Ducks Unlimited, Miami Corporation, Black Lake Land and Oil, LLC, British Petroleum (BP) America, Louisiana Department of Natural Resources	completed	Ducks Unlimited is working to construct 70,000 linear feet of earthen terraces benefiting 900 acres of fisheries habitat located in the Cameron-Creole Watershed in southwest Louisiana. 530 acres of tidal wetland habitat restored and 100 acres of tidal wetland habitat restored
Bio-Engineered Oyster Reef Demonstration	CWPPRA	CPRA, LDNR	implementation	The demonstration project consisted of an Oysterbreak, approximately 1000 feet long to provide oyster reef/shell bottom
Rockefeller Refuge Gulf Shoreline Stabilization Project	CWPPRA	LDNR	implementation	the construction of a continuous rock breakwater extending approximately



Table 7. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
				50,691 feet from the west bank of Joseph Harbor to the east bank of Beach Prong to protect tidal wetlands
Pecan Island Terrace Creation Project	CWPPRA	LDNR	completed	constructed 198,400 linear feet of adjacent terrace cells; 425 acres of soft bottom mud/sand habitat restored 145 acres of tidal wetland habitat restored
Christian Marsh Terracing Project	Community-based	Coalition to Restore Coastal Louisiana, Randy Moertle and Associates, CPRA, McIlhenney Corporation, Restore America's Estuaries, Louisiana State University, Vermilion Corporation, Cargill, Incorporated, COYPU Foundation, Vermilion Soil and Water Conservation District, National Audubon Society, 87 volunteers contributed 696 hours to this project	Completed	Created over 25,000 linear feet of terraces, enhancing and protecting an additional 300 acres of adjacent marsh.
Louisiana Acadiana Bay Oyster Reef Construction and Gulf-wide Oyster Planning	Community-based	State of Louisiana, Louisiana State University Agriculture Extension Service, National Fish and Wildlife Foundation, The Nature Conservancy	Completed	installed ~670 linear feet of bioengineered oyster reef along the coastal shoreline of the Paul J. Rainey Wildlife Sanctuary in Vermilion Bay in southwest Louisiana; 0.15 acres of oyster/shell bottom habitat restored
Vermilion Bay Oyster Reef Restoration and Shoreline Protection	Community-based	LDWF, Louisiana Wetlands Association, 30 volunteers contributed 200 hours	Completed	This project implemented the first large-scale shell recycling program in Louisiana. A 600-foot oyster reef was constructed, which protected the adjacent shoreline, renewed oyster productivity in the bay, and benefited marine habitat.
Coles Bayou Marsh Restoration	CWPPRA	Office of Coastal Protection and Restoration (LA OCPR), Louisiana Coastal Protection and Restoration Authority	Planning	Objective of this project is to create and nourish brackish marsh and improve hydrology in order to increase freshwater and sediment inflow into the interior wetlands, the latter through culvert installation.



Table 7. NOAA Restoration Center projects in Southwest Coastal Louisiana (source: <https://restoration.atlas.noaa.gov/src/html/index.html>; accessed November 25, 2015)

Project	Program	Partner	Status	Habitat
Little Vermilion Bay Sediment Trapping Project	CWPPRA	LDNR	Completed	390 acres of tidal wetland habitat restored 51 acres of tidal wetland habitat protected
McIlhenney Planting Program- Little White Lake	Community-based	Louisiana State Agricultural Center, McIlhenney Corporation, Randy Moertle and Associates, Boy Scouts of America, Coalition to Restore Coastal Louisiana, 91 volunteers contributed 910 hours to this project.	Completed	5 acres of tidal wetland habitat restored
Four Mile Canal Terracing and Sediment Trapping	CWPPRA	LDNR	Completed	214 acres of tidal wetland habitat restored 113 acres of tidal wetland habitat protected
Rainey Wildlife Sanctuary Terrace Project	Community-based	LDNR, Coalition to Restore Coastal Louisiana, 20 volunteers contributed 400 hours to this project	Completed	640 acres of tidal wetland habitat restored
M/V Formosa Six	DARRP	LDNR, LDWF, National Fish and Wildlife Foundation, LDEQ, NRCS	Completed	142 acres of tidal wetland habitat restored

- Some other large scale ecosystem restoration projects affecting coastal waters of the United States include the following:
 - The CALFED Environmental Restoration Program, approved by the California state legislature in fall 2000, has been successfully acquiring and protecting important lands in the Delta and along its tributaries. To date, more than 130,000 acres of habitat targeted for species of import to the Delta have been enhanced, protected and restored, mostly through easements obtained by working with local land owners and communities (source: http://calwater.ca.gov/calfed/objectives/ecosystem_restoration.html#EcoHistory; accessed December 2, 2015).
 - The Chesapeake Bay Program is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. The Chesapeake Bay Program partners include the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the Environmental Protection Agency, representing the federal government; and participating citizen advisory groups (source: <http://www.chesapeakebay.net/about>; accessed December 2, 2015)
 - The Comprehensive Everglades Restoration Program (CERP), provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. It covers 16 counties over an 18,000-square-mile area and centers on an update of the Central & Southern Florida (C&SF) Project also known as the Restudy (source: http://141.232.10.32/about/about_cerp_brief.aspx; accessed December 2, 2015).



- The Mississippi Coastal Improvements Program Comprehensive Plan (MsCIP) is a system wide approach linking structural and nonstructural hurricane and storm damage risk reduction with ecosystem restoration with the goal of providing a coastal community more resilient to hurricanes and storms (source: http://www.sam.usace.army.mil/Portals/46/docs/program_management/mscip/docs/MS_CIP%20Chief%20Report.pdf; accessed December 2, 2015).
- The Coastal Texas Protection and Restoration Project a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State of Texas (source: <http://www.swg.usace.army.mil/Portals/26/docs/PAO/0827%20Hou-Galv%20Coastal%20TX%20Public%20mtg%20August%2027%202014.pdf>; accessed December 2, 2015).
- The Cameron Parish Master Plan for Coastal Restoration & Protection identifies a total of 253 priority projects including: 150 hydrologic restoration, 17 beneficial use/marsh creation, 2 oyster reef preservation projects, 9 shoreline/embankment maintenance projects, and 75 canal maintenance projects. The intent is to have the parish projects looked at in a holistic way to be considered for the 2017 State Master Plan. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Cameron Parish.
- Calcasieu Parish's priority project is the Rabbit Island Project and then the entire Cameron Parish Project list at this time. Calcasieu Parish believes that protecting Cameron Parish would protect Calcasieu Parish. Calcasieu Parish anticipates updating their coastal plan which would include a priority projects list. Those projects would be viable projects for consideration of funding for protecting Lake Charles to the 500 year level of protection as deemed necessary by the Coastal Master Plan for Louisiana 2012. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Cameron Parish.
- The Vermilion Parish Coastal Priority Project list identifies a total of 42 priority projects including: 10 hurricane protection projects, 17 shoreline protection and bank stabilization projects, 6 marsh creation projects, 7 hydrologic restoration projects, and 2 ridge restoration projects. These conceptual projects are not authorized or funded for construction and are therefore not considered reasonably foreseeable in the FWOP or future with project conditions. They are included at the request of Vermilion Parish.
- Other Gulf shore protection and restoration projects have been constructed along the Gulf shoreline through other funding sources. Segmented breakwaters have been constructed under at least two separate projects to the west of the proposed Holly Beach Shoreline Stabilization (5a) measure. The proposed breakwater would provide shoreline protection from the eastern end of the existing breakwaters eastward to the Calcasieu Pass jetty and compliment that existing project. The shoreline where the proposed Holly Beach measure would be built has been nourished with material dredged from the bottom of the Gulf of Mexico to help ensure that shoreline erosion did not compromise Louisiana Highways 27/82. Rock and riprap have also been placed at critical locations where shoreline erosion has threatened the highway. The proposed Holly Beach measure is compatible with and would augment these prior efforts. There have been proposals to construct shore protection measures along the Gulf where the proposed Gulf shoreline restoration [Calcasieu River to Freshwater Bayou (6b1, 6b2, and 6b3)] measures are located, but no projects have been built.

The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse cumulative impacts.

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

Response: Implementing the Nonstructural NED RP measures would not result in any detrimental discharges of suspended solids into coastal waters. Rather, the Nonstructural NED RP would reduce damages



resulting from hurricane and storm surge by: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. In addition, the use of the best available practical techniques and BMPs to avoid, minimize and reduce the potential for detrimental changes in littoral and sediment transport processes. The Nonstructural NED RP measures are typically far removed from coastal waters and discharges into coastal waters is not part of the planned nonstructural construction. In addition, the best available practical techniques and the best available practical techniques and BMPs would be used for all, but especially those structures located adjacent to waterways, to avoid and minimize potential detrimental discharges of suspended solids and turbidity.

Implementing the NER RP measures would have temporary and localized effects primarily due to disturbance of waterbottoms during dredging and construction activities (dredging temporary access corridors, dredging and placement operations for marsh restoration, and placement of rock and geotextile fabric for shoreline protection measures). However, these temporary and localized impacts would be minimized and reduced by the best available practical techniques and BMPs during construction. During marsh restoration, effluent from the dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. The placement of rock for the shoreline protection measures is expected to result in the disturbance of water bottom, causing a minor, temporary, and localized increase in suspended particulate/turbidity levels. Following construction activities, turbidity levels in the vicinity of measures would return to those which existed prior to construction activities. **Tables 3, 4, and 5** provide estimated construction intervals for each NER RP measure. Reforestation of cheniers would not involve discharges of suspended solids into coastal waters. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts of discharges of suspended sediments into coastal waters.

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

Response: Implementation of the Nonstructural NED RP measures would not reduce or block water flows or natural circulation patterns. Rather, the Nonstructural NED RP would reduce damages resulting from hurricane and storm surge by: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The Nonstructural NED RP measures are typically far removed from coastal waters and reductions or blockage of water flow or natural circulation patterns within an estuarine or wetland forest is not part of the planned nonstructural construction. In addition, the best available practical techniques and the best available practical techniques and BMPs would be used especially for those structures located nearby estuarine or wetland forests.

The NER RP dredging and construction of temporary access corridors, the nine marsh restoration measures and the five shoreline protection measures would have little, if any, significant reductions or blockages of water flows or natural circulation patterns within or into an estuarine or wetland forest. The higher substrate elevations resulting from marsh restoration of shallow open water and fragmented marsh areas may slightly change or modify, at a local scale, throughput (current patterns and flow) of water over the footprint of each of these measures. The five shoreline protection measures are specifically designed to reduce the erosive effects of wind-driven waves, tidal and storm surges that cause erosion of shorelines. However, overall basin current patterns and flows would be similar to that which existed prior to the widespread coastal marsh fragmentation, degradation, and loss we are currently experiencing. In addition shoreline protection measures would include fish dips which would allow tidal and other water flows to proceed unimpeded by these measures. These impacts are considered positive and would provide protection of back marsh lands in an otherwise degrading marsh area. Chenier reforestation would not involve any activities that could potentially reduce or block water flows or natural circulation patterns.



However, the Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measure are both being recommended for long-term study. Part of the reasoning for recommending these measures for long-term study is because of their potential for altering salinity regimes. These measures would not be constructed without the authority for additional study, NEPA analysis and associated environmental compliance coordination and permits. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts or blockage of water flows or natural circulation patterns within the estuarine and wetland forest systems.

m) Discharges of pathogens or toxic substances into coastal waters.

Response: The Nonstructural NED RP would not discharge pathogens or toxic substances into coastal waters. Rather, the Nonstructural NED RP property owners must execute an authorization for entry which would grant USACE and the NFS authorization to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing limited environmental testing and a hazardous, toxic, and radioactive waste (HTRW) assessment, evaluating the condition of the structure, determining elevation requirements, verifying the current elevation, performing an appraisal, and conducting other activities necessary for USACE to make a determination of structure eligibility. The property owner must submit satisfactory proof of ownership and a current Elevation Certificate. Title research and appraisals would be completed by the NFS. The property must have clear title. The property owner would be responsible to clear the title of all ownership issues and obtain any necessary subordination agreements from holders of liens, encumbrances, or third party interests at the property owner's sole expense; the failure to provide clear title shall result in a determination of ineligibility. An ASTM Phase I HTRW/Asbestos investigation (and if warranted, may be accompanied by additional HTRW investigations), inspections, surveys, and boundary monumentations would be completed. The land and the structure must be certified as "clean" by the appropriate State office before any Project funds may be expended. All asbestos must be abated and disposed of properly. Asbestos impacted by flood proofing would be removed at Project cost, while HTRW impacted by flood proofing must be remediated by the property owner prior to the initiation of the flood proofing work. After all inspections, investigations, assessments, and other activities are completed, a determination of eligibility for elevation would be made by USACE. The best available practical techniques and the best available practical techniques and BMPs would be used especially for avoiding, reducing and minimizing potential discharges of pathogens or toxic substances into coastal waters.

A Phase I environmental site assessment of the NER RP project area was conducted in accordance with applicable sections of the American Society for Testing and Materials (ASTM) Standard E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process; ASTM Standard E2247-08, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property; the U.S. Environmental Protection Agency (USEPA) 40 CFR Part 312 Standards and Practices for All Appropriate Inquiry, Final Rule; and BEM's scope of work dated 16 December 2014 to assess for the presence of HTRW within the ASTM E1527-13 recommended approximate minimum search distance of 1 mile from the NER RP restoration measures. The majority of the recognized environmental conditions and areas of environmental concern within the project area are located: 1) adjacent to Highway 82 on the east side of Grand Chenier and from the right descending bank of the Calcasieu Ship Channel east to Highway 27 and in the northern vicinity of Hackberry adjacent to Highway 27; 2) along Freshwater Bayou. However, records indicate that the majority of these sites have been cleaned, remediated, and closed. Based on the Phase I environmental site assessment, the proposed restoration activities within the NER RP project area would likely result in the "capping" of any potentially impacted areas through the placement of overlying materials that may include dredged sand and sediment, rocks, and placement of reinforced structures. This action would potentially minimize future recognized environmental conditions and environmental concerns from existing petroleum or metal-impacted sediment through the placement of the overlying dredged materials. The NER RP would utilize the best available practical techniques and BMPs during



dredging and construction to avoid and minimize potential adverse impacts or discharges of pathogens or toxic substances into coastal waters.

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

Response: The CEMVN released a 30-day public notice as part of its responsibilities under 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. § 306108). USACE has determined that implementation of the Southwest Coastal Louisiana Study would result in undertakings that have the potential to cause effects on properties listed in or eligible for listing in the National Register of Historic Places (NRHP), and has elected to fulfill its Section 106 obligations through execution and implementation of two Programmatic Agreements as provided for in 36 CFR § 800.14(b). Interested persons were notified by public notice and are hereby notified that the USACE, in consultation with the Advisory Council on Historic Preservation (ACHP), the Louisiana State Historic Preservation Officer (SHPO), the Louisiana Coastal Protection and Restoration Authority Board (CPRAB), and federally-recognized Indian Tribes, has developed two Draft PAs for the SWC Study, one for the Nonstructural NED RP and one for the NER RP.

The Draft PAs contain Stipulations to include: Consultation and Coordination; Standards, Identification and Evaluation of Historic Properties; Historic Properties Affected; Resolution of Adverse Effects; Curation; Discovery of Human Remains; Unanticipated Discoveries and Effects; Dispute Resolution; Administration, Effect, and Duration; Comprehensive Review; and Amendment and Termination. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse impacts or adverse alteration or destruction of archeological, historical, or other cultural resources.

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

Response: There would be no likely potential detrimental secondary impacts in undisturbed or biologically highly productive wetland areas associated with implementing the Nonstructural NED RP. Rather, implementing the Nonstructural NED RP would include: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. These areas are characterized as previously disturbed residential and business areas that are not biologically productive or undisturbed wetland areas. Potential detrimental secondary impacts of implementing the Nonstructural NED RP would generally be short term and localized impacts associated with construction activities involved with elevating, dry flood proofing, and construction of flood proofing barriers or berms less than 6 foot in height. Secondary impacts in most instances would be temporary and localized and include: disruption and congestion of vehicular traffic patterns in the immediate vicinity of structures undergoing risk reduction; noise; dust; diesel and gas engine fumes emissions; vibration; emissions of construction wastes; greenhouse gas emissions; increased local electricity and fuel consumption; and local increases in the number of vehicles, construction equipment and workers in the vicinity of those structures undergoing risk reduction. However, the best available practical techniques and BMPs would be used to avoid, minimize and reduce potential adverse disruption of social patterns. Following construction, these areas would once again be available for social patterns and human habitations and uses similar to pre-construction social patterns. The Nonstructural NED RP would use the best available practical techniques and the best available practical techniques and BMPs to avoid, reduce and minimize the potential for adverse secondary impacts on undisturbed or biologically highly productive wetland areas.

Implementation of the NER RP would significantly and positively effect, increase and protect estuarine wetlands in the project area and, in turn, provide and protect important, essential and in some instances critical habitats used by various terrestrial and aquatic organisms for shelter, nesting, feeding, roosting, cover, nursery, EFH and other life requirements; as well as increase productivity. Nevertheless, potential adverse secondary impacts of implementing the NER RP could be effects on aquatic ecosystems and organisms, including



plankton, would be primarily associated with construction activities and would include increased turbidity and total suspended solids, increased water temperatures and lower dissolved oxygen. These temporary and localized effects would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. Potential temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction.

During marsh restoration, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. Following construction plankton conditions would return to those observed prior to construction. The restored and protected marsh would provide increased estuarine habitat suitable for recolonization. The 35 chenier reforestation measures would have no impacts on plankton as they are removed from water areas. Adverse secondary effects on benthos would primarily be associated with construction activities and include smothering and permanent loss of sessile and slower moving benthic organisms during placement of borrow sediments for marsh restoration as well as during placement of geotextile fabric and rock for shoreline protection. More mobile benthic organisms could move out of the immediate construction areas. Following construction activities, marsh bottoms would be rapidly recolonized by benthic organisms within 1-3 years (Wilber et al. 2008). Rocks for shoreline protection measures would provide substrate and micro habitats suitable for some smaller organisms and benthos. Other impacts would include temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. These temporary and localized impacts can inhibit photosynthesis and affect respiration of benthic organisms by silt deposition on respiratory structures. However, these temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. It is not anticipated that the 35 chenier reforestation measures would have any impacts on benthos.

Sessile and slow-moving nekton would be smothered and permanently lost by placement of borrow sediments during dredging and marsh restoration as well as during placement of geotextile fabric and rock for shoreline protection. However, most nekton are mobile and would be displaced from nine marsh restoration measures and five shoreline protection measures. Much of the marsh restoration sites would be temporarily unavailable for nekton or other aquatic organisms during construction and until containment/exclusion dikes degrade naturally or as part of project construction at three years following construction, after which nekton would have access to the newly restored marsh. The open water areas where shoreline protection sites would be constructed would be permanently unavailable for use by nekton. However, gaps in the shoreline protection would allow aquatic organism access to back marsh areas. Construction activities would be temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. These temporary and localized impacts can inhibit predator-prey interactions and affect respiration of nekton by silt deposition on respiratory structures. However these temporary impacts would not likely impact most nekton, which are generally mobile enough to avoid areas during construction. In addition, these temporary and localized impacts would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. It is not anticipated that the 35 chenier reforestation measures would have any impacts on benthos. Sediments in marsh restoration areas would differentially settle following construction into higher and lower lying lands enabling reestablishment of natural water connections for access of aquatic organisms from nearby and adjacent waters. Marsh restoration measures would also provide essential fish habitat for Federally-managed species. Rock placed for shoreline protection would provide a variety of micro-habitats and substrates for various prey species that could be utilized by nekton. It is not anticipated that the 35 Chenier reforestation measures would have any impacts on nekton.



Secondary effects on the aquatic food web would be temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen that would occur only during construction of the nine marsh restoration measures and five shoreline protection measures. Although these temporary and localized impacts can disrupt and inhibit predator-prey interactions, they would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. During construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. The aquatic food web would benefit from both short and long term changes to the marsh restoration disposal areas, including additions in energy to basal elements of the food web, habitat preservation, and increased habitat complexity. Nutrients and detritus released during the discharge of dredged sediments into marsh restoration areas would be added to the existing food web. It is not anticipated that the 35 chenier reforestation measures would have any impacts on aquatic food web.

Some existing vegetated shallows would be significantly and permanently impacted by marsh restoration and nourishment of nine marsh restoration measures and five shoreline protection measures around Calcasieu Lake. Permanent impacts to state waterbottoms through the conversion to marsh or the placement of rock include 14,346 acres from the nine marsh restoration measures and 278.4 acres from the five shoreline protection measures. This would result in the vegetation being covered by fill material. Not all of these shallow-water areas are vegetated (range of 0 to 40% coverage). In addition, proposed measures would encourage the growth of submerged aquatic vegetation such as through the reduction in water fetch and wave energy by shoreline protection measures.

As demonstrated through Wetland Value Assessments, the proposed action would improve the quality of wetlands. Compared to the No Action Alternative and future without project conditions, implementing the NER RP would result in an overall net gain marsh acres and AAHUs. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential adverse secondary impacts in undisturbed or biologically highly productive wetland areas.

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

Response: The CEMVN has determined that the proposed action “may affect but will not likely adversely affect” the piping plover or its critical habitat, red knot, Sprague's pipit, West Indian manatee, Gulf sturgeon, loggerhead and Kemps Ridley sea turtles; would have no effect on the Red-cockaded woodpecker, green, leatherback, and hawksbill sea turtles or loggerhead critical habitat and would not adversely impact other species of concern that could potentially be found in the project area. No unique or valuable habitats would be adversely affected. The Migratory Bird Treaty Act (MBTA) and the Migratory Bird Conservation Act (MBCA) protect migratory birds and their habitat. Many important habitats in the project area provide migratory bird shelter, nesting, feeding and roosting habitat. All construction activities shall observe a buffer of 1,000 feet for any colonial-nesting waterbird colonies (e.g., egrets, herons, ibis, pelicans, etc.), 1,300 feet for any shorebird nesting colonies (e.g., terns, gulls, plovers, skimmers, etc.), and 2,000 feet for any brown pelican nesting colonies near the project measure. Based upon a field survey conducted in June 2015 for active colonial-nesting waterbird colonies, one active colonial-nesting waterbird colony was observed within 1,000 feet of the proposed construction limits of NER RP marsh restoration measure 3a1 within the Calcasieu restoration area. Additionally, a shorebird nesting colony was recorded within 1,300 feet of the proposed construction limits of breakwater measure 6b2 within the Rockefeller restoration area. USFWS and USACE biologists would survey the area before construction to confirm active rookery locations. If colonial-nesting waterbird colonies exist within 1,000 feet, if shorebird colonies exist within 1,300 feet, or if brown pelican nesting colonies exist within 2,000 feet of the proposed action, this could be a project constraint. USFWS guidelines would be followed to avoid adverse impacts to these species.

Temporary and localized increases in turbidity and total suspended solids, increased water temperatures and decreased dissolved oxygen would occur only during dredging and construction of the nine marsh restoration



measures and the five shoreline protection measures. Although these temporary and localized impacts can disrupt and preclude wildlife from using the marsh restoration and shoreline protection areas, they would be minimized and controlled by utilizing the best available practical techniques and BMPs during construction. Also during construction of marsh restoration measures, effluent from dredge discharge pipe would be directed to adjacent fragmented marsh for nourishment. However, these temporary and localized adverse effects would be offset by the proposed action restoration and protection of estuarine marsh habitats which can provide an array of foraging, breeding, and cover habitat for a variety of birds, mammals, reptiles and other wildlife species.

Two marsh restoration measures, located partially on USFWS properties, are recommended for construction by the USFWS. Measure 124d Marsh Restoration at Mud Lake would be located on Sabine NWR. Measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR (**Figure 9**). NER RP measure 124d would initially restore (159 acres), nourish (448 acres) a total of 607 acres that would provide over the 50 year period of analysis 168 net acres and 4 AAHUs which would synergistically benefit the Sabine NWR. NER RP Measure 3c1 would initially create (1,347 acres) and nourish (734 acres) a total of 2,081 acres that would provide over the 50 year period of analysis 1,324 net acres and 607 AAHU which would synergistically benefit the Cameron Prairie NWR. The implementation of three of the five shoreline protection measures (6b1, 6b2, and 6b3) would have a significant and long-term positive effect on wetlands in the Rockefeller State Wildlife Refuge and Game Preserve (Rockefeller Refuge). The installation of a field of light-weight aggregate core rock breakwaters offshore of the Gulf of Mexico shoreline of the Rockefeller Refuge would decrease the wave energy reaching the shoreline, which would reduce background erosion rates, protecting existing saline wetlands. The other NER RP measures would not impact other parks, national historic monuments, national seashores, wilderness areas, research sites, and similar preserves.

Many of the NER RP measures would be constructed in the immediate vicinity of other existing coastal restoration projects, including CWPPRA projects (**Figure 5**). However, NER RP measure 124c—Marsh Restoration at Mud Lake) and 3c1—Beneficial Use of Dredged Material from Calcasieu Ship Channel) would directly overlap projects CS-59—Oyster Bayou Marsh Creation and Terracing (**Figure 6**) and CS-54—Cameron-Creole Watershed Grand Bayou Marsh Creation (**Figure 7**), respectively. Figure 124c would overlap CS-59 by 821 acres. Measure 3c1 would overlap CS-54 by 65 acres. When overlap occurs, NER RP measures would be constructed to avoid the existing projects. This would generally include construction of temporary containment/exclusion dikes that would not only contain dredged borrow effluent sediments until it has dewatered and consolidated, but would also function to exclude any dredged effluents from entering existing project sites. These temporary containment/exclusion dikes would either naturally degrade to restore connectivity with surrounding areas, or they do not naturally degraded, they would be degraded three years after construction has been completed if to allow hydrologic connectivity to the surrounding area.

In addition to directly impacting the above cited projects, existing mitigation projects also located within areas proposed for restoration under the NER RP would be directly impacted. Mitigation projects are designed and constructed to offset anticipated losses from permitted activities. **Figure 8** and **Table 6** contains information about mitigation projects that occur within the project area. In most instances, these mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. When overlap occurs, proposed NER RP measures would not be constructed until the mitigation projects satisfy their 20-year permitted obligations.

Actions to Minimize Impacts: Dredged sediments would be placed for the nine marsh restoration sites to achieve a post-construction target elevation following dewatering that would be suitable for natural colonization by marsh vegetation. During construction, effluent from dewatering would be discharged into adjacent wetlands via spill box weirs. Temporary earthen containment/exclusion dikes would be constructed from in-situ material located within the marsh restoration/nourishment area using a mechanical (clamshell or bucket) dredge. Temporary access for the mechanical dredge would be via the pipeline corridor. The borrow area used for construction of the earthen containment dike would be refilled during the placement of dredged material. One foot of freeboard would be maintained at all times during dredge discharge operations. Containment/exclusion



dikes would be breached in multiple places at three years post construction if necessary to restore connectivity and fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. The Nonstructural NED RP and NER RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts special aquatic sites and to surrounding aquatic and terrestrial environment.

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

Response: See above response to “p) adverse alteration or destruction of unique or valuable habitats, critical habitat for endangered species, important wildlife or fishery breeding or nursery areas, designated wildlife management or sanctuary areas, or forestlands.” No other public parks, shoreline access points, public works, or designated recreation areas would be adversely altered by either the Nonstructural NED RP or NER RP. The Nonstructural NED RP and NER RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts on public parks, shoreline access points, public works, designated recreation areas, scenic rivers, or other areas of public use and concern

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

Response: The Nonstructural NED RP measures include: elevating eligible residential structures; dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The Nonstructural NED RP measures are located in previously disturbed residential and business areas far removed from coastal wildlife and fish. Hence, the Nonstructural NED RP would not adversely disrupt coastal wildlife or fishery migratory patterns. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts on coastal wildlife and fishery migratory patterns.

Over the 50-year period of analysis, the NER RP would protect, restore, and nourish a total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration (2,700 AAHUs) and shoreline protection measures (1,738 AAHUs) together would achieve a total net ecological benefit of 4,430 AAHUs. Whereas the chenier reforestation measures would restore a net total of 1,413 net acres with 538 AAHUs. The implementation and operation of the NER RP measures would not disrupt coastal wildlife or fishery migratory patterns in the long term. However, during construction and dredging operations of the access corridors, the borrow sites, the nine marsh restoration sites, the five shoreline protection sites and the 35 chenier reforestation sites would temporarily be unavailable for use by fish and wildlife. Following construction, these areas would return to availability for use by fish and wildlife. By design, the five shoreline protection measures would no longer be available to fish. Shoreline protection measures would, however, include fish dips which would allow tidal and other water flows, fish and other aquatic organisms to proceed unimpeded by these measures into back marsh areas. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts on coastal wildlife and fishery migratory patterns.

s) land loss, erosion and subsidence.

Response: The Nonstructural NED RP measures, by design, would reduce damages resulting from hurricane and storm surge by elevating eligible residential structures; dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The Nonstructural NED RP measures are located in previously disturbed residential and business areas and would not cause significant land loss, erosion or subsidence. The Nonstructural NED RP



would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding land loss, erosion and subsidence.

The NER RP measures would not cause land loss, erosion, or subsidence. Rather, The NER RP nine marsh restoration measures would introduce borrow sediments from the Calcasieu Ship Channel and the Gulf of Mexico designated borrow sites for the purpose of marsh restoration. At the end of the 50 year period of analysis, the nine marsh restoration measures reducing local land loss by restoring (creating and nourishing) a total of 7,900 net acres with 2,700 AAHUs. The NER RP five shoreline protection measures would provide 251,528 linear feet of shoreline protection that over the 50 year period of analysis would protect 6,135 net acres with 1,738 AAHUs. The chenier restoration measures analysis, would restore a net total of 1,413 net acres with 538 AAHUs. The NER RP would utilize the best available practical techniques and BMPs for ecosystem restoration and shoreline protection to avoid, minimize and reduce potential adverse impacts regarding land loss, erosion and subsidence.

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

Response: The Nonstructural NED RP would not increase the potential for flood, hurricane, or other storm damage, or increase the likelihood of damage from such hazards. Rather, the Nonstructural NED RP would reduce flood risk for residential and non-residential structures that have first floor elevations at or below the 0-25-year floodplain, based on hydrologic conditions predicted to occur in 2025 (the beginning of the 50 year period of analysis). The Nonstructural NED RP would provide reduced risk of damages resulting from hurricane and storm surge flood for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for flood, hurricane or other storm damage, or increases in the likelihood that damage would occur from such hazards.

The NER RP would not increase the potential for flood, hurricane, or other storm damage, or increase the likelihood of damage from such hazards. Rather, over the 50-year period of analysis the NER RP would restore, nourish and protect a net total of 14,035 net acres of transitional estuarine marsh, including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures. At the end of the 50 year period of analysis, the marsh restoration (2,700 AAHUs) and shoreline protection measures (1,738 AAHUs) together would achieve a total net ecological benefit of 4,430 AAHUs. Whereas the chenier restoration measures analysis, would restore a net total of 1,413 net acres with 538 AAHUs. In addition, the nine marsh restoration measures and the five shoreline protection measures would provide an unquantified roughness factor that would help reduce, to some undetermined extent, the adverse effects of flood, hurricane and other storm damages. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for flood, hurricane or other storm damage, or increases in the likelihood that damage would occur from such hazards.

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

Response: The Nonstructural NED RP measures are located in previously disturbed residential and business areas and would not reduce long-term biological productivity of the coastal ecosystem. Rather, the Nonstructural NED RP would reduce flood risk for residential and non-residential structures that have first floor elevations at or below the 0-25-year floodplain, based on hydrologic conditions predicted to occur in 2025 (the beginning of the 50 year period of analysis). The Nonstructural NED RP would provide reduced risk of damages resulting from hurricane and storm surge flood for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical



techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for reductions in the long-term biological productivity of the coastal ecosystem.

The NER RP would not reduce long-term biological productivity of the coastal ecosystem. Rather over the 50-year period of analysis the NER RP would restore, nourish and protect a net total of 14,035 net acres of transitional estuarine marsh, including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures. At the end of the 50 year period of analysis, the marsh restoration (2,700 AAHUs) and shoreline protection measures (1,738 AAHUs) together would achieve a total net ecological benefit of 4,430 AAHUs. Whereas the chenier restoration measures analysis, would restore a net total of 1,413 net acres with 538 AAHUs. The NER RP, as determined by the Wetland Value Assessment and quantified AAHUs, would improve the biological productivity of the ecosystem in the project area. There would be an overall net gain of AAHUs (see **Tables 4, 5, and 6**). The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for reductions in the long-term biological productivity of the coastal ecosystem.

Guideline 1.8 In those guidelines in which the modifier "maximum extent practicable" is used, the proposed use is in compliance with the guideline if the standard modified by the term is complied with. If the modified standard is not complied with, the use will be in compliance with the guideline if the permitting authority finds, after a systematic consideration of all pertinent information regarding the use, the site and the impacts of the use as set forth in guideline 1.6, and a balancing of their relative significance, that the benefits resulting from the proposed use would clearly outweigh the adverse impacts resulting from non compliance with the modified standard and there are no feasible and practical alternative locations, methods and practices for the use that are in compliance with the modified standard and: a) significant public benefits will result from the use, or; b) the use would serve important regional, state or national interests, including the national interest in resources and the siting of facilities in the coastal zone identified in the coastal resources program, or; the use is coastal water dependent. The systematic consideration process shall also result in a determination of those conditions necessary for the use to be in compliance with the guideline. Those conditions shall assure that the use is carried out utilizing those locations, methods and practices which maximize conformance to the modified standard; are technically, economically, environmentally, socially and legally feasible and practical and minimize or offset those adverse impacts listed in guideline 1.7 and in the guideline at issue.

Response: Acknowledged.

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

Response: The Nonstructural NED RP measures are located in previously disturbed residential and business areas and would only be unavailable for multiple concurrent uses during flood risk reduction construction activities. Following construction, areas subjected to construction impacts would be restored at least to their natural pre-construction condition using the best available restoration techniques, the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to multiple concurrent uses Natural waterways would not be closed.

During dredging and construction activities, the NER RP nine marsh restoration and five shoreline protection measure sites, temporary access corridors and borrow sites would not be available for multiple concurrent uses. However, following dredging and construction activities and over the 50-year period of analysis, the NER RP measures would be available for, and provide even greater opportunities for multiple concurrent uses. The NER RP would restore, nourish and protect a net total of 14,035 net acres of transitional estuarine marsh, including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures. At the end of the 50 year period of analysis, the marsh restoration (2,700 AAHUs) and



shoreline protection measures (1,738 AAHUs) together would achieve a total net ecological benefit of 4,430 AAHUs. Whereas the chenier restoration measures analysis, would restore a net total of 1,413 net acres with 538 AAHUs. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for multiple concurrent uses which are appropriate for the location and to avoid unnecessary conflicts with other uses of the vicinity.

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

Response: Acknowledged.

1. GUIDELINES FOR LEVEES

Guideline 2.1 The leveeing of unmodified or biologically productive wetlands shall be avoided to the maximum extent practicable.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of levees. However, the Nonstructural NED RP includes construction of localized hurricane and storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. These measures are intended to reduce the frequency of flooding but not eliminate floodplain management and flood insurance requirements. These risk reduction measures can be constructed of earth, concrete, masonry, or steel and placed around a single structure or a contiguous group of structures. Some local governments may have adopted floodplain management rules that exceed the minimum requirements of the NFIP, and may limit the ability of certain flood-proofing measures to be constructed if the effects of the localized storm surge risk reduction measures create the potential for drainage problems by displacing flood storage. The use of berms is for individual structures only and would not levee unmodified or biologically productive wetlands. The Nonstructural NED RP would provide reduced risk of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses.

The NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. The NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion to 6,135 net acres. The Nonstructural NED and NER RPs would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential for leveeing of unmodified or biologically productive wetlands shall be avoided to the maximum extent practicable.

Guideline 2.2 Levees shall be planned and sited to avoid segmentation of wetland areas and systems to the maximum extent practicable.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of levees. However, the Nonstructural NED RP includes construction of localized storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. However, this proposed action would not involve the construction of levees. The use of berms is for individual structures only and have been planned and sited to avoid segmentation of wetland areas and systems to the maximum extent practicable. The Nonstructural NED RP would utilize the best available



practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding the potential to segment wetland areas and systems.

The NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. The NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion to 6,135 net acres. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding potential to segment wetland areas and systems.

Guideline 2.3 Levees constructed for the purpose of developing or otherwise changing the use of a wetland area shall be avoided to the maximum extent practicable.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of levees. However, the Nonstructural NED RP include construction of localized storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. The proposed action would not involve the construction of levees. The use of berms is for individual structures and would not be constructed for the purpose of developing or otherwise changing the use of a wetland area. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding the potential of developing or otherwise changing the use of a wetland area.

The NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. The NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion to 6,135 net acres. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts regarding the potential of developing or otherwise changing the use of a wetland area.

Guideline 2.4 Hurricane and flood protection levees shall be located at the non-wetland/wetland interface or landward to the maximum extent practicable.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of levees. However, the Nonstructural NED RP include construction of localized storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. The proposed action would not involve the construction of levees. The use of berms is for individual structures would typically be constructed landward of wetland areas; or, if necessary at the non-wetland/wetland interface. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wetland areas.

By design, the NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. By design, the NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion



to 6,135 net acres. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wetland areas.

Guideline 2.5 Impoundment levees shall only be constructed in wetland areas as part of approved water or marsh management projects or to prevent release of pollutants.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of permanent impoundment levees or water or marsh management projects. However, the Nonstructural NED RP include construction of localized storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. The use of berms is for individual structures would typically be constructed landward of wetland areas; or, if necessary at the non-wetland/wetland interface. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wetland areas and prevent the release of pollutants.

By design, the NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. By design, the NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion to 6,135 net acres. However, the five shoreline protection measures would not function as impoundment levees. Rather, shoreline protection measures would reduce wave induced erosion to marsh. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to wetland areas and prevent the release of pollutants.

Guideline 2.6 Hurricane or flood protection levee systems shall be designed, built and thereafter operated and maintained utilizing best practical techniques to minimize disruptions of existing hydrologic patterns, and the interchange of water, beneficial nutrients and aquatic organisms between enclosed wetlands and those outside the levee system.

Response: Implementation of the Nonstructural NED RP and the NER RP would not involve the construction of hurricane or flood protection levee systems. However, by design the Nonstructural NED RP includes construction of localized storm surge risk reduction measures less than 6 feet in height around industrial complexes and warehouses that are eligible for the Project. The use of berms is for individual structures only and would be designed, built and thereafter operated and maintained utilizing best practical techniques to minimize disruptions of existing hydrologic patterns, and the interchange of water, beneficial nutrients and aquatic organisms between enclosed wetlands and those outside the proposed berm system. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to minimize disruptions of existing hydrologic patterns, the interchange of water, beneficial nutrients and aquatic organisms and wetlands.

By design, the NER RP would construct temporary containment/exclusion dikes at the nine marsh restoration sites to temporarily contain dredged sediments for marsh restoration and prevent dredged effluent from adversely impacting adjacent existing coastal restoration projects and other areas not designed to be restored or nourished. However, following de-watering and consolidation the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years post-construction to allow for tidal exchange and aquatic organism access. By design, the NER RP would also construct 251,528 linear feet of shoreline protection that could would reduce wave induced shoreline erosion to 6,135 net acres. However, the five shoreline protection measures would not function as hurricane or flood protection levee systems. Rather, shoreline protection measures would reduce wave induced erosion to marsh. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid and minimize potential



adverse impacts and to minimize disruptions of existing hydrologic patterns, the interchange of water, beneficial nutrients and aquatic organisms and wetlands.

2. GUIDELINES FOR LINEAR FACILITIES

Guidelines 3.1 through 3.16: **Guideline 3.1 Linear use alignments shall be planned to avoid adverse impacts on areas of high biological productivity or irreplaceable resource areas.**

Response: By design, the Nonstructural NED RP includes construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The use of berms is for individual structures only and have been planned to avoid adverse impacts on areas of high biological productivity or irreplaceable resource areas. These berms would be constructed in previously disturbed areas characterized as residential or businesses and would not adversely impact areas of high biological productivity or irreplaceable resource areas. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to avoid adverse impacts of high biological productivity or irreplaceable resource areas.

By design, the NER RP nine marsh restoration measures would include construction of temporary containment/exclusion dikes to contain dredged sediment and allow them to dewater and consolidate into marsh habitat. Following de-watering and consolidation, the temporary containment/exclusion dikes are expected to naturally degrade or would be degraded, if necessary, three years following construction to allow for tidal exchange and aquatic organism access. These temporary containment/exclusion dikes would not adversely impact areas of high biological productivity or irreplaceable resource areas. Rather, the nine marsh restoration measures would restore a net total of 7,900 net acres with 2,700 AAHUs. By design, the five shoreline protection/stabilization measures are designed to be linear facilities that would provide a total 251,528 linear feet of shoreline stabilization and protection of approximately 6,135 net acres and 1,738 AAHUs of marsh wetlands that are typically high in biological productivity in an area that is presently experiencing significant rates of land loss. The 35 chenier reforestation sites in Cameron and Vermilion Parishes would provide approximately 1,413 net acres over the 50 year period of analysis resulting in 538 AAHUs. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to avoid adverse impacts of high biological productivity or irreplaceable resource areas.

Guideline 3.2 Linear facilities involving the use of dredging or filling shall be avoided in wetland and estuarine areas to the maximum extent practicable.

Response: By design, the Nonstructural NED RP would not include dredging or filling in wetlands or estuarine areas. However, the Nonstructural NED RP includes construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. The use of berms is for individual structures only and would be constructed in previously disturbed areas characterized as residential or businesses and are designed to avoid adverse impacts on wetlands and estuarine areas. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to avoid adverse impacts to wetlands and estuarine areas to the maximum extent practicable.

By design, the NER RP nine marsh restoration measures include the construction of temporary containment/exclusion dikes. Following de-watering and consolidation, the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years following construction, if necessary, to allow for tidal exchange and aquatic organism access. By design the linear shoreline protection/stabilization measures are specifically designed to provide 251,528 linear feet of shoreline protection and stabilization for approximately 6,135 net acres and 1,738 AAHUs. Although not impacting wetlands or estuarine areas, the 35 chenier reforestation sites in Cameron and Vermilion Parishes would reforest approximately 1,413 net acres over the 50 year period of analysis, resulting in 538 AAHUs. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize



and reduce potential adverse impacts to avoid adverse impacts to wetlands and estuarine areas to the maximum extent practicable.

Guideline 3.3 Linear facilities involving dredging shall be of the minimum practical size and length.

Response: Acknowledged.

Guideline 3.4 To the maximum extent practicable, pipelines shall be installed through the "push ditch" method and the ditch backfilled.

Response: The NED and NER RP would not entail installation of any permanent pipelines. However, for NER RP marsh restoration measure 124c, the temporary dredge pipeline would be bored under Louisiana Highway 82. Following dredging and construction, the temporary pipeline boring would be refilled and the area restored to pre-construction conditions. All of the NER RP marsh restoration measures would involve the temporary use of hydraulic dredge pipelines to move sediments dredged from identified borrow sites to the identified nine marsh restoration sites. The dredge pipelines would be located along identified pipeline corridors that would be returned to pre-construction conditions following completion of marsh restoration activities. For the NER RP five shoreline protection measures, identified temporary access corridors would be dredged and then backfilled following completion of construction activities for the five shoreline protection measures. The Nonstructural NED RP and the NER RP would utilize the best available practical techniques and BMPs during construction to avoid and minimize potential adverse impacts to the surrounding aquatic and terrestrial environment.

Guideline 3.5 Existing corridors, rights of way, canals, and streams shall be utilized to the maximum extent practicable for linear facilities.

Response: Acknowledged. The Nonstructural NED RP measures of elevating, dry flood proofing, and construction of flood proofing barriers or berms of less than 6 feet in height would be constructed on previously disturbed residential and business areas. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts.

By design, dredging and construction of the NER RP measures would utilize, to the maximum extent practicable, existing corridors, rights of way, canals, and streams in construction of the nine marsh restoration measures, the five shoreline protection measures and the 35 chenier reforestation measures. Designated access routes (see Fact Sheets) would be repeatedly reused to the maximum extent practicable. During subsequent renourishment of the nine marsh restoration sites and maintenance of the shoreline protection measures, the initial access corridors would be re-utilized to the maximum extent practicable. The NER RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts.

Guideline 3.6 Linear facilities and alignments shall be, to the maximum extent practicable, designed and constructed to permit multiple uses consistent with the nature of the facility.

Response: By design, the only permanent linear measures of the Nonstructural NED RP would be construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. During construction, the berm measures would be temporarily unavailable for multiple uses. Following construction, the berms would permit multiple uses consistent with the design purpose and nature of the berms and permit multiple uses.

By design, the NER RP nine marsh restoration measures include the construction of temporary containment/exclusion dikes. Following de-watering and consolidation, the temporary containment/exclusion dikes are expected to naturally degrade or they would be degraded at three years following construction, if necessary, to allow for tidal exchange and aquatic organism access. By design, the five linear shoreline protection/stabilization measures are specifically designed to provide 251,528 linear feet of shoreline protection



and stabilization for approximately 6,135 net acres and 1,738 AAHUs. These linear NER RP measures would be unavailable for multiple uses during dredging and construction activities. Following dredging and construction, these areas would permit multiple uses consistent with their design purpose and nature. Although not impacting wetlands or estuarine areas, the 35 chenier reforestation sites in Cameron and Vermilion Parishes would reforest approximately 1,413 net acres over the 50 year period of analysis, resulting in 538 AAHUs. The Nonstructural NED RP would utilize the best available practical techniques and BMPs during construction to avoid, minimize and reduce potential adverse impacts to avoid adverse impacts to wetlands and estuarine areas to the maximum extent practicable and permit multiple uses.

Guideline 3.7 Linear facilities involving dredging shall not traverse or adversely affect any barrier island.

Response: The Nonstructural NED RP and NER RP measures would not occur on or near any barrier islands. However, the NER RP marsh restoration measures 47a1, 47a2, 47c1, 124c, 127c3, and 306a1 would involve dredging borrow from the Gulf of Mexico and transporting, via dredge pipeline, to inland marsh restoration sites. Dredge pipelines used for restoration of measures 127c3 and 306a1 would generally follow existing canals and waterways. However, the dredge pipelines used for restoring measures 47a1, 47a2, 47c1, and 124c would cross barrier beach shoreline.

- Dredged material for construction of marsh restoration NER RP measure 47a1 material would be transported from the designated Gulf borrow site directly to the disposal site via hydraulic dredge pipeline, for a distance of approximately 6.7 miles (see Fact Sheet for Measure 47a1). Access for the pipeline would require a temporary designated access corridor approximately 30 feet wide, and would be placed along existing open-water canals to the extent practicable. Navigation traffic is not anticipated to be impacted. Any changes in beach topography resulting from placement of the dredge pipeline would be restored at least to their natural condition following construction, which would use the best available restoration techniques which improve the traversed area's ability to serve as a shoreline following pipeline removal.
- The following is applicable to NER RP measures 47a1, 47a2, and 47c1. The pipeline corridor is approximately 35,519 feet long (24 acres), and would require no dredging. Any changes in beach topography resulting from placement of the pipeline would be restored at least to their natural condition following construction, which would use the best available restoration techniques which improve the traversed area's ability to serve as a shoreline following pipeline removal. Piping plover critical habitat includes intertidal sand beaches (including sand flats) or mud flats (between the mean lower low water line and annual high tide) with no or very sparse emergent vegetation for feeding. Per USFWS protocol, the shoreline to vegetation line was digitized as a polygon, then buffered (on the water side) by 56 meters (184 feet) to approximate the mean lower-low water (MLLW) line. If necessary, a 100-foot wide bird abatement corridor across the beach would be maintained during construction to deter foraging, sheltering, and roosting of all potential migratory bird species. All construction activities shall observe a buffer zone of 1,000 feet for any colonial-nesting waterbird colonies (e.g., egrets, herons, ibis, pelicans, etc.), 1,300 feet for any shorebird nesting colonies (e.g., terns, gulls, plovers, skimmers, etc.), and 2,000 feet for any brown pelican nesting colonies near the project measure. USFWS and USACE biologists would survey the area before construction to confirm active nesting bird locations. A nesting bird abatement plan would be developed if one of the aforementioned nesting colonies falls within its respective buffer zone. Additionally, USFWS guidelines would be followed to avoid adverse impacts to the nesting colonies. Approximately 0.14 acres (200 feet long by 30 feet wide) of critical habitat is expected to be impacted temporarily by this measure. Conservation Measures would include: 1) Pipeline alignment and associated construction activities may be modified to reduce impacts to foraging, sheltering, and roosting. 2) Avoid impacts to the primary constituent elements (PCEs) of piping plover Critical Habitat to the maximum extent practicable; and 3) Evaluate the project area prior to design and construction for the presence of piping plover PCEs as a basis for minimizing potential impacts.
- Dredged material for construction of marsh restoration measure 47a2 would be transported from the designated Gulf borrow site directly to the disposal site via hydraulic dredge pipeline, for a distance of approximately 5.9 miles (see Fact Sheet for Measure 47a2). Access for the pipeline would require a



temporary designated access corridor approximately 30 feet wide, and would be placed along existing open-water canals to the extent practicable. Navigation traffic is not anticipated to be impacted. The pipeline corridor is approximately 30,898 feet long (21 acres), and would require no dredging. Any changes in beach topography resulting from placement of the pipeline would be restored at least to their natural condition following construction, which would use the best available restoration techniques which improve the traversed area's ability to serve as a shoreline following pipeline removal. Approximately 0.14 acres (200 feet long by 30 feet wide) of critical habitat for piping plover is expected to be impacted temporarily by this measure. See above description regarding beach topography, critical habitat, buffer zone and nesting bird abatement program and conservation measures.

- Dredged material for construction of marsh restoration measure 47c1 would be transported from the designated Gulf borrow site directly to the disposal site via hydraulic dredge pipeline, transported directly to the site via pipeline, for a distance of approximately 5.7 miles. Access for the pipeline would require a corridor approximately 30 feet wide, and would be placed along existing open-water canals to the extent practicable. Navigation traffic is not anticipated to be impacted. The pipeline corridor is approximately 29,858 feet long (21 acres), and would require no dredging. Any changes in beach topography resulting from placement of the pipeline would be restored at least to their natural condition following construction, which would use the best available restoration techniques which improve the traversed area's ability to serve as a shoreline following pipeline removal. See above description regarding beach topography, critical habitat, buffer zone and nesting bird abatement program and conservation measures.
- Dredged material for construction measure 124c would be transported directly to the site via pipeline, for a distance of approximately 1.8 miles. The pipeline access corridor would be approximately 30 feet wide, and would follow existing waterways to the extent possible. Navigation traffic is not anticipated to be impacted. The pipeline corridor is approximately 9,485 feet long (7.0 acres), and would require no dredging. The pipeline would cross approximately 500 feet (0.34 acres) of beach. The pipeline would be bored under Louisiana Highway 82. If necessary, a 100-foot wide bird abatement corridor across the beach would be maintained during construction to deter foraging, sheltering, and roosting of all potential migratory bird species. All construction activities shall observe a buffer zone of 1,000 feet for any colonial-nesting waterbird colonies (e.g., egrets, herons, ibis, pelicans, etc.), 1,300 feet for any shorebird nesting colonies (e.g., terns, gulls, plovers, skimmers, etc.), and 2,000 feet for any brown pelican nesting colonies near the project measure. USFWS and USACE biologists would survey the area before construction to confirm active nesting bird locations. A nesting bird abatement plan would be developed if one of the aforementioned nesting colonies falls within its respective buffer zone. Additionally, USFWS guidelines would be followed to avoid adverse impacts to the nesting colonies. Approximately 1.8 acres of critical habitat is expected to be temporarily impacted temporarily during construction of measure 124c. The best available practical techniques and BMPs would be used during construction to avoid and minimize potential adverse impacts to the barrier beach. See above description regarding beach topography, critical habitat, buffer zone and nesting bird abatement program and conservation measures.

NER RP shoreline protection measures 5a, 6b1, 6b2, and 6b3 located immediately offshore of the Gulf of Mexico barrier beach would provide a total of 180,545 linear feet of Gulf shoreline protection and stabilization to 4,847 net acres of back barrier marsh and 1,459 AAHUs over the 50 year period of analysis. The NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid, minimize and reduce potential adverse impacts to barrier islands or other barrier features.

Guideline 3.8 Linear facilities involving dredging shall not traverse beaches, tidal passes, protective reefs or other natural gulf shoreline unless no other alternative exists. If a beach, tidal pass, reef or other natural gulf shoreline must be traversed for a non navigation canal, they shall be restored at least to their natural condition immediately upon completion of construction. Tidal passes shall not be permanently widened or deepened except when necessary to conduct the use. The best available restoration techniques which improve the traversed area's ability to serve as a shoreline shall be used.

Response: See response to Guideline 3.7 above. The Nonstructural NED RP would not involve dredging or traversing beaches, tidal passes, protective reefs or other natural gulf shoreline features. The NER



RP impacts to barrier beaches described above for Guideline 3.7, are anticipated. The NER RP would not impact any other beaches, tidal passes, protective reefs or natural gulf shorelines. As described in response to Guideline 3.7 above, any dredging and construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to natural beaches, tidal passes, protective reefs or other natural gulf shorelines.

Guideline 3.9 Linear facilities shall be planned, designed, located and built using the best practical techniques to minimize disruption of natural hydrologic and sediment transport patterns, sheet flow, and water quality, and to minimize adverse impacts on wetlands.

Response: Acknowledged. See also above responses to linear facilities guidelines, especially for 1.7(h) and 1.7(i). The Nonstructural NED RP would provide reduced risk of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to minimize disruption of natural hydrologic and sediment transport patterns, sheet flow, and water quality, and to minimize adverse impacts on wetlands.

The NER RP would protect, restore, and nourish a net total of 14,035 net acres of transitional estuarine marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. The chenier restoration measures would reforest, in Cameron and Vermilion Parishes, a net total of 1,413 net acres with 538 AAHUs. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to minimize disruption of natural hydrologic and sediment transport patterns, sheet flow, and water quality, and to minimize adverse impacts on wetlands.

Guideline 3.10 Linear facilities shall be planned, designed, and built using the best practical techniques to prevent bank slumping and erosion, saltwater intrusion, and to minimize the potential for inland movement of storm generated surges. Consideration shall be given to the use of locks in navigation canals and channels which connect more saline areas with fresher areas.

Response: Acknowledged. See also above responses to linear facilities guidelines, especially for 1.7(h). By design, the Nonstructural NED RP would provide reduced risk of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts and to prevent bank slumping and erosion, saltwater intrusion, and to minimize the potential for inland movement of storm generated surges.

By design, the NER RP would protect, restore, and nourish a net total of 14,035 net acres of transitional estuarine marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. The chenier restoration measures would reforest, in Cameron and Vermilion Parishes, a net total of 1,413 net acres with 538 AAHUs. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts and to prevent bank slumping and erosion, saltwater intrusion, and to minimize the potential for inland movement of storm generated surges.



Guideline 3.11 All non-navigation canals, channels and ditches which connect more saline areas with fresher areas shall be plugged at all waterway crossings and at intervals between crossings in order to compartmentalize them. The plugs shall be properly maintained.

Response: The Nonstructural NED RP and NER RP would not construct any permanent channels or canals that would adversely affect salinity patterns. By design, however, the NER RP would construct temporary access corridors for dredge pipeline to construct the nine marsh restoration measures. In addition, construction of the five shoreline protection measures would require dredging floatation access for construction equipment and material barges.

- Measure 5a floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 479 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge would be sidecast adjacent to the channel, and returned after construction. Approximately 462 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b1 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 725 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 711 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b2 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 507 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 497 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b3 floatation dredging is anticipated for access to the site for construction equipment and material barges. Floatation excavation along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 372 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 289 acres are anticipated to be impacted by material removed from the access channels.

The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts and to ensure, if necessary, that connections between more saline areas with fresher areas shall be plugged and properly maintained, to the maximum extent practicable.

Guideline 3.12 The multiple use of existing canals, directional drilling and other practical techniques shall be utilized to the maximum extent practicable to minimize the number and size of access canals,



to minimize changes of natural systems and to minimize adverse impacts on natural areas and wildlife and fisheries habitat.

Response: The Nonstructural NED RP would not entail using canals, directional drilling or access canals. Rather, the Nonstructural NED RP would include: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. These areas are characterized as previously disturbed residential and business areas that are not natural areas or wildlife and fishery habitats. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts by the multiple by using existing canals, directional drilling and other practical techniques to the maximum extent practicable to minimize the number and size of access canals, to minimize changes of natural systems and to minimize adverse impacts on natural areas and wildlife and fisheries habitat.

Construction of the NER RP marsh restoration measures 47a1, 47a2, 47c1 would, by design, entail the use of the same access routes and natural canals for routing dredge pipelines from the borrow sites to the marsh restoration sites. Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques and BMPs to avoid changes of natural systems and adverse impacts on wildlife and fisheries habitat. In some instances, directing the dredge pipeline along the retention/exclusion dike borrow canal would allow the pipeline to avoid impacts to existing ridges and other significant landscape features. Where such features would need to be crossed, the best available practical techniques and BMPs for marsh buggy use would be applied (LDNR & LDWF 2000) and the area would be restored to pre-construction condition. Although it is anticipated that a marsh buggy would be used to place the dredge pipeline across the barrier beach for construction of marsh restoration measures 47a1, 47a2, 47c1, and 124c, the use of alternative techniques would also be considered to further avoid and minimize adverse impacts to natural areas and wildlife and fisheries habitat. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts by the multiple by using existing canals, directional drilling and other practical techniques to the maximum extent practicable to minimize the number and size of access canals, to minimize changes of natural systems and to minimize adverse impacts on natural areas and wildlife and fisheries habitat.

Guideline 3.13 All pipelines shall be constructed in accordance with parts 191, 192, and 195 of Title 49 of the Code of Federal Regulations, as amended, and in conformance with the Commissioner of Conservation's Pipeline Safety Rules and Regulations and those safety requirements established by La. R. S. 45:408, whichever would require higher standards.

Response: Acknowledged. The Nonstructural NED RP and NER RP would not entail using permanent pipelines. Rather, the nonstructural NED RP would include: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. These areas are characterized as previously disturbed residential and business areas that are not natural areas or wildlife and fishery habitats. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts and insure safety requirements are at the highest standards consistent with existing laws, rules, and regulations.

The NER RP would, by design, temporarily use dredge pipelines to move sediments from designated borrow sites to the designated nine marsh restoration sites. For NER RP marsh restoration measure 124c, the temporary dredge pipeline would be bored under Louisiana Highway 82. Following dredging and construction, the temporary pipeline boring would be refilled and the area restored to pre-construction conditions. All of the NER RP marsh restoration measures would involve the temporary use of hydraulic dredge pipelines to move sediments dredged from identified borrow sites to the identified nine marsh restoration sites. The dredge pipelines would be located along identified pipeline corridors that would be returned to pre-construction



conditions following completion of marsh restoration activities. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts and insure safety requirements are at the highest standards consistent with existing laws, rules, and regulations.

Guideline 3.14 Areas dredged for linear facilities shall be backfilled or otherwise restored to the preexisting conditions upon cessation of use for navigation purposes to the maximum extent practicable.

Response: Acknowledged. The Nonstructural NED RP would not entail dredging for linear facilities. By design, however, the NER RP would construct temporary access corridors for dredge pipeline to construct the nine marsh restoration measures. In addition, construction of the five shoreline protection measures would require dredging floatation access for construction equipment and material barges.

- Measure 5a floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 479 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge would be sidecast adjacent to the channel, and returned after construction. Approximately 462 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b1 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 725 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 711 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b2 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 507 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 497 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b3 floatation dredging is anticipated for access to the site for construction equipment and material barges. Floatation excavation along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 372 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 289 acres are anticipated to be impacted by material removed from the access channels.

The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts by backfilling or otherwise restoring work sites to the pre-existing conditions upon cessation of dredging and construction to the maximum extent practicable.



Guideline 3.15 The best practical techniques for site restoration and re-vegetation shall be utilized for all linear facilities.

Response: Acknowledged. The Nonstructural NED RP and the NER RP would utilize the best available practical techniques and BMPs during dredging and construction to avoid, minimize and reduce potential adverse impacts and restore and re-vegetate for all linear project measures (e.g., berms of less than 6 foot elevation and temporary containment/exclusion dikes). Marsh restoration sites are anticipated to naturally revegetate. Shoreline protection measures, by design, would not revegetate. Any areas subjected to dredging or construction impacts would be restored based upon their design intent, at least to their natural pre-construction condition, and this action would utilize the best available practical techniques for site restoration and re-vegetation and BMPs to avoid, minimize and reduce potential adverse impacts.

Guideline 3.16 Confined and dead end canals shall be avoided to the maximum extent practicable. Approved canals must be designed and constructed using the best practical techniques to avoid water stagnation and eutrophication.

Response: Acknowledged. The Nonstructural NED RP would not entail design or use of confined or dead end canals. By design, however, the NER RP would construct temporary access corridors for dredge pipelines to construct the nine marsh restoration measures. In addition, construction of the five shoreline protection measures would require dredging floatation access for construction equipment and material barges.

- Measure 5a floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 479 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge would be sidecast adjacent to the channel, and returned after construction. Approximately 462 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b1 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 725 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 711 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b2 floatation access channels are anticipated for access to the site for construction equipment and material barges. Floatation access along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 507 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 497 acres are anticipated to be impacted by material removed from the access channels.
- Measure 6b3 floatation dredging is anticipated for access to the site for construction equipment and material barges. Floatation excavation along the alignment would be limited to an 80-foot bottom width channel not to exceed an elevation of -7.0 feet (NAVD88), with a top width of 130 feet and 3:1 side slopes. Floatation access channels would be dredged perpendicular to the shoreline out to



the -7.0 foot (NAVD88) contour every 2,500 feet. Approximately 372 acres are anticipated to be dredged for the access channels. Material removed from the access channel via mechanical dredge (clamshell or bucket) would be sidecast adjacent to the channel, and returned after construction. Approximately 289 acres are anticipated to be impacted by material removed from the access channels.

The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts by avoiding dredging confined or dead end canals, to the maximum extent practicable, and designing and constructing temporary floatation access canals using the best practical techniques to avoid water stagnation and eutrophication.

3. GUIDELINES FOR DREDGED MATERIAL DEPOSITION

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

Response: The Nonstructural NED RP would not utilize or deposit dredged spoil. However the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. For all nine marsh restoration measures, dredged sediments would be deposited utilizing the best practical techniques to avoid disruption of water movement, flow, circulation and quality. Temporary floatation and access corridors would be dredged for not only the nine marsh restoration measures but also the five shoreline protection measures (see response to Guideline 3.16, above). Dredged material would be initially side cast and then, following completion of dredging and construction activities, the side cast material would be returned to the temporary floatation and access corridor. Dredging and construction could cause temporary and localized disruption of water movement, flows, circulation and quality. These temporary and localized impacts could include increased turbidity and total suspended sediments, organic enrichment, chemical leaching, reduced dissolved oxygen, and elevated carbon dioxide levels, among others. Construction of temporary containment/exclusion dikes for the nine marsh restoration measures would prevent dredged effluent from entering nearby areas such as existing coastal restoration projects restoration projects. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts and avoid disruption of water movement, flow, circulation and quality.

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

Response: The Nonstructural NED RP would not utilize dredged spoil. Construction of the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. This action would help reduce and compensate for the widespread coastal land loss, due to both natural and human causes, currently being experienced in the Southwest Coastal Louisiana project area and throughout coastal Louisiana. No environmental damage is anticipated from proposed dredging activities. Upland disposal is not anticipated. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts.

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

Response: The Nonstructural NED RP would not utilize dredged spoil. Construction of the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. Permanent



impounding or draining of wetlands or the creation of development sites is not anticipated. For marsh restoration measures, temporary earthen containment/exclusion dikes would be constructed from in-situ material located within the marsh restoration/nourishment area using a mechanical dredge. The in-situ borrow area used for construction of the earthen containment/exclusion dikes would be refilled during placement of dredged material for construction of the nine marsh restoration measures. The temporary containment/exclusion dikes would naturally degrade or would be breached in multiple places at three years following construction, if necessary, to restore fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts and prevent impounding or draining of existing wetlands.

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

Response: The Nonstructural NED RP would not utilize dredged spoil. Construction of the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. Dredged sediments would be used to restore existing fragmented and degraded marsh and shallow open water areas to create new transitional estuarine marsh. Dredged material would not be disposed of on known oyster or clam reefs or in areas of submersed vegetation, to the maximum extent practicable. Coordination with the Louisiana Department of Wildlife and Fisheries has been initiated for determining potential impacts to oyster and clam resources managed by LDWF. At the time of construction, additional coordination with LDWF would be conducted to ensure no new oyster or clam reefs have developed in the project measure area. Although the temporary access corridor for measure 3c1 crosses the Calcasieu Lake Public Oyster Area, no dredging is anticipated to be required. The dredge pipeline temporary access corridors would follow the previously approved temporary access corridor used for repairing the Cameron-Creole Watershed levee after Hurricane Rita. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts.

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

Response: The Nonstructural NED RP would not utilize dredged spoil. Construction of the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. The placement of dredged material for purposes of marsh restoration and the dredging of temporary floatation and access corridors would not create a hindrance to navigation or fishing, or hinder timber growth. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts and not create a hindrance to navigation, fishing or hinder timber growth.

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

Response: The Nonstructural NED RP would not utilize dredged spoil. Construction of the NER RP nine marsh restoration measures, by design, would require dredging a total of approximately 62,428,722 cy of borrow to initially create and restore a total of 11,666 acres of transitional estuarine marsh habitat. Best management practices would be employed to retain dredged material and minimize turbidity resulting from dredging activities. Outflow weir locations are indicated on the Fact Sheet maps. Turbidity control measures are not anticipated to be required, since the outflow weirs are located to direct dredged effluent outflow into



existing fragmented marsh areas to be entrained and nourish these fragmented and degrading marshes. Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. For temporary access corridor dredging and refilling, if needed, the use of a mechanical dredge (e.g., clam-shell dredge) rather than a hydraulic dredge would reduce the resuspension of sediments. No additional turbidity reduction measures are anticipated to be required for this activity. By design, the five shoreline protection measures would provide 251,528 linear feet of shoreline protection and stabilization resulting over the 50 year period of analysis protection of 6,135 net acres and 1,738 AAHUs. The NER RP would utilize the best available practical techniques for dredged material deposition and BMPs to avoid, minimize and reduce potential adverse impacts and retain spoil at the site, reduce turbidity, and reduce shoreline erosion.

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

Response: The Nonstructural NED RP and the NER RP would not result in the alienation of state owned property.

4. GUIDELINES FOR SHORELINE MODIFICATION

Guideline 5.1 Nonstructural methods of shoreline protection shall be utilized to the maximum extent practicable.

Response: Acknowledged. The Nonstructural NED RP would not involve shoreline modification. The NER RP five shoreline protection measures, by design, would utilize non-structural methods of shoreline protection and stabilization to the maximum extent practicable. Approximately 3,595,330 tons of rock, 1,958,625 square yards of geotextile fabric, and 1,115,190 tons of lightweight aggregate would be used to create 251,528 linear feet of shoreline protection/stabilization that would benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis. For shoreline protection measure 16b, a foreshore rock dike would be constructed at the -2.0 foot NAVD88 contour, and would not be connected to the shoreline. For shoreline protection measures 5a, 6b1, 6b2, and 6b3, offshore breakwaters would be constructed, which would not be connected to the shoreline. The NER RP would utilize the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential adverse impacts.

Guideline 5.2 Shoreline modification structures shall be designed and built using best practical techniques to minimize adverse environmental impacts.

Response: Acknowledged. The Nonstructural NED RP would not involve shoreline modification. The NER RP, by design, would utilize non-structural methods of shoreline protection to the maximum extent practicable. Approximately 3,595,330 tons of rock, 1,958,625 square yards of geotextile fabric, and 1,115,190 tons of lightweight aggregate would be used to create 251,528 linear feet of shoreline protection that would benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis. Shoreline protection structures would be designed and built using best practical techniques to minimize adverse environmental impacts. Temporary construction and floatation access for the shoreline protection measures (measures 16b, 5a, 6b1, 6b2, and 6b3) would be from offshore to avoid impacts to existing beach and wetland habitat. Side cast spoil from dredging the floatation and access corridor would be returned following completion of construction. The NER RP would utilize the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential adverse impacts and minimize adverse environmental impacts.

Guideline 5.3 Shoreline modification structures shall be lighted or marked in accordance with U.S. Coast Guard regulations, not interfere with navigation, and should foster fishing, other recreational opportunities, and public access.

Response: Acknowledged. The Nonstructural NED RP would not involve shoreline modification. There are no NER RP shoreline modification structures which would require lighting or marking in accordance



with U.S. Coast Guard regulations. Signage would be included if and where necessary to alert boaters to the presence of measures, such as breakwaters. The proposed shoreline modification measures would not interfere with navigation, and would foster fishing, other recreational opportunities, and public access to the maximum extent practicable. The NER RP would utilize the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential adverse impacts and not interfere with navigation, foster fishing and other recreational opportunities, and public access.

Guideline 5.4 Shoreline modification structures shall be built using best practical materials and techniques to avoid the introduction of pollutants and toxic substances into coastal waters.

Response: Acknowledged. The Nonstructural NED RP would not involve shoreline modification. The NER RP five shoreline protection measures, by design, shall be designed and built using best practical materials and techniques to avoid the introduction of pollutants and toxic substances into coastal waters. Approximately 3,595,330 tons of rock, 1,958,625 square yards of geotextile fabric, and 1,115,190 tons of lightweight aggregate would be used to create 251,528 linear feet of shoreline protection that would benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis. The NER RP would be constructed using the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential introduction of pollutants and toxic substances into coastal waters.

Guideline 5.5 Piers and docks and other harbor structures shall be designed and built using best practical techniques to avoid obstruction of water circulation.

Response: The Nonstructural NED RP and NER RP do not propose any piers, docks, or other harbor structures that would obstruct water circulation. The NER RP five shoreline protection measures, by design, shall be designed and built using best practical materials and techniques to avoid the introduction of pollutants and toxic substances into coastal waters. Approximately 3,595,330 tons of rock, 1,958,625 square yards of geotextile fabric, and 1,115,190 tons of lightweight aggregate would be used to create 251,528 linear feet of shoreline protection that would benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis. The NER RP would be designed and built using the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce the potential obstruction of water circulation.

Guideline 5.6 Marinas, and similar commercial and recreational developments shall to the maximum extent practicable not be located so as to result in adverse impacts on open productive oyster beds, or submersed grass beds.

Response: The Nonstructural NED RP and NER RP do not propose any marinas, or commercial or recreational developments. For NER RP measure 306a1, the dredge pipeline temporary access corridor for marsh restoration would cross the Calcasieu Lake Public Oyster Area. However, no dredging is anticipated to be required for this temporary dredge pipeline access. Rather, the dredge pipeline temporary access corridors would follow the previously approved temporary access corridor used for repairing the Cameron-Creole Watershed levee after Hurricane Rita. The Nonstructural NED RP and NER RP would utilize the best available practical techniques for dredging and construction and BMPs to avoid, minimize and reduce potential adverse impacts to open productive oyster beds and submersed grass beds.

Guideline 5.7 Neglected or abandoned shoreline modification structures, piers, docks, mooring and other harbor structures shall be removed at the owner's expense, when appropriate.

Response: The Nonstructural NED RP would not create or remove neglected or abandoned shoreline modification structures, piers, docks, mooring and other harbor structures. It is not anticipated that dredging and construction of the NER RP measures would require neglected or abandoned shoreline modification structures, piers, docks, mooring and other harbor structures to be removed. However, if such need should arise, the removal of any such structures would be at the owner's expense, if and when appropriate. The Nonstructural NED RP and NER RP would utilize the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential adverse impacts and to remove neglected or



abandoned shoreline modification structures, piers, docks, mooring and other harbor structures at the owner's expense, when appropriate.

Guideline 5.8 Shoreline stabilization structures shall not be built for the purpose of creating fill areas for development unless part of an approved surface alteration use.

Response: The Nonstructural NED RP and the NER RP would not construct or operate any shoreline stabilization structures for the purpose of creating fill areas for development. The NER RP nine marsh restoration measures, by design, would utilize in-situ material to create temporary containment/exclusion dikes used to temporarily contain dredged sediments used to initially create 8,175 acres and nourish 3,430 for a total 11,666 acres restored resulting in 7,900 net acres over the 50 year period of analysis. The NER RP five shoreline protection measures would place 251,528 linear feet of shoreline protection that would protect 6,135 net acres over the 50 years of analysis. The NER RP would utilize the best available practical techniques for shoreline modification and BMPs to avoid, minimize and reduce potential adverse impacts to create marsh restoration and shoreline protection measures.

Guideline 5.9 Jetties, groins, breakwaters and similar structures shall be planned, designed and constructed so as to avoid to the maximum extent practicable downstream land loss and erosion.

Response: The Nonstructural NED RP would not plan, design, construct or otherwise implement any jetties, groins, breakwaters or similar structures. However, the NER RP includes four shoreline protection/stabilization measures using breakwaters that would prevent land loss and shoreline erosion.

- Measure 6b1 is 58,293 feet of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core; located approximately 150 feet offshore consisting of geotextile fabric and stone built to an 18-foot crest width.
- Measure 6b2 is 42,883 feet of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core; located approximately 150 feet offshore using geotextile fabric and stone built to an 18-foot crest width.
- Measure 6b3 is 33,355 feet of Gulf shoreline protection consisting of a reef breakwater with a lightweight aggregate core; located approximately 150 feet offshore using geotextile fabric and stone built to an 18-foot crest width.

No sediment starvation is expected to occur with the Gulf shoreline breakwater fields. Shoreline protection measures 6b1, 6b2, and 6b3 are located along the Gulf of Mexico shoreline of Rockefeller Refuge, which is a shell veneer covering marsh sediments. There is little long-shore movement of sediment in this type of system. Shoreline protection measure 5a would connect with the existing breakwater field west of Holly Beach, providing continuous protection to the shoreline from that existing breakwater field to the western Calcasieu Ship Channel jetty. The introduction of sands for the CS-33 project increased the sediment budget for this area, so that downstream sediment starvation is not expected to be a problem. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts to avoid, to the maximum extent practicable downstream land loss and erosion.

5. GUIDELINES FOR SURFACE ALTERATIONS

Guideline 6.1 Industrial, commercial, urban, residential, and recreational uses are necessary to provide adequate economic growth and development. To this end, such uses will be encouraged in those areas of the coastal zone that are suitable for development. Those uses shall be consistent with the other guidelines and shall, to the maximum extent practicable, take place only:

- a) on lands five feet or more above sea level or within fast lands; or
- b) on lands which have foundation conditions sufficiently stable to support the use, and where flood and storm hazards are minimal or where protection from these hazards can be reasonably well achieved, and where the public safety would not be unreasonably endangered; and
 - 1) the land is already in high intensity of development use, or



- 2) there is adequate supporting infrastructure, or
- 3) the vicinity has a tradition of use for similar habitation or development

Response: The Nonstructural NED RP would include: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. These areas are characterized as previously disturbed residential and business areas that are not biologically productive or wetland areas. The Nonstructural NED RP would use the best available practical techniques and BMPs to avoid, minimize and reduce the potential for adverse economic or development impacts by providing risk reduction of hurricane and storm surge flood damage for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. Implementing the Nonstructural NED RP would reduce adverse economic impacts by reducing administrative costs and claims to the Federal Flood Insurance Program, under the FEMA, for repetitive flood insurance claims. This estimate is based upon present information and could change during implementation of the Nonstructural NED RP. The construction of the non-structural risk reduction measures would include encouragement of industrial, commercial, urban, residential, and recreational uses which provide adequate economic growth and development. Those uses would be consistent with the other guidelines.

The NER RP nine marsh restoration measures and five shoreline protection measures would restore, nourish and protect a total of 14,035 net acres (4,430 AAHUs) of transitional estuarine marsh over the 50 year period of analysis. The 35 chenier reforestation measures would reforest approximately 1,413 net acres (538 AAHUs) in Cameron and Vermilion Parishes over the 50 year period of analysis. These areas would be available for recreational uses and commercial and recreational fishing. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts would be utilized.

Guideline 6.2 Public and private works projects such as levees, drainage improvements, roads, airports, ports, and public utilities are necessary to protect and support needed development and shall be encouraged. Such projects shall, to the maximum extent practicable, take place only when:

a) they protect or serve those areas suitable for development pursuant to Guideline 6.1; and b) they are consistent with the other guidelines; and c) they are consistent with all relevant adopted state, local and regional plans.

Response: The Nonstructural NED RP would, to the maximum extent practicable, protect and severe those areas suitable for development by implementing hurricane and storm surge risk reduction measures to a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. This action would support existing development and shall, to the maximum extent practicable, take place only when they protect or serve those areas suitable for development pursuant to Guideline 6.1; and are consistent with the other guidelines; and are consistent with all relevant adopted state, local and regional plans. The Nonstructural NED RP would utilize the best available practical techniques for hurricane and storm surge risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts and protect and support needed development.

The NER RP measures, by design, would not support or encourage development. Rather, the NER RP measures would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. Whereas the chenier restoration measures would restore a net total of 1,413 net acres with 538 AAHUs. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts.

**Guideline 6.3 BLANK (Deleted by Louisiana Department of Natural Resources)**

Guideline 6.4 To the maximum extent practicable wetland areas shall not be drained or filled. Any approved drain or fill project shall be designed and constructed using best practical techniques to minimize present and future property damage and adverse environmental impacts.

Response: The Nonstructural NED RP would not drain or fill any wetlands. The Nonstructural NED RP measures are located on previously disturbed residential and business properties.

Permanent impounding or draining of wetlands or the creation of development sites is not proposed for the NER RP. Rather, the NER RP would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh, including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures. Approximately 1,413 net acres from the 35 reforestation sites in Cameron and Vermilion Parishes would be reforested over the 50 year period of analysis. For marsh restoration measures, temporary earthen containment/exclusion dikes would be constructed from in-situ material located within the marsh restoration/nourishment area using a mechanical dredge. The borrow area used for construction of the earthen containment dike would refill during the placement of dredged material. Containment/exclusion dikes would be breached in multiple places at three years following construction, if necessary, to restore fish access if natural degradation is not sufficient. Breach locations would correspond to weir locations. Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The introduction of sediments using a hydraulic dredge to create a marsh platform would increase the acreage of wetlands in the project area, converting open water to transitional estuarine wetland habitat. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts to minimize present and future property damage and adverse environmental impacts.

Guideline 6.5 Coastal water dependent uses shall be given special consideration in permitting because of their reduced choice of alternatives.

Response: Acknowledged. The Nonstructural NED RP does not include coastal water dependent uses. The NER RP would protect, restore, and nourish a total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). Once constructed, the nine marsh restoration and five shoreline protection measures would enhance both the human and natural coastal water dependent uses. The approximately 35 reforestation sites in Cameron and Vermilion Parishes would reforest about 1,413 net acres over the 50 year period of analysis, resulting in 538 AAHUs. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts.

Guideline 6.6 Areas modified by surface alteration activities shall, to the maximum extent practicable, be re-vegetated, refilled, cleaned and restored to their predevelopment condition upon termination of the use.

Response: The Nonstructural NED RP, by design, would include: 1) elevating eligible residential structures; 2) dry flood proofing of eligible non-residential structures, excluding large warehouses and industrial complexes; and 3) construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses. These areas are characterized as previously disturbed residential and business areas that are not biologically productive or wetland areas. Construction debris from elevated structures and flood proofed structures would be removed and the site cleaned and restored to pre-construction conditions or better upon completion of construction activities. By design, the less than 6 foot in height flood proofing barriers or berms would remain around non-residential structures, primarily industrial complexes and warehouses. Any construction debris would be removed and the site cleaned and restored to pre-construction conditions or better upon completion of construction activities. The Nonstructural NED RP would utilize the best available practical techniques for nonstructural hurricane



and storm damage risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts and return the area to preconstruction conditions.

The NER RP 35 chenier reforestation measures would not involve surface alterations. The NER RP nine marsh restoration measures would, to the maximum extent practicable, be constructed to insure the restoration sites would naturally revegetate. The five shoreline protection measures, by design, would remain unvegetated and function to reduce wave induced shoreline erosion. Any areas subjected to dredging and construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The NER RP would utilize the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts.

Guideline 6.7 Site clearing shall to the maximum extent practicable be limited to those areas immediately required for physical development.

Response: The Nonstructural NED RP measures include elevating structures and dry flood proofing structures would generally not involve site clearing. However, construction of the less than 6 foot in height flood proofing barriers or berms could involve site clearing. Site clearing, to the maximum extent practicable, would be limited to those areas immediately required for elevating, flood proofing, building berms, or other similar project related construction of the Nonstructural NED RP structures. Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The Nonstructural NED RP would use the best available practical techniques for nonstructural hurricane and storm surge damage reduction and BMPs to avoid, minimize and reduce potential adverse impacts and shall, to the maximum extent practicable limit site clearing to those areas immediately required for physical development.

Site clearing is not part of implementing the NER RP nine marsh restoration measures and five shoreline protection measures that, by design, would involve dredge disposal and construction for marsh restoration, and placement of geotextile fabric and stone for shoreline protection. However, the NER RP 35 chenier reforestation measures would include control of invasive plant species. Prior to planting, an application of 64 ounces of Clearcast® would be sprayed over the top of hardwoods to control invasive species, primarily Chinese tallow (*Triadica sebifera*), if needed. The NER RP would use the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts and shall, to the maximum extent practicable limit site clearing to those areas immediately required for physical development.

Guideline 6.8 Surface alterations shall, to the maximum extent practicable, be located away from critical wildlife areas and vegetation areas. Alterations in wildlife preserves and management areas shall be conducted in strict accord with the requirements of the wildlife management body.

Response: The Nonstructural NED RP surface alterations related primarily to construction of the less than 6 foot in height flood proofing barriers or berms, could involve site clearing. However, the Nonstructural NED RP would not involve surface alterations near any critical wildlife or vegetation areas. The Nonstructural NED RP would use the best available practical techniques for nonstructural hurricane and storm surge risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts to wildlife preserves and management areas in strict accord with the requirements of the wildlife management body.

Surface alterations of the NER RP 35 chenier reforestation measures would be minimal and involve planting trees and controlling invasive species (primarily tallow trees). Whereas, the NER RP nine marsh restoration measures and the five shoreline protection measures would, by design, require surface alterations that could, and in some instances are necessarily located near critical wildlife areas and vegetation areas. Two marsh restoration measures, located partially on USFWS properties, are recommended for construction by the USFWS. Measure 124d Marsh Restoration at Mud Lake would be located on Sabine NWR. NER RP measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR. In addition, project CS-59 (Oyster Bayou Marsh Creation and Terracing) would be directly impacted by



construction of NER RP marsh restoration measure 124c. Project CS-054 (Cameron-Creole Watershed Grand Bayou Marsh Creation) would be directly impacted by construction of NER RP marsh restoration measure 3c1. When overlap occurs, proposed NER RP measures would be constructed to avoid existing coastal restoration projects by construction of temporary containment/exclusion dikes that would contain dredged borrow sediments used for construction of the NER RP measure and also prevent dredged effluents from entering the existing coastal restoration project sites. Temporary containment/exclusion dikes would degrade naturally to restore connectivity with surrounding areas or would be degraded at three years after construction has been completed. In addition, existing mitigation projects are also located within areas proposed for restoration under the NER RP. Mitigation projects are designed and constructed to offset anticipated losses from permitted activities. **Figure 8** and **Table 4** contains information about mitigation projects that occur within the project area. In most instances, mitigation projects were developed to provide a sustainable buffer from wave action and storm surge generated by tropical storms and hurricanes. When overlap occurs, proposed NER RP measures would not be constructed until the mitigation projects satisfy their 20-year permitted obligations.

NER RP alterations in wildlife refuges/preserves or management areas would be conducted in strict accord with the requirements of the wildlife management body. Coordination with the USFWS, CWPPRA and the LDWF has been initiated for potential impacts to resources managed by the USFWS and LDWF (e.g., oysters, bald eagles, sandhill cranes, state and national wildlife refuges, etc.). Any areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques. The NER RP would use the best available practical techniques for ecosystem restoration and BMPs to avoid, minimize and reduce potential adverse impacts, to the maximum extent practicable, for critical wildlife areas and vegetation areas, wildlife preserves and management areas.

Guideline 6.9 Surface alterations which have high adverse impacts on natural functions shall not occur, to the maximum extent practicable, on barrier islands and beaches, isolated cheniers, isolated natural ridges or levees,' or in wildlife and aquatic species breeding or spawning areas, or in important migratory routes.

Response: The Nonstructural NED RP measures of elevating and dry flood proofing would not entail surface alterations. However, it is not anticipated that any Nonstructural NED RP or NER RP measures would adversely impact natural functions. Construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses, would entail surface alterations. However, these surface alterations would be on previously disturbed lands characterized as residential and business lands and would not adversely impact natural functions and would not occur on barrier islands and beaches, isolated cheniers, isolated natural ridges or levees,' or in wildlife and aquatic species breeding or spawning areas, or in important migratory routes. The Nonstructural NED RP would use the best available practical techniques for hurricane and storm damage risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts, to the maximum extent practicable, to barrier islands and beaches, isolated cheniers, isolated natural ridges and levees, wildlife and aquatic species breeding and spawning areas and important migratory routes.

Surface alterations by the NER RP nine marsh restoration measures and five shoreline protection measures, by design, are significant surface alteration features. The nine marsh restoration measures would entail using over 62,000,000 cy of borrow material to initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh. Whereas, the five shoreline protection measures would result in surface alterations by placing over 1.9 million square yards of geotextile fabric, over 1.1 million tons of lightweight aggregate, and over 3.5 million tons of rock that would provide over 251,000 linear feet of shoreline protection/stabilization. Over the 50-year period of analysis, the NER RP marsh and shoreline protection measures would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh



restoration measures, and 1,738 AAHUs from the five shoreline protection measures. The NER RP nine marsh restoration measures and five shoreline protection measures would, by design, involve surface alterations that would help restore and protect barrier shorelines, beaches, cheniers, wildlife, and aquatic species breeding and spawning areas, and important bird migratory routes.

The 35 NER RP chenier reforestation measures would involve minimal surface alterations of planting trees and destroying invasive plant species (primarily tallow trees). The 35 chenier reforestation measures would restore a net total of 1,413 net acres with 538 AAHUs and provide important stopover habitat for Neotropical migratory birds. Highway 82 would provide vehicular access to the chenier reforestation measures. Fence posts would be installed in concrete with a small tractor using an auger bit and portable cement mixer. For planting seedlings, an ATV with a trailer would be used to deliver seedlings to the planting sites, which would be planted by hand using a spade or similar tool. In those more remote locations not accessible via Highway 82, the equipment would be delivered to the sites via large airboat or barge. Additional temporary access corridors from waterways are indicated on the Fact Sheet maps. Since the goal of the chenier reforestation measure is 50% canopy coverage, the identified plots would need to be planted in their entirety. Coordination with the Louisiana Department of Transportation and Development would be initiated to ensure that the planting plan would maintain a safe distance from existing roadways to avoid future impacts to them. Also, see response for 1.7(h). The NER RP would use the best available practical techniques for hurricane and storm damage risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts, to the maximum extent practicable, to barrier islands and beaches, isolated cheniers, isolated natural ridges and levees, wildlife and aquatic species breeding and spawning areas and important migratory routes.

Guideline 6.10 The creation of low dissolved oxygen conditions in the water or traps for heavy metals shall be avoided to the maximum extent practicable.

Response: The Nonstructural NED RP measures of elevating; dry flood proofing; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses would not entail creation of low dissolved oxygen conditions. The Nonstructural NED RP would use the best available practical techniques for hurricane and storm damage risk reduction and BMPs to avoid, minimize and reduce potential adverse impacts and the creation of low dissolved oxygen conditions or traps for heavy metals, to the maximum extent practicable.

Construction activities, hydraulic dredging and placement of sediments and other fill materials for implementation of the NER RP marsh restoration and shoreline protection measures could result in localized and temporary increases in turbidity and total suspended sediments and other particulates in the water column. The suspended sediments and particulates may react with dissolved oxygen in the water, resulting in reduction of dissolved oxygen and release of ammonia in receiving area waters. There could also be reduction in pH toward more acidic conditions, organic enrichment, chemical leaching, and elevated carbon dioxide levels. The introduction of organic material to the water column as a result of discharge can lead to temporary and localized, but minor, high biochemical oxygen demand (BOD) which in turn can lead to temporary and localized, but minor, reduced dissolved oxygen thereby potentially affecting the survival of many aquatic organisms. Decomposition of organic material within the nine marsh restoration measures following discharges of dredged sediments may result in temporary and localized, but minor, reduction in dissolved oxygen and a release of ammonia. Following completion of construction activities, dissolved gas levels in the vicinity of these measures would return to that which existed prior to construction activities. Tidal currents present in the project measure areas would serve to disperse and thereby dilute these localized and temporary changes. Following construction, levels of turbidity and total suspended sediments and particulates would return to pre-construction conditions resulting in levels of dissolved oxygen and other constituents in the area returning to those observed prior to construction. The creation of low dissolved oxygen conditions would be avoided to the maximum extent practicable. Any effects are expected to be minor and would occur only during actual dredging activities. Dissolved oxygen levels would return to ambient levels following construction operations. The NER RP would use the best available practical techniques for marsh restoration and shoreline protection and BMPs to avoid,



minimize and reduce potential adverse impacts and the creation of low dissolved oxygen conditions or traps for heavy metals, to the maximum extent practicable.

Guideline 6.11 Surface mining and shell dredging shall be carried out utilizing the best practical techniques to minimize adverse environmental impacts.

Response: Surface mining and shell dredging are not part of either the Nonstructural NED RP or the NER RP.

Guideline 6.12 The creation of underwater obstructions which adversely affect fishing or navigation shall be avoided to the maximum extent practicable.

Response: The Nonstructural NED RP measures of elevating; dry flood proofing; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses would not entail creation of underwater obstructions.

The NER RP nine marsh restoration measures and five shoreline protection measures would, by design, help restore and protect transitional estuarine marsh which would positively affect fishing by restoring transitional estuarine marsh which would provide essential fish habitat. Over the 50-year period of analysis, the NER RP would protect, restore, and nourish a net total of 14,035 net acres of emergent marsh (including 7,900 net acres from the nine marsh restoration measures and 6,135 net acres from the five shoreline protection measures). At the end of the 50 year period of analysis, the marsh restoration and shoreline protection measures together would achieve a total net ecological benefit of 4,430 AAHUs; with 2,700 AAHUs from the nine marsh restoration measures, and 1,738 AAHUs from the five shoreline protection measures. The chenier restoration measures would restore a net total of 1,413 net acres with 538 AAHUs and provide important stopover habitat for migratory Neotropical birds. Shoreline protection measures 5a, 6b1, 6b2, and 6b3 include construction of offshore breakwaters, not connected to the shoreline, which would act as underwater obstructions. However, the breakwaters would be constructed such that adverse effects on fishing and/or navigation would be avoided to the maximum extent practicable. Breakwater crests would be above mean water level (elevations of 3.0 to 3.5 feet NAVD88), so would be visible under normal conditions. Additionally, signage would be included, if and where necessary, to alert boaters to their presence. The NER RP would use the best available practical techniques for marsh restoration and shoreline protection and BMPs to avoid, minimize and reduce potential adverse impacts and the creation of underwater obstructions which may adversely affect fishing or navigation shall be avoided to the maximum extent practicable.

Guideline 6.13 Surface alteration sites and facilities shall be designed, constructed, and operated using the best practical techniques to prevent the release of pollutants or toxic substances into the environment and minimize other adverse impacts.

Response: Surface alterations for the Nonstructural NED RP measures would be primarily related to flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses; and acquisition. These Nonstructural NED RP measures would be designed, constructed and operated using the best practical techniques and BMPs to prevent the release of pollutants or toxic substances into the environment and avoid, minimize and reduce other adverse impacts.

Surface alterations by the NER RP 35 chenier reforestation measures would be minimal and primarily involve planting trees and controlling invasive plant species (primarily tallow trees). Whereas, the NER RP nine marsh restoration measures and five shoreline protection measures, by design, are significant surface alteration measures. The nine marsh restoration measures would entail using over 62,000,000 cy of borrow material to initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh. Over the 50 year period of analysis, this would result in surface alterations of about 7,900 net acres and 2,700 AAHUs of transitional estuarine marsh. Whereas, the five shoreline protection measures would result in surface alterations by placing over 1.9 million square yards of geotextile fabric, over 1.1 million tons of lightweight aggregate, and over 3.5 million tons of rock that would provide over 251,000 linear feet of shoreline



protection/stabilization. NER RP measures would be designed, constructed and operated using the best practical techniques and BMPs to prevent the release of pollutants or toxic substances into the environment and avoid, minimize and reduce other adverse impacts.

Guideline 6.14 To the maximum extent practicable only material that is free of contaminants and compatible with the environmental setting shall be used as fill.

Response: To the maximum extent practicable only material that is free of contaminants and compatible with the environmental setting shall be used as fill.

6. GUIDELINES FOR HYDROLOGIC AND SEDIMENT TRANSPORT MODIFICATIONS:

Guideline 7.1 The controlled diversion of sediment laden waters to initiate new cycles of marsh building and sediment nourishment shall be encouraged and utilized whenever such diversion will enhance the viability and productivity of the outfall area. Such diversions shall incorporate a plan for monitoring and reduction and/or amelioration of the effects of pollutants present in the freshwater source.

Response: The restoration measures do not contain any diversions of freshwater or sediments.

Guideline 7.2 Sediment deposition systems may be used to offset land loss, to create or restore wetland areas or enhance building characteristics of a development site. Such systems shall only be utilized as part of an approved plan. Sediment from these systems shall only be discharged in the area that the proposed use is to be accomplished.

Response: The Nonstructural NED RP measures would not involve sediment deposition systems to offset land loss, to create or restore wetland areas or enhance building characteristics for a building site. Rather, by design, the Nonstructural NED RP measures of elevating; dry flood proofing; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential structures, primarily industrial complexes and warehouses floodway would provide nonstructural hurricane and storm surge damage risk reduction for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts.

The NER RP 35 chenier reforestation measures and five shoreline protection measures would not involve sediment deposition systems. Whereas, the NER RP nine marsh restoration measures would utilize a hydraulic dredge to dispose of over 62,000,000 cy of borrow material to initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh. Over the 50 year period of analysis, this sediment deposition would result in about 7,900 net acres and 2,700 AAHUs of transitional estuarine marsh. Temporary containment/exclusion dikes would be constructed to contain dredged sediments and allow them to dewater and consolidate into marsh. Dewatering of the sediment slurry would take place through weirs in the containment dikes to direct water into adjacent marshes, to maximize retention of sediment in the system. The containment/exclusion dikes would prevent dredge slurry from entering into adjacent areas not intended to receive sediment nourishment. Containment/exclusion dikes would naturally degrade or would be degraded at multiple sites three years following construction to allow hydrologic exchange with adjacent areas. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts

Guideline 7.3 Undesirable deposition of sediments in sensitive habitat or navigation areas shall be avoided through the use of the best preventive techniques.

Response: The Nonstructural NED RP measures would not involve sediment deposition in sensitive habitat or navigation areas. Rather, by design, the Nonstructural NED RP measures of elevating; dry flood proofing; and construction of flood proofing barriers or berms less than 6 feet in height around non-residential



structures, primarily industrial complexes and warehouses would provide nonstructural hurricane and storm surge damage risk reduction for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The Nonstructural NED RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to sensitive habitat and navigation areas.

The NER RP 35 chenier reforestation measures would not involve sediment deposition in sensitive habitat or navigation areas. Whereas, the NER RP nine marsh restoration measures, by design, would utilize a hydraulic dredge to dispose of over 62,000,000 cy of borrow material to initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh adjacent and within fragmented sensitive transitional estuarine marsh and navigational areas. Over the 50 year period of analysis, this sediment deposition would result in about 7,900 net acres and 2,700 AAHUs of transitional estuarine marsh in a coastal ecosystem that is experiencing widespread coastal wetland loss. Temporary containment/exclusion dikes would be constructed to contain dredged sediments and allow them to dewater and consolidate into marsh. Dewatering of the sediment slurry would take place through weirs in the containment dikes to direct water into adjacent marshes, to maximize retention of sediment in the system. The containment/exclusion dikes would prevent dredge slurry from entering into adjacent sensitive areas and navigation channels not intended to receive sediment nourishment. Containment/exclusion dikes would naturally degrade or would be degraded at multiple sites three years following construction to allow hydrologic exchange with adjacent areas. Whereas, the five shoreline protection measures would result in material depositions and surface alterations by placing over 1.9 million square yards of geotextile fabric, over 1.1 million tons of lightweight aggregate, and over 3.5 million tons of rock that would provide over 251,000 linear feet of shoreline protection/stabilization within and adjacent to sensitive transitional estuarine marsh and navigation areas and benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to sensitive habitat and navigation areas. Areas subjected to construction impacts would be restored at least to their natural pre-construction condition, and this action would use the best available restoration techniques and BMPs.

Guideline 7.4 The diversion of freshwater through siphons and controlled conduits and channels, and overland flow to offset saltwater intrusion and to introduce nutrients into wetlands shall be encouraged and utilized whenever such diversion will enhance the viability and productivity of the outfall area. Such diversions shall incorporate a plan for monitoring and reduction and/or amelioration of the effects of pollutants present in the freshwater source.

Response: The Nonstructural NED RP and NER RP do not include diversions of any type.

Guideline 7.5 Water or marsh management plans shall result in an overall benefit to the productivity of the area.

Response: The Nonstructural NED RP does not entail water or marsh management plans or any actions that could affect productivity in the area. Rather the Nonstructural NED RP would provide nonstructural hurricane and storm surge damage risk reduction for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses.

However, the NER RP nine marsh restoration measures, five shoreline protection measures and 35 chenier reforestation measures would result in net positive benefits to the productivity of the area. The NER RP nine marsh restoration measures would initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh. Over the 50 year period of analysis, this would result in about 7,900 net acres and 2,700 AAHUs of transitional estuarine marsh thereby increasing local productivity in a coastal ecosystem that is experiencing widespread coastal wetland loss. The NER RP five shoreline protection measures would place 251,528 linear feet of shoreline protection that would benefit 6,135 net acres and 1,738 AAHUs over the 50 years of analysis. The 35 chenier reforestation measures would reforest



approximately 1,413 net acres and 538 AAHUs in Cameron and Vermilion Parishes over the 50 year period of analysis. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to productivity of the areas.

Guideline 7.6 Water control structures shall be assessed separately based on their individual merits and impacts and in relation to their overall water or marsh management plan of which they are a part.

Response: The Nonstructural NED RP does not include water control structures. However, the Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measure are both being recommended for individual long-term study.

Guideline 7.7 Weirs and similar water control structures shall be designed and built using the best practical techniques to prevent "cut arounds," permit tidal exchange in tidal areas, and minimize obstruction of the migration of aquatic organisms.

Response: The Nonstructural NED RP does not include water control structures. However, the Calcasieu Ship Channel Salinity Barrier measure and the Cameron-Creole Spillway Salinity Control Structure measures are both being recommended for long-term study. The NER RP nine marsh restoration measures would include the use of temporary weirs in the containment/exclusion dikes to move dredge effluent to adjacent areas for marsh nourishment. These weirs would be temporary and would be designed and built using the best practical techniques to prevent "cut arounds," permit tidal exchange in tidal areas (after a three-year settlement period), and minimize obstruction of the migration of aquatic organisms. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts to prevent "cut arounds," permit tidal exchange in tidal areas, and minimize obstruction of the migration of aquatic organisms, sensitive habitat and navigation areas.

Guideline 7.8 Impoundments which prevent normal tidal exchange and/or the migration of aquatic organisms shall not be constructed in brackish and saline areas to the maximum extent practicable.

Response: The Nonstructural NED RP measures would not involve impoundments which prevent normal tidal exchange or the migration of aquatic organisms in brackish or saline areas. The NER RP 35 chenier reforestation measures and the NER RP five shoreline protection measures would not involve impoundments, not prevent normal tidal exchange and not prevent the migration of aquatic organisms in brackish or saline areas. Rather, the NER RP five shoreline protection measures would, by design, result in reducing wave induced shoreline erosion by depositing material and altering surfaces with placement over 1.9 million square yards of geotextile fabric, over 1.1 million tons of lightweight aggregate, and over 3.5 million tons of rock that would provide over 251,000 linear feet of shoreline protection/stabilization within transitional estuarine marsh and benefit a total of 6,135 net acres and 1,738 AAHUs over the 50 year period of analysis.

The NER RP nine marsh restoration measures, by design, would entail the use of impoundments, in this case temporary containment/exclusion dikes, for up to three years to contain to contain over 62,000,000 cy of dredged borrow sediments to allow for dewaterment, settlement and consolidation of the sediment slurry into substrate suitable for colonization by marsh plants. Dewatering of the sediment slurry would take place through weirs in the containment dikes to direct water into adjacent degraded and fragmented marshes, to maximize retention of sediment in the system. The containment/exclusion dikes would prevent dredge slurry from entering into adjacent areas not intended to receive sediment nourishment. Containment/exclusion dikes would naturally degrade or would be degraded at multiple sites three years following construction to allow hydrologic exchange with adjacent areas until it dewater and consolidates for marsh restoration. This action would initially create about 8,175 acres and nourish about 3,439 acres for a total of 11,666 acres of transitional estuarine marsh restored. Over the 50 year period of analysis, this sediment deposition would result in about 7,900 net acres and 2,700 AAHUs of transitional estuarine marsh. The containment/exclusion dikes would naturally degrade to allow hydrologic connectivity or would be degraded at three years following construction. There would be no permanent impoundments that would prevent normal tidal exchange or the migration of aquatic organisms



in brackish or saline waters. The NER RP would utilize the best available practical techniques and BMPs to avoid, minimize and reduce potential adverse impacts.

Guideline 7.9 Withdrawal of surface and ground water shall not result in saltwater intrusion or land subsidence to the maximum extent practicable.

Response: The proposed action would not entail withdrawal of surface or ground waters. Therefore, this guideline is not applicable to the Nonstructural NED RP or NER RP.

GUIDELINES FOR DISPOSAL OF WASTES:

Response: The proposed action would not involve the disposal of wastes. Therefore, these guidelines are not applicable to the Nonstructural NED RP or the NER RP.

7. GUIDELINES FOR USES THAT RESULT IN THE ALTERATION OF WATERS DRAINING INTO COASTAL WATERS:

Response: The proposed action would not involve the alteration of waters draining into coastal waters. Therefore, these guidelines are not applicable to the Nonstructural NED RP or the NER RP.

8. GUIDELINES FOR OIL, GAS, AND OTHER MINERAL ACTIVITIES:

Response: The proposed action would not involve oil, gas or other mineral activities. During PED Phase, the inventory of wells within the measure areas would be examined. Inactive wells would be capped in place. Active wells would have access maintained either through a flotation channel or via boardwalk, in coordination with the landowner and well owner.

OTHER STATE POLICIES INCORPORATED INTO THE PROGRAM

Section 213.8A of Act 361 directs the Secretary of Department of Transportation and Development (DOTD), in developing the Louisiana Coastal resources Program (LCRP), to include all applicable legal and management provisions that affect the coastal zone or are necessary to achieve the purposes of Act 361 or to implement the guidelines effectively. It states:

The Secretary shall develop the overall state coastal management program consisting of all applicable constitutional provisions, laws and regulations of this state which affect the coastal zone in accordance with the provisions of this Part and shall include within the program such other applicable constitutional or statutory provisions, or other regulatory or management programs or activities as may be necessary to achieve the purposes of this Part or necessary to implement the guidelines hereinafter set forth.

The constitutional provisions and other statutory provisions, regulations, and management and regulatory programs incorporated into the LCRP are identified and described in Appendix 1. A description of how these other authorities are integrated into the LCRP and coordinated during program implementation is presented in Chapter IV. Since all of these policies are incorporated into the LCRP, Federal agencies must ensure that their proposed actions are consistent with these policies as well as the coastal use guidelines (CZMA, Section 307).

CONSISTENCY DETERMINATION

The Southwest Coastal Louisiana Nonstructural NED RP measures would provide nonstructural hurricane and storm surge damage risk reduction for a total of 3,961 impacted structures consisting of 3,462 eligible residential structures; 342 eligible commercial structures and public buildings; and 157 eligible industrial complexes and warehouses. The NER RP measures would create, nourish, reforest and protect 15,448 net acres and 4,776 AAHUs over the 50 year period of analysis in the 4,700 square mile study area located in Calcasieu, Cameron, and Vermilion Parishes in southwest Louisiana. Based on this evaluation of the proposed action to the Coastal Use Guidelines, the U. S. Army Corps of Engineers, Mississippi Valley Division, New Orleans



District, has determined that what has been proposed is consistent, to the maximum extent practicable, with the State of Louisiana's Coastal Resources Program.

Questions regarding this determination should be addressed to Dr. William Klein Jr.; U.S. Army Corps of Engineers; Regional Planning and Environment Division South; New Orleans Environmental Branch; CEMVN-PDN-CEP; P.O. Box 60267; New Orleans, Louisiana 70160-0267. Dr. Klein may be contacted at (504) 862-2540, if questions arise. Please review the enclosed documents and provide comments within 45 days of the date

Joan M. Exnicios
Chief, Environmental Planning Branch



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex C

Louisiana State Department of Wildlife and Fisheries Scoping Letter



BOBBY JINDAL
GOVERNOR

State of Louisiana

ROBERT J. BARHAM
SECRETARY

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF SECRETARY

14 April 2009

Ms. Sandra Stiles
U.S. Army Corps of Engineers, CEMVNP-MS,
P.O. Box 60267,
New Orleans, LA 70160-0267,

RE: Notice of Intent to Prepare a Draft Environmental Impact Statement for the Southwest Coastal Louisiana Feasibility Study

Dear Ms. Stiles

The Louisiana Department of Wildlife and Fisheries is the state agency with responsibility for protecting and enhancing the wildlife and aquatic resources of the state and their dependent habitats. The department also manages over 240,000 acres in the southwest portion of the state through the Rockefeller, White Lake, State Wildlife, and Marsh Island refuges. As such, we urge the US Army Corps of Engineers (USACE) and the Office of Coastal Protection and Restoration (OCPR) to minimize enclosure of additional wetlands behind hurricane protection levees.

The EIS shall thoroughly consider and evaluate the potential impacts of hurricane protection features on existing and planned coastal restoration projects. Coordination is required with Louisiana Coastal Area (LCA) Program managers, Coastal Wetlands Planning, Protection and Restoration Act agencies, Coastal Impact Assistance Program (CIAP) representatives and others to insure that ongoing coastal restoration projects are not compromised by the hurricane protection features.

The EIS shall undertake a comprehensive alternatives analysis. Before identifying a preferred hurricane protection alternative the alternatives analysis should evaluate and consider direct and indirect wetland impacts and impacts to rare, threatened and endangered species, natural communities, colonial nesting waterbirds, publicly owned and/or managed lands, and authorized wetland mitigation banks.

The EIS shall develop a comprehensive mitigation plan designed to off-set all impacts to fish and wildlife resources. The mitigation plan shall be developed in coordination with, and be approved by, the resource and regulatory agencies.

LDWF staff attended public scoping meetings in Abbeville and Cameron regarding this project. The general public at those meetings expressed concern about storm drainage issues in the western coastal parishes, saltwater intrusion into the Mermentau basin, and the desire for hurricane protection levees in

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the areas surrounding western Vermilion Bay. We understand that the USACE and the OCPR have retained Dr. Ehab Meselhe to model hydrologic processes in these areas. This is a positive development as historical changes in hydrology in the region coupled with rising sea levels are the major environmental drivers in the system. We urge that the findings of these models be in such a form to be comprehensible to the general public so that the potential consequences of different courses of action are clearly defined. In addition, we urge that the environmental modeling include storm surge and exchange through Atchafalaya, and East and West Cote Blanche Bays to the east of Marsh Island. This is clearly an important physical driver in the Vermilion Bay system.

Further, we urge the USACE and the OCPR to include some consideration of logistical issues that arise with installation/construction of additional culverts, water control structures, gates, etc. We believe a regional approach to water management is the most productive way to reconcile all the needs of the residents of the area.

Thank you for the opportunity to comment on this project.

Sincerely,

J. Heather Warner-Finley
Research and Assessment Division



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex D

National Marine Fisheries Service Scoping Letter

Planning Aid Letter

Comment Letter on Revised Integrated Draft Report & EIS

USACE Comment Response Letter

REPLY TO
ATTENTION OFDEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

JAN 28 2016

Regional Planning and Environment
Division South
Environmental Planning BranchMs Virginia M. Fay
Assistant Regional Administrator
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Ms Fay:

Thank you for your April 29, 2015, comment letter on the March 2015 revised Integrated Draft Feasibility Report and Environmental Impact Statement. Please note the following changes to be reported in the Final Integrated Feasibility Report and Environmental Impact Statement (Final Integrated Report & EIS):

The National Economic Development (NED) Recommended Plan (RP) is the Nonstructural 0-25-Year Floodplain Plan – Modified Plan 8, which proposes implementing nonstructural measures across the 4,700 square mile study area to reduce coastal storm damages to 3,462 residential structures, 342 commercial structures and public buildings, and 157 warehouses. This will be achieved by elevating residential structures, dry flood proofing non-residential structures, and constructing localized storm surge risk reduction measures around warehouses and industrial facilities. Residential structures will be elevated to the base flood elevation (BFE) predicted to occur in the year 2075. Non-residential structures will have flood proofing measures applied generally up to 3 feet (ft) above ground level. Localized storm surge risk reduction measures will be less than 6 ft in height. Acquisition and relocation will be offered to owners whose structure requires raising more than 13 ft above ground level. The NED RP is 100% voluntary.

The National Ecosystem Restoration (NER) Recommended Plan (RP) is "Small Integrated Restoration", also known as NER Plan CM-4, consists of 49 ecosystem restoration features recommended for construction (9 marsh restoration features; 35 chenier reforestation features; and 5 shoreline protection features). The NER RP is the least-cost, cost-effective, comprehensive ecosystem restoration plan that addresses land loss and ecosystem degradation. The NER RP contains features to restore 15,448 acres of wetlands; restore and protect 335 acres of designated critical habitat (for threatened piping plover and red knot); enhance plant productivity; and reinforce and protect critical landscape features. The Calcasieu Ship Channel Salinity Barrier and the Cameron-Creole Watershed Spillway are recommended as additional long-range studies. Two marsh restoration measures, located partially on U.S. Fish and Wildlife



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Service (USFWS) properties are recommended for construction by the USFWS. Measure 124d Marsh Restoration at Mud Lake would be located on Sabine National Wildlife Refuge (NWR). Measure 3c1 Beneficial Use of Dredged Material from Calcasieu Ship Channel would be located on the Cameron Prairie NWR.

Responses to General Comments

Marsh Restoration Features. Consistent with your suggestions regarding dredge pipeline right-of-ways, the Final Integrated Report and EIS includes description that the Corps would utilize the best available practical techniques and best management practices (BMPs) during construction to avoid, minimize and reduce potential adverse impacts to marsh and temporary construction-related impacts, such as placement of dredge pipelines and staging areas would be restored to pre-existing conditions, to the maximum extent practicable, prior to completion of construction activities.

Responses to Specific Comments

The Essential Fish Habitat section has been updated to reflect the list attached to your April 29, 2015, comment letter.

Regarding your EFH Conservation Recommendation, the Final Integrated Report and EIS contains the following language in section 3.3.6 Fisheries and Aquatic Resources:

The best available practical techniques and BMPs would be utilized during construction to avoid, minimize and reduce potential adverse impacts to all terrestrial and aquatic organisms, including fishery and aquatic organisms. Temporary construction related impacts, such as placement of dredge pipelines and staging areas would be restored to pre-existing conditions, to the maximum extent practicable, prior to completion of construction activities.

Details describing best available practical techniques and BMP's regarding pipelines, borrow areas and staging areas are also included in the Biological Assessment and the "Protected Marine Species Entrapment Prevention Measures" and "Marsh Buggy" BMPs" developed for ecosystem restoration projects.

The U.S. Army Corps of Engineers is committed to working cooperatively with the NMFS, USFWS and other natural resource agencies. For further information please contact William P. Klein, Jr. at (504) 862-2540 or via e-mail at william.p.klein.jr@usace.army.mil

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



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

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

April 29, 2015

F/SER46/LA:jk
225/389-0508

Ms. Joan Exnicios, Chief
Environmental Planning and Compliance Branch
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

The NOAA's National Marine Fisheries Service (NMFS) has reviewed the Southwest Coastal Louisiana Revised Integrated Draft Feasibility Report and Draft Environmental Impact Statement (EIS). The draft EIS evaluates alternatives which provide storm damage reduction and ecosystem restoration measures within the 4,700 square mile study area in Louisiana's Chenier plain, encompassing Cameron, Calcasieu, and Vermilion Parishes.

As described in the draft EIS and Feasibility Report, the Tentatively Selected Plan (TSP) is a combination of non-structural storm surge protection measures and an array of different types of ecosystem restoration features. The TSP for the non-structural storm surge protection features include: (1) elevation of residential structures, (2) dry-flood proofing non-residential structures, (3) construction of barriers or berms around non-residential structures, (4) floodplain management plans, (5) more stringent local floodplain regulations, and (6) more restrictive parish and municipal building codes, land use and zoning regulations, and other developmental controls. The TSP for the ecosystem restoration features includes one hydrology/salinity control measure, nine marsh creation measures, five shoreline protection measures, and eight chenier restoration measures.

The NMFS has the following general and specific comments to make regarding information provided in the draft EIS:

General Comments

Marsh Restoration Features. While the majority of the pipeline routes from borrow to marsh creation areas are in open water, some are proposed to pass through marsh. The NMFS is concerned marsh in pipeline rights-of-way (ROWs) and staging areas could be adversely impacted by construction related activities. While NMFS understands such adverse impacts would be offset by the creation of marsh, we believe efforts are warranted to ensure the ROWs and staging areas impacted by construction are restored to pre-existing elevations. In general, such efforts include requiring contractors to pump dredged material into the ROW and staging areas as pipelines are removed, and armoring of ROWs with rip-rap where they intersect with open water areas. The NMFS recommends the Feasibility Report and final EIS include these potential construction-related adverse impacts, as well as a description of measures to be taken to ensure wetlands impacted by construction of marsh creation features are restored to the maximum extent practicable.





Specific Comments

Section 1.4.8 Essential Fish Habitat

Page 1-19 and Appendix A. The Essential Fish Habitat section of the draft EIS incorrectly lists some federally managed species potentially found in the project area. The species and life stages should be updated to reflect the attached list.

The NMFS has a "findings" with the New Orleans District (NOD) on the fulfillment of coordination requirements under provisions of the Magnuson-Stevens Fishery Conservation and Management Act. In those findings, the NOD and NMFS agreed to complete EFH coordination requirements for federal civil works projects through our review and comment on National Environmental Policy Act documents prepared for those projects. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

EFH Conservation Recommendation

The final EIS and Record of Decision for this project should include measures to ensure pipeline ROW and staging areas are restored to pre-existing conditions, to the maximum extent practicable, prior to completion of construction activities.

Consistent with Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act and NMFS' implementing regulation at 50 CFR 600.920(k), your office is required to provide a written response to our EFH conservation recommendation within 30 days of receipt. Your response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the proposed activity. If your response is inconsistent with our EFH conservation recommendation, you must provide a substantive discussion justifying the reasons for not implementing the recommendation. If it is not possible to provide a substantive response within 30 days, the USACE should provide an interim response to NMFS, to be followed by the detailed response. The detailed response should be provided in a manner to ensure it is received by NMFS at least 10 days prior to the signing of a Record of Decision for this action.

The NMFS is committed to working cooperatively with the USACE, the State and other natural resource agencies to facilitate planning on this effort. We appreciate the opportunity to provide these comments for consideration in finalizing the Feasibility Report and EIS.

Sincerely,

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

Enclosure



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

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

November 22, 2013 F/SER46/RS:jk
225/389-0508

Colonel Richard L. Hansen
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-2067

Dear Colonel Hansen:

NOAA's National Marine Fisheries Service (NMFS) is submitting this letter due to recent information provided by the U.S. Army Corps of Engineers' (USACE) Project Delivery Team (PDT) for the Southwest Coastal Louisiana (SWCLA) Feasibility Study, which has transitioned to the SMART (smart, measurable, attainable, risk-informed, and timely) planning process. Based on information provided in PDT meetings, NMFS is concerned insufficient information may be used to assess project effects and select alternatives, and the level of analysis for some measures may not be commensurate with the scale and scope of potential impacts. Some project measures under consideration have the possibility to directly affect wetland health, commercially and recreationally important fisheries resources and user groups, and essential fish habitat (EFH). The NMFS is providing this letter to identify potential concerns regarding sufficiency of the alternatives analysis and the assessment of potential environmental effects which may result from many of the alternatives currently under evaluation.

The study area covers over 4,700 square miles in Louisiana's Chenier plain and encompasses Cameron, Calcasieu, and Vermilion Parishes. The study area includes a wide variety of fishery habitat types ranging from saline to fresh marsh and open water. The study goals are extremely broad in scope, including both National Economic Development (NED) and National Environmental Restoration (NER) objectives. Specific study objectives are to: (1) provide hurricane and storm damage risk reduction, (2) reduce flooding induced by storm surge, and (3) provide ecosystem restoration to achieve ecosystem sustainability. Ecosystem restoration objectives are further defined as: (1) manage tidal flows to improve drainage and prevent salinity from exceeding two parts per thousand (ppt) for fresh marsh and six ppt for intermediate marsh, (2) increase wetland productivity in fresh and intermediate marshes to maintain function by reducing the time water levels exceed marsh surfaces, (3) reduce shoreline erosion and stabilize canal banks to protect adjacent wetlands, and (4) restore critical geomorphologic features, such as marshes and cheniers to maintain their function as wildlife habitat and as protective barriers to inland areas.





To date, the identification, screening and analysis of potential NER measures has relied largely on outputs from predictive models previously developed in conjunction with the Louisiana State Master Plan (SMP). The outputs from the SMP models were used to: (1) screen potential NER measures for further analysis, (2) drive the formulation of alternative arrays, and (3) inform the upcoming selection of a tentatively selected plan (TSP). The SMP model outputs will be used to drive TSP formulation and more detailed future analysis of environmental effects of various measures. We are unaware of any plans by the USACE to utilize additional methods to evaluate the performance of project components prior to the selection of a TSP. Although the SMP model may prove to be a valuable tool for large-scale planning efforts, NMFS cautions the model has not been reviewed by independent scientists or certified by the USACE. It is our understanding the USACE's policies require the use of certified models for all planning studies to ensure the models are technically and theoretically sound, compliant with policy, computationally accurate, and based on reasonable assumptions. Planning models are defined as any models and analytical tools which are used to: (1) define water resources problems and opportunities, (2) formulate potential alternatives to address the problems and take advantage of the opportunities, (3) evaluate potential effects of alternatives, and (4) support decision making. To the contrary, we are unaware of supporting information which would indicate the SMP modeling framework reliably predicts short or long term changes in hydrology, habitat type, vegetative cover, and other information needed to complete a variety of other impact analyses. Therefore, NMFS recommends the USACE either independently assess and certify the SMP models or use a previously USACE certified model for the SWCLA study.

The study currently features seven project alternatives. Hydrology and salinity control measures are included in all but the "No Action Alternative". However, the USACE has not provided data supporting the assumption that hydrologic and salinity control measures are actually effective at reducing wetlands loss rates or are critical components of sustainable ecosystem restoration in the Chenier Plain. Contrarily, there are a large number of studies which demonstrate the installation and operation of water control structures associated with hydrologic and salinity control measures do adversely impact marine fishery productivity. Other studies of areas impacted by the installation of water control structures suggest such actions could also adversely impact wetland health and sustainability. Because such hydrologic control measures are combined with other components which may be more effective in providing ecosystem restoration, their inclusion in every future with project alternative could result in the selection of a TSP which may adversely impact marine fishery production and wetland sustainability while providing limited environmental benefits. The NMFS recommends the USACE conduct further detailed analyses of all hydrological and salinity control measures prior to finalization of the TSP. The analyses should assess site specific hydrology effects of proposed measures, as well as anticipated wetland responses to verify assessed project benefits.

Further, NMFS is concerned there is not sufficient data to fully assess many of the proposed measures. Based on information provided by the PDT, there does not appear to be adequate detail regarding design and future operation of the majority of the hydrologic and salinity control measures. The NMFS believes these measures, designed to affect thousands of acres of aquatic habitats, cannot be assessed for either environmental benefits or impacts without hydraulic and



hydrology information, such as current and future hydroperiod (timing, depth and duration of flooding), salinity, and velocity projections at water control structures. The NMFS recommends more in-depth hydrology and salinity modeling be used to evaluate the proposed structures' impacts on the environment.

The NMFS is also concerned potential environmental impacts may not be revealed through the proposed assessment methods. For example, the Wetland Value Assessment (WVA) model was developed to evaluate and compare relatively small scale coastal restoration projects, rather than support large scale civil works alternatives analyses and impact assessments. Therefore, we believe it is inappropriate to utilize WVA models to determine the effects of basin-wide salinity reductions and reduced water exchange on marine fishery production. Any reduction in fisheries production could have secondary socioeconomic effects, which are also not being quantified to assist in the selection of a TSP. We believe these concerns should be incorporated into the decision-making process regarding the selection of the TSP, as well as addressed in any environmental impact statement (EIS) for the SWCLA project.

Some measures potentially to be included in the TSP, such a flood protection levees and ridge construction on marsh, could result in the destruction of wetlands. While it is possible for some environmental restoration measures to serve as compensatory mitigation for adverse impacts, it does not obviate the need for an evaluation of less damaging alternatives required by the Clean Water Act. The mitigation sequence established by the Clean Water Act Section 404(b)(1) Guidelines states impacts must be avoided, then minimized to the maximum extent practicable prior to the consideration of compensatory mitigation. The SWCLA study, on its current path, does not evaluate potential less damaging alternatives as required by the Clean Water Act.

The NMFS believes these and other issues potentially affecting NOAA trust resources should be thoroughly evaluated prior to selection of the TSP. To be in compliance with the National Environmental Policy Act (NEPA), evaluations of direct, indirect and cumulative impacts would be necessary for incorporation into a draft EIS for the project. Lacking such information in an EIS, NMFS does not believe it would be possible to move TSP directly into Pre-construction Engineering and Design (PED) without additional NEPA evaluations.

We do note the NED and some NER measures (i.e., marsh creation and shoreline protection) may be adequately evaluated as envisioned in the current study plan. As such, it may be appropriate to split off such measures, potentially allowing for full environmental compliance to be achieved within the SMART study schedule and furthering those critical measures to PED. The USACE could then reserve the more complex hydrology and salinity control measures for additional analyses. Due to the scope and diversity of measures under consideration, a Programmatic EIS may also be an alternative means to further the study objectives in this important region, while providing opportunity for more detailed evaluations in the future.

NMFS has findings with the USACE New Orleans District (NOD) describing procedures for EFH consultation during the NOD's review of planning and operations activities subject to compliance with provisions of the Magnuson-Stevens Fishery Conservation and Management



Act and NEPA. Under those procedures, the NOD must produce documents containing: (1) a description of the proposed action, (2) an analysis of individual and cumulative effects on EFH, Federally managed fisheries, including major prey species, (3) the NOD's views regarding effects, and (4) proposed mitigation, if applicable. These documents constitute the basis of an EFH assessment. This finding indicates the document required pursuant to NEPA will incorporate all the necessary requirements of an EFH assessment. Based on information provided to us to-date, NMFS does not believe sufficient analyses will be included in an EIS to adequately fulfill the requirements of an EFH assessment.

There is a potential for various project components to impact other NOAA trust resources managed through our Protected Resources Division. As such, we suggest your staff initiate coordination with Mr. David Bernhart by electronic mail at David.Bernhart@noaa.gov or by telephone at (727) 824-5312.

We look forward to receiving your response regarding these concerns in an effort to proceed with completion of this important study effort. If you wish to discuss this project further or have questions concerning our recommendations, please contact Lisa Abernathy at (225) 389-0508, extension 209.

Sincerely,

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

c:
NOD, Exnicios, Klein
FWS, Walther, Paille
EPA, Ettinger
LDWF, Balkum
LA DNR, Haydel
F/SER3, Bernhart
F/SER4, Dale, Rolfes
F/SER46, Swafford
Files



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

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

October 9, 2009 F/SER46/RH:jk
 225/389-0508

Colonel Alvin B. Lee, Commander
 New Orleans District
 Department of the Army, Corps of Engineers
 Post Office Box 60267
 New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

NOAA's National Marine Fisheries Service (NMFS) has received your letter dated September 29, 2009, stating the intent of the New Orleans District (NOD) to prepare an environmental impact statement (EIS) for the Southwest Coastal Louisiana Protection and Restoration Feasibility Study. The purpose of the study is to determine the feasibility of providing coastal protection and restoration measures to the parishes of Calcasieu, Cameron and Vermilion, and to recommend an implementation plan.

In your letter, you requested NMFS participate as a cooperating agency in the preparation of the EIS for this study. As per provisions of the National Environmental Policy Act, NMFS accepts the NOD's invitation to become a cooperating agency on the EIS for this project. It should be noted that, due to staffing and travel constraints, our participation in the preparation of the EIS for this project may be limited to our review and comment on the draft EIS, participation on teleconferences, and occasional travel to meetings and field inspections. NMFS staff are unable to take an active role in drafting sections of the EIS.

We appreciate your invitation to serve as a cooperating agency on the EIS for this project. Ms. Rachel Sweeney of our Baton Rouge office should be the point of contact for this effort as she has already been coordinating with NOD staff on project issues and alternatives.

Sincerely,

for Miles M. Croom
 Assistant Regional Administrator
 Habitat Conservation Division

c:
 FWS, Lafayette, Soileau
 EPA, Ettinger
 LA OCP, Johnson
 F/SER46, Swafford
 F/SER4, Dale
 Files





cumulative effects of the action, on various categories of EFH, the managed species, and associated life history stage; (3) the federal agency's views regarding the effects of the action on EFH; and, (4) proposed mitigation. While some alternatives may include wetland restoration components, all adverse impacts to various categories of EFH should be identified in the DEIS and a mitigation plan should be developed to fully offset those impacts.

Marine Fishery Resources

Wetlands in the project area consist of fresh, intermediate, brackish, and saline marsh. In addition to being designated as EFH for the species identified in the attached table, these wetlands provide nursery, foraging, and predator refugia habitats that support numerous economically important marine fishery species such as spotted seatrout, sand seatrout, black drum, southern flounder, gulf menhaden, striped mullet, Atlantic croaker, and blue crab. Some of these species also serve as prey for other fish species managed under the Magnuson-Stevens Act by the GMFMC (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). The importance of fishery resources to the state of Louisiana and the national economy is shown by the fact that during 2007, 951,240 pounds of seafood was landed at Louisiana ports totaling \$259 million dollars in dockside value^a. To demonstrate the value of the project area to commercial seafood production, ports at Intracoastal City and Cameron placed fifth and seventh, respectively, in the quantity (pounds) of landings as compared to the rest of the nation. More than 85% of these commercial landings are related to the harvest of estuarine dependent species (i.e., species that depend on access to coastal marsh during one or more life stage). NMFS recommends the DEIS fully describe and quantify the value of marine fishery resources in the study area to Louisiana and the nation and the dependence of those resources on access to, and the continued health of, coastal wetlands.

Alternatives Analysis

Sufficient information should be provided in the DEIS to demonstrate compliance with the Clean Water Act Section 404 regulations in determining the least environmentally damaging practicable alternative to provide the authorized project purpose. That project purpose is hurricane protection and storm damage risk reduction. Under the project authority, hurricane protection, storm surge risk reduction, and restoration are to be identified as measures to achieve the project purpose. To that end, a fully informed alternatives analysis should be prepared before indentifying a tentatively selected plan. Such an analysis should include direct and indirect wetland, EFH, and fishery resource impacts; risk and reliability; borrow material sources; cost; and time to construct for all alternatives, including the fulfillment of requisite compensatory mitigation needs. Whether for storm protection or habitat restoration, sediment sources for construction are a limiting resource and therefore represent a programmatic challenge. As with the ongoing updated 100-year protection for the Greater New Orleans Hurricane and Storm Damage Risk Reduction System, NMFS encourages alternatives analyzed for this study fully consider avoiding all wetland impacts for mining fill material.

NMFS agrees that information developed for the Louisiana Coastal Protection and Restoration Project, Final Technical Report would be a starting point for this authority. However, we are concerned that Report did not include wetland restoration measures in this area for a similar

^a <http://www.st.nmfs.noaa.gov/st1/publications.html>



project purpose. NMFS recommends the Corps of Engineers (COE) re-evaluate some of the assumptions that resulted in a determination that wetland restoration efforts provided no storm surge risk reduction benefits.

NMFS also is concerned that some levee alternatives could prohibit the identification of a cost-effective project that would meet the objectives of providing hurricane and storm surge protection to the most developed areas while maintaining a natural system in areas where such protection may be less warranted. Combining levee alignments and wetland restoration features that stretch across the study area could result in the identification and selection of a project that is so expensive that funding would be prohibitive. Therefore, NMFS believes an alternative that includes construction of ring levees only around large population centers or important infrastructure, combined with more critical wetland restoration activities, should be included in the list of alternatives for in-depth evaluation.

Secondary Impacts

NMFS is concerned with the potential magnitude of secondary, or indirect, impacts to tidal wetlands that could result from the proposed construction of levees and installation of water control structures. Extensive secondary impacts to wetlands and fishery productivity could occur from enclosing wetlands and from mining sediment for levee construction. Considering the potentially large amount of tidally influenced wetlands and water bodies which would be enclosed within levees for certain alternatives, and the value of those wetlands to Louisiana's recreational and commercial marine fishery harvest, this issue is of paramount importance. Construction of levees and water control structures can impede fishery access to critical nursery and foraging habitats and result in the impoundment or semi-impoundment of those wetlands. The DEIS should quantify the acres of all categories of EFH to be enclosed within the levees or behind structures for all alternatives evaluated. The DEIS also should identify means to minimize the adverse impacts of those actions. This includes designing water control structures and developing operational plans to maximize passage of marine fishery organisms. Structure designs and operational plans should be developed in coordination with the natural resource agencies prior to the completion of the DEIS and described in specific detail in the document.

Enclosing wetlands under potential alternatives could result in landscape level alterations of wetland hydrology. This includes ponding of water on the marsh surface and interruption of the frequency and duration of tidal exchange necessary to help maintain plant health. If sufficient cross-sectional area is not provided at all necessary locations within a leveed system, introduced water from rainfall, runoff drainage or from storm overtopping could take an excessive amount of time to drain, which would increase soil anoxia and decrease plant health. Additionally, levees and water control structures could block the flow of sediments, detritus, and nutrients, which are important for maintaining plant health and soil elevations in a subsiding environment, to wetlands both within and outside the impounded system. This would result in an increase in the loss of wetlands in the affected systems. The DEIS should identify and discuss these issues and identify measures for each alternative necessary to maintain the health of enclosed or adjacent wetlands. NMFS believes that an in-depth, comprehensive hydrologic model will have to be developed to adequately evaluate potential hydrologic impacts and the need for drainage pathways. The DEIS should discuss the need for hydrologic modeling to identify the locations



of necessary drainage sites and to quantify the cross-sectional area required to rapidly remove rainfall and storm waters from enclosed wetlands.

The DEIS should evaluate the indirect impacts from the creation of borrow sources. For example, this should include an assessment of impacts on the regional sedimentation processes, impacts on wave refraction/diffraction (if applicable), slope stability, and water quality. Particularly concerning to NMFS would be excavation of continuous borrow pits adjacent to levees. Such an alternative source for fill material would contribute substantially to landscape level alterations to hydrology and likely adversely impact marsh health. If the borrow pits were located outside of the levee, these features can become navigational and hydrologic pathways that could result in erosion of adjacent banklines. While plugs can be constructed in continuous borrow pits to keep this from occurring, such plugs usually are only temporary features in a subsiding and deteriorating environment. The DEIS should address this issue, identify the most likely sources of fill for levee construction, and discuss measures necessary to ensure borrow site locations don't result in adverse impacts to wetland hydrology and marsh health.

Mitigation

The DEIS should contain sufficient information to support a determination of compliance with the Clean Water Act (CWA) Section 404(b)(1) Guidelines. The potential that wetland restoration efforts could offset some or all of the adverse impacts to marsh should not preclude required sequencing to first avoid and then minimize impacts of the proposed action on wetlands. Mitigation requirements for proposed hurricane levee alignments that impact wetlands also should comply with Section 2036 of the Water Resources Development Act (WRDA) of 2007 which requires mitigation for water resources project to comply with the mitigation standards and policies established by the COE regulatory program. In the case of this project, mitigation assessed should be in compliance with the April 10, 2008, CWA Section 404 mitigation regulations, which were issued jointly by the COE and the Environmental Protection Agency. Of primary pertinence is the requirement that mitigation plans include 12 components: objectives, site selection (rationale), site protection instrument, baseline information, determination of credits, mitigation work plan, maintenance plan, performance standards, monitoring requirements, long-term management plan, adaptive management plan, and financial assurances. The need for compensatory mitigation should be recognized in the DEIS, including a discussion of mitigation, and a draft mitigation plan that fully complies with the CWA and WRDA 2007 should be described in the Mitigation section of the document.

In addition to this, wetland restoration and/or flood protection activities are underway under the Louisiana Coastal Protection and Restoration project; the Coastal Wetlands Planning, Protect and Restoration Act; the Louisiana Coastal Area Feasibility Study; the Coastal Protection and Restoration Authority Master Plan; and the Coastal Impact Assessment Program. Additionally, regional sediment management efforts are underway that this study should utilize and adhere to in terms of identifying sediment quantity and quality and priority of its use relative to other programs. The DEIS should identify and discuss all programs that are involved in wetland restoration and flood protection efforts. Furthermore, the COE should make every effort necessary to coordinate planning under this project with those other efforts to facilitate the



5

exchange of information and ensure that activities being undertaken do not compromise the efforts of each.

NMFS is committed to working cooperatively with the COE, the State and other natural resource agencies to facilitate planning on this effort. We appreciate the opportunity to provide these comments for consideration in preparing this DEIS.

Sincerely,

Miles Croom
Assistant Regional Administrator
Habitat Conservation Division

Enclosure

c:
FWS, Lafayette
EPA, Dallas
LA DWF
LA DNR, Consistency
F/SER4
F/SER46, Swafford
Files



EFH Requirements for Species Managed by the Gulf of Mexico Fishery Management Council: Ecoregion 4, Mississippi River Delta (South Pass) to Freeport, Tx, that occur in the study area.

<u>Species</u>	<u>Life Stage</u>	<u>System</u>	<u>EFH</u>
Brown shrimp	larvae/postlarvae	M/E	<82 m; planktonic, sand/shell/soft bottom, SAV, emergent marsh, oyster reef
	juvenile	E	<18 m; SAV, sand/shell/soft bottom, SAV, emergent marsh, oyster reef
White shrimp	larvae/postlarvae	M/E	<82 m; soft bottom, emergent marsh
	juvenile	E	<30 m; soft bottom, emergent marsh
Gulf stone crab	eggs	E/M	<18 m; sand/shell/soft bottom
	larvae/postlarvae	E/M	<18 m; planktonic/oyster reefs, soft bottom
	juvenile	E	<18 m; sand/shell/soft bottom, oyster reef
Red drum	larvae/postlarvae	E	all estuaries planktonic, SAV; sand/shell/soft bottom, emergent marsh
	juvenile	E/M	GOM <5 m Vermilion Bay; all estuaries; SAV; sand/shell/soft/hard bottom, emergent marsh
	adults	E/M	GOM 1-46 m; Vermilion Bay; all estuaries; SAV; sand/shell/soft/hard bottom, emergent marsh
lane snapper	larvae	E/M	4-132 m; reefs; SAV
	juvenile	E/M	<20 m; SAV; mangrove; reefs; sand/shell/soft bottom
bonnethead shark	juvenile/adult	M	inlets; estuaries; coastal waters <25 m; Louisiana to Texas

M=marine, E=estuarine



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex E

**Natural Resources Conservation Service Prime and
Unique Farmlands Coordination**



United States Department of Agriculture



Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

(318) 473-7751
Fax: (318) 473-7626

December 13, 2013

U.S. Army Corps of Engineers
Regional Planning and Environmental Division South
New Orleans Environmental Branch
CEMVN-PDC-CEC
Attn: Eric M. Williams
P.O. Box 80267
New Orleans, Louisiana 70160-0267

RE: Southwest Coastal Louisiana Study – Chenier Ridge Reforestation Project

Dear Mr. Williams:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resources Conservation Service projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project narrative and maps submitted with your request indicates that the proposed construction areas will not "irreversibly" impact prime farmland and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. Furthermore, we do not predict impacts to NRCS work in the vicinity.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location: <http://websoilsurvey.nrcs.usda.gov/>

Please direct all future correspondence to me at the address shown above.

Respectfully,

Kevin D. Norton
State Conservationist

ACTING FOR

Attachment

Helping People Help the Land
An Equal Opportunity Provider and Employer



U.S. Department of Agriculture FARMLAND CONVERSION IMPACT RATING								
PART I (To be completed by Federal Agency)				Date Of Land Evaluation Request: 11/22/2013				
Name of Project: Southwest Coastal Louisiana Study				Federal Agency Involved: US Army Corp of Engineers				
Proposed Land Use: Chenier Ridge Reforestation				County and State: Cameron and Vermilion Parishes, Louisiana				
PART II (To be completed by NRCS)				Date Request Received By NRCS: 11-22-2013		Person Completing Form: M. Lindsey		
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)				YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Acres Irrigated	Average Farm Size	
Major Crop(s)		Famable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %				
Name of Land Evaluation System Used		Name of State or Local Site Assessment system:		Date Land Evaluation Returned by NRCS				
PART III (To be completed by Federal Agency)				Alternative Site Rating				
				Site A	Site B	Site C	Site D	
A. Total Acres To Be Converted Directly				672.9	458.7	251.9	29.6	
B. Total Acres To Be Converted Indirectly				0	0	0	0	
C. Total Acres in Site				672.9	458.7	251.9	29.6	
PART IV (To be completed by NRCS) Land Evaluation Information								
A. Total Acres Prime And Unique Farmland								
B. Total Acres Statewide Important or Local Important Farmland								
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted								
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value								
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)								
PART VI (To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 668.6 b. For Corridor project use Form NRCS-CPA-106)				Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use				(18)				
2. Perimeter In Non-urban Use				(18)				
3. Percent Of Site Being Farmed				(25)				
4. Protection Provided By State and Local Government				(25)				
5. Distance From Urban Built-Up Area				(15)				
6. Distance To Urban Support Services				(15)				
7. Size Of Present Farm Unit Compared To Average				(18)				
8. Creation Of Non-Farmable Farmland				(18)				
9. Availability Of Farm Support Services				(5)				
10. On-Farm Investments				(25)				
11. Effects Of Conversion On Farm Support Services				(16)				
12. Compatibility With Existing Agricultural Use				(16)				
TOTAL SITE ASSESSMENT POINTS				180				
PART VII (To be completed by Federal Agency)								
Relative Value Of Farmland (From Part V)				100				
Total Site Assessment (From Part VI above or local site assessment)				180				
TOTAL POINTS (Total of above 2 lines)				280				
Site Selected:		Date Of Selection:		Was A Local Site Assessment Used?				
				YES <input type="checkbox"/> NO <input type="checkbox"/>				
Reason For Selection:								
Name of Federal agency representative completing this form: Eric M. Williams								
						Date: 11/22/2013		
(See instructions on reverse side)								
Form AD-1006 (03-02)								



STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/leas/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the National Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/county/state/office_publicUSA.asp, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.)
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will retain the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM (For Federal Agency)

- Part I:** When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.
- Part III:** When completing item B (Total Acres To Be Converted Indirectly), include the following:
1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
 2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.
- Part VI:** Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).
1. Assign the maximum points for each site assessment criterion as shown in § 858.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
 2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 100. For project sites where the total points equal or exceed 100, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 100, convert the site assessment points to a base of 100.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 100 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{100}{200} \times 100 = 100 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.



From: Williams, Eric MVN
To: ["Walters, Cheryl - NRCS, Alexandria, LA"](#)
Subject: AD-1006, Prime and Unique Farmlands Evaluation - Southwest Coastal Louisiana Study, U.S. Army Corps of Engineers, New Orleans District (UNCLASSIFIED)
Date: Friday, November 22, 2013 3:56:00 PM
Attachments: [SW Coastal Louisiana Study AD-1006.pdf](#)
[SW Coastal AD-1006 Chenier Ridge Project Description.pdf](#)
[Site_A.dbf](#)
[Site_A.prj](#)
[Site_A.sbn](#)
[Site_A.sbx](#)
[Site_A.shp](#)
[Site_A.shp.xml](#)
[Site_A.shx](#)
[Site_B.dbf](#)
[Site_B.prj](#)
[Site_B.sbn](#)
[Site_B.sbx](#)
[Site_B.shp](#)
[Site_B.shp.xml](#)
[Site_B.shx](#)
[Site_C.dbf](#)
[Site_C.prj](#)
[Site_C.sbn](#)
[Site_C.sbx](#)
[Site_C.shp](#)
[Site_C.shp.xml](#)
[Site_C.shx](#)
[Site_D.dbf](#)
[Site_D.prj](#)
[Site_D.sbn](#)
[Site_D.sbx](#)
[Site_D.shp](#)
[Site_D.shp.xml](#)
[Site_D.shx](#)

Classification: UNCLASSIFIED
Caveats: NONE

Ms. Walters,

Please see the attached form AD-1006 and project description for the subject. The U.S. Army Corps of Engineers is preparing an EIS for the subject project and request that the NRCS provide an evaluation of the prime and unique farmlands for proposed chenier ridge reforestation in southwest Louisiana. The proposed reforestation would convert approximately 1,431 acres of existing chenier ridge from future agricultural or grazing use. Shape files are attached for use in the evaluation. If you have questions regarding the project, the attached form AD-1006, or the shape files, please do not hesitate to contact me at (504) 862-2862.

Please advise if use of email is acceptable, or if in the future we should transmit these requests via another method.

Eric M. Williams

RPEDS, South/CEMVN-PDN-NCR

504/862-2862



Fax: 504/862-2088

eric.m.williams@usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE



U.S. Department of Agriculture						
FARMLAND CONVERSION IMPACT RATING						
PART I (To be completed by Federal Agency)				Date Of Land Evaluation Request 11/22/2013		
Name of Project Southwest Coastal Louisiana Study				Federal Agency Involved US Army Corp of Engineers		
Proposed Land Use Chenier Ridge Reforestation				County and State Cameron and Vermilion Parishes, Louisiana		
PART II (To be completed by NRCS)				Date Request Received By NRCS		Person Completing Form:
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>				YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated
						Average Farm Size
Major Crop(s)		Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used		Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)				Alternative Site Rating		
A. Total Acres To Be Converted Directly				Site A	Site B	Site C
B. Total Acres To Be Converted Indirectly				672.9	458.7	251.9
C. Total Acres In Site				0	0	0
				672.9	458.7	251.9
PART IV (To be completed by NRCS) Land Evaluation Information						
A. Total Acres Prime And Unique Farmland						
B. Total Acres Statewide Important or Local Important Farmland						
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted						
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value						
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)						
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>				Maximum Points	Site A	Site B
1. Area In Non-urban Use				(15)		
2. Perimeter In Non-urban Use				(10)		
3. Percent Of Site Being Farmed				(20)		
4. Protection Provided By State and Local Government				(20)		
5. Distance From Urban Built-up Area				(15)		
6. Distance To Urban Support Services				(15)		
7. Size Of Present Farm Unit Compared To Average				(10)		
8. Creation Of Non-farmable Farmland				(10)		
9. Availability Of Farm Support Services				(5)		
10. On-Farm Investments				(20)		
11. Effects Of Conversion On Farm Support Services				(10)		
12. Compatibility With Existing Agricultural Use				(10)		
TOTAL SITE ASSESSMENT POINTS				160		
PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)				100		
Total Site Assessment (From Part VI above or local site assessment)				160		
TOTAL POINTS (Total of above 2 lines)				260		
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?		
				YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Reason For Selection:						
Name of Federal agency representative completing this form: Eric M. Williams					Date: 11/22/2013	
(See Instructions on reverse side)					Form AD-1006 (03-02)	



STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>
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INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

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2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.



Project Description for the Chenier Reforestation Measure of the National Environmental Restoration Component of the Southwest Coastal Louisiana Study

The proposed activity would consist of planting trees for the reforestation of chenier ridges along the southwest Louisiana coast:

- Original measures included all cheniers and elevated features identified by the *Cheniers and Natural Ridges Study* (Providence Engineering and Environmental Group LLC 2009).
- From these, east/west-oriented cheniers with elevations generally greater than +5 feet NAVD 88 (from LIDAR) were selected. The +5 feet NAVD 88 target elevation is considered a conservative minimum elevation that could sustain tree plantings for the duration of the study period given relative sea level rise, and is taken from Didier (2007) and other professional opinions. The selected cheniers included: Measure 510a - Blue Buck Ridge; Measure 510b - Hackberry Ridge; Measure 510d - Front Ridge; Measure 416 - Grand Chenier Ridge; Measure 509c - Bill Ridge; and Measure 509d - Cheniere Au Tigre.
- Within these measures, reforestation focused specifically on large, continuous, sparsely wooded tracts greater than 5 acres, excluding: areas below +5 feet NAVD 88; areas with residential or industrial development; and sand borrow pits.
- For purposes of the prime and unique farmlands evaluation and to more easily correspond with Form AD-1006, the measures have been grouped as sites A – D. All of the measures discussed are part of the proposed action, and shape files for each *Site* are provided:
 - **Site A**
 - Measure 510a – Blue Buck Ridge: Eight tracts totaling 524.4 acres were identified (from west to east: 16.2, 40.4, 45.6, 141.2, 18.2, 20.4, 202.8, and 39.6-acre tracts).
 - Measure 510b – Hackberry Ridge: Three tracts totaling 148.5 acres were identified (from west to east: 62.7, 72.2, and 13.6-acre tracts). The western two miles (including the 62.7-acre tract) of this measure have been identified by the Louisiana Natural Heritage Program as “Remnant Chenier Forest”, but appear to have been damaged by recent hurricanes.
 - **Site B**
 - Measure 510d – Front Ridge: The eastern 3.1 miles of this measure do not encompass large swaths of suitable elevation. Of the remainder, eleven tracts totaling 458.7 acres were identified (from west to east: 35.7, 47.1, 70.0, 125.6, 65.2, 12.3, 22.4, 15.0, 29.8, 13.0, 22.6-acre tracts).
 - **Site C**
 - Measure 416 – Grand Chenier Ridge: The eastern 5.8 miles of this measure do not encompass large swaths of suitable elevation. Of the remainder, nine tracts totaling 251.9 acres were identified (from west to east: 8.5, 11.0, 13.1, 19.4, 85.6, 46.7, 25.7, 29.1, and 12.8-acre tracts).



- **Site D**
 - Measure 509c – Bill Ridge: Three tracts were identified that encompass 8.8 acres of the northern ridge, and 6.5 and 6.1 acres of the southern ridge. The middle section of the southern ridge was excluded due to insufficient elevation.
 - Measure 509d – Cheniere Au Tigre: The majority of this chenier is forested with the exception of an 8.2 acre tract on the western end. The eastern part of the measure along the Gulf shoreline was removed due to concerns about the sustainability of tree plantings in these exposed areas.



Figure 1. Selected reforestation tracts for Measures 509c, 509d, and 416.



Figure 2. Selected reforestation tracts for Measures 510d, 510a, and 510b.



**SOUTHWEST COASTAL LOUISIANA
INTEGRATED FINAL FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

APPENDIX A

Annex F

**State Historic Preservation Officer (SHPO) and
Tribal Coordination Letters**



**Programmatic Agreement
National Economic Development/
National Ecosystem Restoration**



**PROGRAMMATIC AGREEMENT
AMONG THE UNITED STATES ARMY CORPS OF ENGINEERS,
THE LOUISIANA STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE NATIONAL ECONOMIC DEVELOPMENT COMPONENT OF THE
SOUTHWEST COASTAL LOUISIANA STUDY**

WHEREAS, historically, the low elevation and proximity of the Calcasieu, Cameron and Vermilion Parishes to the Gulf of Mexico puts these southwest coastal Louisiana communities at risk of damages from storm surge flooding and coastal erosion; and

WHEREAS, the U.S. Congress through separate reciprocal authorizations, authorized the investigation of alternatives to: (1) provide hurricane and storm damage risk reduction measures; and (2) significantly restore environmental conditions that existed prior to the large scale alteration of the natural ecosystem in this three (3) parish area. This study, hereafter referred to as the Southwest Coastal Louisiana Study (SWC Study), focuses on a 4,700 square mile study area located in Calcasieu, Cameron, and Vermilion Parishes (the Study Area); and

WHEREAS, the Louisiana Coastal Protection and Restoration Authority Board (CPRAB) is the non-federal sponsor for SWC Study; and

WHEREAS, the hurricane and storm damage risk reduction component of the SWC Study, referred to as the National Economic Development (NED) plan (NED Plan), is the subject of this Programmatic Agreement (PA or this Agreement), and the ecosystem restoration component of the SWC Study, referred to as the National Ecosystem Restoration (NER) component, is the subject of a separate programmatic agreement; and

WHEREAS, the NED component of the SWC Study was authorized based on language in the River and Harbor Act of 1962 and a resolution of the Committee on Transportation and Infrastructure of the United States House of Representatives following the impact of Hurricane Rita in 2005, to wit:

"Surveys of the coastal areas of the United States and its possessions, including the shores of the Great Lakes, in the interest of beach erosion control, hurricane protection and related purposes: Provided, 'That surveys of particular areas shall be authorized by appropriate resolution of either the Committee on Public Works of the United States Senate or the Committee on Public Works of the House of Representatives."

AND

"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, that, in accordance with Section 110 of the River and Harbor Act of 1962, the Secretary of the Army is requested to survey the coast of Louisiana in Cameron, Calcasieu, and Vermilion parishes with particular reference to the advisability



of providing hurricane protection and storm damage reduction and related purposes to include the feasibility of constructing an armored 12-foot levee along the Gulf Intracoastal Waterway." (December 7, 2005 – Committee on Transportation and Infrastructure, U.S. House of Representatives, Resolution Docket 2747, Southwest Coastal Louisiana); and

WHEREAS, the NED Plan includes nonstructural hurricane and storm damage risk reduction measures for residential and non-residential structures that meet the eligibility criteria for the NED Plan located in the Study Area with first-floor elevations at or below the 25-year base flood elevation based on year 2025 hydrology (NED Structures); and

WHEREAS, pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), the U.S. Army Corps of Engineers (USACE) has determined that implementation of the NED Plan will result in Undertakings that have the potential to cause effects on properties listed in or eligible for listing in the National Register of Historic Places (NRHP) and properties that have religious and cultural significance for federally-recognized Indian Tribes as defined in 36 CFR § 800.16(m) (Tribes) (collectively, "historic properties" as defined in 36 CFR § 800.16(l)(1)); and

WHEREAS, an Undertaking, as defined in 36 CFR § 800.16(y) may include any one of the following nonstructural hurricane and storm damage risk reduction measures and any related project activities that have the potential to cause effects on historic properties: 1. elevation of residential structures, 2. dry flood proofing of non-residential structures, 3. construction of localized storm surge risk reduction measures of less than 6 feet in height around non-residential structures, and 4. acquisition and demolition of residential and/or non-residential structures; and

WHEREAS, each Undertaking with its respective area of potential effects (APE) will be treated separately for the purposes of Section 106 consultation; and

WHEREAS, USACE has elected to fulfill its Section 106 obligations through execution and implementation of a programmatic agreement as provided for in 36 CFR § 800.14(b); and

WHEREAS, USACE has notified the Advisory Council on Historic Preservation (ACHP) of the potential for the Undertakings to affect historic properties and that a programmatic agreement will be prepared, and the ACHP has chosen to participate in consultation to develop this Agreement; and

WHEREAS, USACE has consulted with the Louisiana State Historic Preservation Officer (SHPO), Tribes, Tribal Historic Preservation Officers (THPOs), ACHP, CPRAB, and other appropriate consulting parties in developing this Agreement in order to define efficient and cost effective processes for taking into consideration the effects of the Undertakings upon historic properties; and



WHEREAS, USACE acknowledges Tribes as sovereign nations which have a unique government-to-government relationship with the federal government and its agencies; USACE further acknowledges its Trust Responsibility to those Tribes; and

WHEREAS, USACE has made a reasonable and good faith effort to identify any Tribes that may attach religious and cultural significance to historic properties that may be affected by the Undertakings; and

WHEREAS, USACE has invited the Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, Quapaw Tribe of Oklahoma, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and the Tunica-Biloxi Tribe of Louisiana, Tribes for which historic properties located in the State of Louisiana have religious and cultural significance, to consult in the development of this Agreement; and

WHEREAS, the Quapaw Tribe of Oklahoma and the Muscogee (Creek) Nation have determined that the Undertakings are not within their geographic area of interest and have chosen not to participate in the development of this Agreement; and

WHEREAS, the Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Seminole Nation of Oklahoma, and Seminole Tribe of Florida have chosen to participate in the development of this Agreement and have been invited to sign this Agreement as an Invited Signatory Party; and

WHEREAS, the Tunica-Biloxi Tribe of Louisiana and those Tribes that have not participated in the development of this Agreement but that may choose to participate in Section 106 consultation will be invited to sign this Agreement as a Concurring Party; and

WHEREAS, CPRAB has participated in the development of this Agreement and has been invited to sign this Agreement as an Invited Signatory Party; and

WHEREAS, USACE has taken appropriate measures to identify other consulting parties that may be interested in Section 106 consultation, by notification to the Parish Presidents of Calcasieu, Cameron, and Vermilion parishes, as well as the Abbeville Community and Historic Preservation Commission, Abbeville Main Street, Calcasieu Historical Preservation Society, Foundation for Historical Louisiana, Lake Charles Historic Preservation Commission, Louisiana Trust for Historic Preservation, National Trust for Historic Preservation, Vermilion Historical Society, and the Atakapa-Ishak Nation. Consulting parties that participate in Section 106 consultation may be invited to sign this Agreement as a Concurring Party; and

WHEREAS, USACE has involved the public through the National Environmental Policy Act (NEPA) process, which affords all persons, organizations, and government agencies the right to review and comment on proposed major federal actions that are



evaluated by a NEPA document. Public meetings to collect input during planning were held in March 2009, July 2009, February 2010, March 2010, July 2010, October 2011, April 2012, July 2013, and August 2013. On December 13, 2013, USACE released an Integrated Draft Feasibility Report and Environmental Impact Statement for the SWC Study (Draft Report) to the public for a review period of forty-five (45) calendar days, which was extended an additional fourteen (14) days until February 13, 2014. This document included a general discussion of cultural resources within the study area. Public hearings of the Draft Report were held on January 7 and 9, 2014. On March 20, 2015, USACE released a Revised Integrated Draft Feasibility Report and Environmental Impact Statement for the SWC Study (Revised Draft Report) to the public for a review period of forty-five (45) calendar days. Public hearings of the Revised Draft Report were held on April 14, 15, and 16, 2015. USACE has also notified the public of the development of this Agreement with newspaper announcements in the *Abbeville Meridional*, *American Press*, and *The Advocate*; and

NOW, THEREFORE, USACE, SHPO, and ACHP agree that the Undertakings shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertakings on historic properties.

STIPULATIONS

To the extent of its legal authority, USACE shall ensure that the following terms are carried out:

- I. Consultation and Coordination
 - A. Following Congressional authorization and appropriation to implement the entirety or some portion of the NED Plan, USACE shall meet with Signatory and Invited Signatory parties to review the NED Nonstructural Implementation Plan and this Agreement.
 - B. USACE shall make a reasonable and good faith effort to identify any additional Tribes that might attach religious and cultural significance to historic properties in the APE for an Undertaking and invite those Tribes to participate in Section 106 consultation.
 - C. USACE shall consult with Tribes that are Invited Signatory Parties and Concurring Parties, as well as any other Tribe that requests in writing to be a consulting party (collectively, "Consulting Tribes").
 - D. USACE shall provide Consulting Tribes with an executed copy of this Agreement and with copies of all plans, determinations, and findings provided to the SHPO.
 - E. Owners of NED Structures (Property Owners) are entitled to participate as consulting parties in the Section 106 process as it relates to the property in which they hold an ownership interest.



- F. Individuals or organizations with a demonstrated interest in an Undertaking, including certified local governments, may be invited to participate as consulting parties due to the nature of their legal or economic relations to an Undertaking or affected properties, or their concern with an Undertaking's effects on historic properties, if agreed upon by the USACE and SHPO.
 - G. To the extent permitted under applicable federal laws and regulations, for example, Section 304 of the NHPA (54 U.S.C. § 307103), 36 CFR § 800.11(c), and Section 9 of the Archaeological Resources Protection Act of 1979 (ARPA) (16 U.S.C. 470aa-mm; Public Law 96-95 and amendments to it), USACE will make available to the public documents developed pursuant to this Agreement.
 - H. Electronic mail (email) will serve as the official correspondence method for all communications regarding this Agreement and its provisions. See Appendix A for a list of contacts and email addresses. Contact information in Appendix A may be updated as needed without an amendment to this Agreement. It is the responsibility of each signatory to immediately inform the USACE of any change in name, address, email address, or phone number of any point-of-contact. USACE will forward this information to all signatories by email. Failure of any party to this Agreement to notify the USACE of any change to a point-of-contact's information shall not be grounds for asserting that notice of a proposed action was not received.
 - I. All standard response timeframes established by 36 CFR Part 800 will apply to this Agreement, unless an alternative response timeframe is agreed to by the SHPO and Consulting Tribes on a case-by-case basis.
 - J. All time designations will be in calendar days. If any party does not comment within the agreed upon timeframes, USACE may assume that party's concurrence with the USACE's determination, and will notify all consulting parties of the action and proceed in accordance with this Agreement.
- II. Standards
- A. All work carried out pursuant to this Agreement shall be done by or under the direct supervision of historic preservation professionals who meet the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61).
 - B. All work carried out pursuant to this Agreement shall meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68).
 - C. The elevation of residential structures carried out pursuant to this Agreement that may affect historic properties shall meet the Louisiana Division of Historic Preservation's *Elevation Guidelines for Historic Buildings in the Louisiana GO Zone*.



- D. All historic standing structures surveys carried out pursuant to this Agreement shall be completed in accordance with the Louisiana Historic Resource Inventory Guidelines of the Louisiana Division of Historic Preservation.
 - E. All archaeological investigations carried out pursuant to this Agreement shall be completed in accordance with the Field Standards and documented in accordance with the Report Standards of the Louisiana Division of Archaeology.
- III. Identification and Evaluation of Historic Properties
- A. USACE, in consultation with the SHPO and Consulting Tribes, will determine and document the geographic areas within which an Undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist, hereafter referred to as an APE. USACE will conduct a reasonable and good faith effort to identify historic properties located within an APE.
 - 1. USACE shall seek input from consulting parties, as appropriate, concerning:
 - a. the historic significance of structures that have not previously been evaluated for eligibility for listing in the National Register, either individually or as contributing to a historic district;
 - b. the potential for archaeological properties to be present; and
 - c. the potential for properties of religious and cultural significance to Tribes to be present.

Any comments provided to the USACE shall be considered by the USACE and SHPO in evaluating National Register eligibility.
 - 2. USACE shall ensure that a Louisiana Historic Resource Inventory (LHRI) Form will be completed for each eligible and participating NED Structure 50 years of age or older and for additional structures 50 years of age or older located within an APE that have not been previously surveyed in accordance with the guidelines for Intensive Level Survey of the Louisiana Division of Historic Preservation. An LHRI Update Addendum will be completed for each eligible and participating NED Structure and additional structures located within an APE that have been previously surveyed.
 - 3. USACE will consult with the SHPO and Consulting Tribes to determine the level of effort necessary to identify the anticipated type and location of archaeological properties or properties of religious and cultural significance to Tribes. The level of survey to be conducted within an APE and the survey methodology will be developed in consultation with the SHPO and Consulting Tribes and completed in a manner that meets the standards for Reconnaissance or Phase I Investigations as defined by the Louisiana Division of Archaeology. These efforts will be documented in reports that



USACE will submit to SHPO and Consulting Tribes for review and comment. USACE will ensure that the comments provided by the SHPO and Consulting Tribes are addressed and incorporated into a final report.

4. USACE will consult with the SHPO on the eligibility of all structures located in an APE, and with the SHPO and Consulting Tribes on the eligibility of all archaeological properties and properties of religious and cultural significance to Tribes located in an APE. For properties already eligible or listed in the National Register, USACE will consult to determine whether or not the property retains the characteristics that make it eligible for listing in the National Register.
 - B. Consultation under this Agreement for an Undertaking will be concluded for USACE findings of *no historic properties affected* when the SHPO and Consulting Tribes have been provided the opportunity to review and comment on the documentation specified in 36 CFR § 800.11(d) and either concur or do not object within the agreed upon response timeframe. USACE shall notify any additional consulting parties and make documentation of the finding available to the public. This shall complete the USACE's Section 106 responsibilities for these properties.
 - C. In the event of disagreement between the USACE, SHPO, and/or Consulting Tribes concerning the eligibility of a property for listing in the NRHP under 36 CFR Part 60, USACE shall request a formal determination of eligibility for that property from the Keeper of the NRHP (Keeper). The determination by the Keeper will serve as the final decision regarding the NRHP eligibility of the property.
- IV. Historic Properties Affected
- A. USACE shall notify the SHPO, Consulting Tribes, and other consulting parties, as appropriate, that an Undertaking may affect historic properties and shall continue consultation with the aforementioned parties to apply the criteria of adverse effects to historic properties within an APE in accordance with 36 CFR § 800.5.
 - B. Consultation under this Agreement will be concluded for USACE findings of *no adverse effect* when the SHPO and Consulting Tribes have been provided the opportunity to review and comment on the documentation specified in 36 CFR § 800.11(e) and either concur or do not object within the agreed upon response timeframe.
 - C. In the event of an objection by the SHPO and/or Consulting Tribes regarding a USACE finding of *no adverse effect*, USACE shall seek to resolve such objection through consultation in accordance with procedures outlined in Stipulation IX.



V. Resolution of Adverse Effects

- A. USACE shall continue consultation with the SHPO, Consulting Tribes, and other consulting parties, as appropriate, pursuant to 36 CFR § 800.6 to avoid, minimize, or mitigate adverse effects to historic properties.
- B. USACE shall notify the ACHP and other consulting parties, as appropriate, and determine their participation. The notification of the adverse effect shall include the documentation specified in 36 CFR § 800.11(e), subject to the confidentiality provisions of 36 CFR § 800.11(c), and such other documentation as may be developed during the consultation to resolve adverse effects, including views and summaries of the consulting parties. If the project activity will affect a National Historic Landmark, USACE shall also notify the National Park Service (NPS).
- C. Once the USACE, SHPO, Consulting Tribes, and ACHP, should they decide to participate in consultation, agree on how the adverse effects will be resolved, they shall execute and implement a Memorandum of Agreement (MOA) pursuant to 36 CFR § 800.6(c). USACE shall submit a copy of the executed MOA, along with the documentation specified in 36 CFR § 800.11(f), to the ACHP prior to approving an Undertaking. A copy of the executed MOA shall be forwarded to all Signatory, Invited Signatory, and Concurring Parties.
- D. Should the USACE, SHPO, and Consulting Tribes disagree on how the adverse effects will be resolved, USACE shall seek to resolve such objection through consultation in accordance with procedures outlined in Stipulation IX.

VI. Curation

- A. USACE shall ensure that all collections resulting from identification and evaluation surveys, data recovery operations, or other studies pursuant to this Agreement are maintained in accordance with 36 CFR Part 79 as long as there is a USACE interest in the collections, minimally until the analysis is complete and the final report is accepted by the Division of Archaeology. USACE shall be responsible for costs to process, catalog, and accession all collections in accordance with 36 CFR Part 79.
- B. USACE shall be responsible for consulting with landowners regarding the curation of collections resulting from identification and evaluation surveys, data recovery operations, or other studies pursuant to this Agreement. USACE shall encourage non-federal landowners to donate collections to the Division of Archaeology or other facility meeting the standards of 36 CFR Part 79 for long-term curation. USACE shall be responsible for negotiating the return of collections to non-federal landowners should they elect not to donate the collections, including any costs required to return the collections.
- C. USACE shall be responsible for costs to prepare federally-owned collections, including the associated records of non-federal collections, and any non-federal collections donated to the Division of Archaeology or other facility agreed upon



by SHPO and Consulting Tribes for long-term curation. Collections to be deposited with a curation facility shall be prepared in accordance with the standards of that facility.

- D. USACE shall be responsible for costs to curate federally-owned collections, including the associated records of non-federal collections, long-term in accordance with 36 CFR Part 79 and the curation agreement in effect with the facility accepting the collections. For non-federal collections donated to the Division of Archaeology or other facility, USACE shall be responsible for the one-time accession fee assessed by the Division of Archaeology or other facility meeting the standards of 36 CFR Part 79.

VII. Discovery of Human Remains

- A. The following language shall be included in construction plans and specifications:

When human remains, suspected human remains, or indications of a burial are discovered during the execution of an Undertaking, the individual(s) who made the discovery shall immediately notify the local law enforcement, coroner/medical examiner, and the USACE, New Orleans District, and make a reasonable effort to protect the remains from any harm. The human remains shall not be touched, moved, or further disturbed. All activities shall cease within a minimum of 50 feet from the area of the find (50-foot radius "no work" buffer) until authorized by the USACE.

- B. Upon notification, USACE shall ensure that the area of the find is secured and protected from further disturbance. USACE shall ensure that the following procedures will be followed if the area of the find is located on private or state land, or federal or tribal land.

1. Private or State Land. In the event that the area of the find is located on private or state land, the procedures established by the Louisiana Unmarked Human Burial Sites Preservation Act (La. R.S. 8:671-681) are applicable.

- a. USACE shall immediately notify the State Archaeologist of the discovery.
- b. USACE shall continue consultation with SHPO, Consulting Tribes, and additional consulting parties, as appropriate.
- c. USACE shall ensure that no remains will be removed from the area of the find until jurisdiction is established and the appropriate permits are obtained from the Division of Archaeology.

2. Federal or Tribal Land. In the event that the area of the find is located on federal or tribal land, the procedures established by the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. § 3001-3013, 18 U.S.C. § 1170) and the implementing regulations (43 CFR



Part 10), and ARPA and the implementing regulations (43 CFR Part 7) are applicable.

- a. USACE shall immediately notify the responsible federal agency official or Indian tribe official with jurisdiction over the remains.
- b. USACE shall continue consultation with SHPO, Consulting Tribes, and additional consulting parties, as appropriate.
- c. If the USACE is the responsible federal agency, then the USACE shall ensure that the procedures established by NAGPRA and ARPA are followed, as applicable.

- C. All Signatory and Invited Signatory Parties agree that the most appropriate treatment, if feasible, is to protect human remains and permanently preserve burial sites in situ.

VIII. Unanticipated Discoveries and Effects

- A. The following language shall be included in construction plans and specifications:

When a previously unidentified cultural resource, including but not limited to archeological sites, standing structures, and properties of traditional religious and cultural significance to Tribes, is discovered during the execution of an Undertaking, the individual(s) who made the discovery shall immediately secure the vicinity, make a reasonable effort to avoid or minimize harm to the resource, and notify the USACE, New Orleans District. All activities shall cease within a minimum of 50 feet from the inadvertent discovery (50-foot radius "no work" buffer) until authorized by the USACE.

- B. Upon notification, USACE shall implement any additional reasonable measures necessary to avoid or minimize effects to the resource. Any previously unidentified cultural resource will be treated as though it is eligible for the NRHP until such other determination may be made.
- C. USACE shall immediately notify the SHPO, Consulting Tribes, and additional consulting parties, as appropriate, within 48 hours of the finding and request consultation to resolve potential adverse effects.
 1. If consulting parties agree that the cultural resource is not eligible for the NRHP, then the suspension of work will end.
 2. If consulting parties agree that the cultural resource is eligible for the NRHP, then the suspension of work will continue, and the USACE, in consultation with the SHPO and Consulting Tribes, will determine actions to avoid, minimize, or mitigate adverse effects to the historic property and will ensure that the appropriate actions are carried out.



- D. In the event that the USACE is notified of the discovery of previously unidentified archaeological resources on federal or tribal land during the execution of an Undertaking, USACE shall ensure that procedures established by ARPA and implementing regulations (43 CFR Part 7) will be followed.
 - E. In the event that the USACE is notified of the discovery of funerary objects, sacred objects, or objects of cultural patrimony on federal or tribal land during the execution of an Undertaking, USACE shall ensure that procedures outlined in Stipulation VII will be followed.
 - F. In the event that effects to historic properties are identified following the completion of a project activity, any party may provide the USACE with evidence of such effects for a period of twelve (12) months from the completion of the affecting work. USACE shall review the evidence and consult with the SHPO, Consulting Tribes, and ACHP, as appropriate, to resolve any adverse effects.
 - G. If the USACE, SHPO, and Consulting Tribes cannot agree on an appropriate course of action to address an unanticipated discovery or effects situation, then the USACE shall initiate the dispute resolution process set forth in Stipulation IX.
- IX. Dispute Resolution
- A. Except for the resolution of eligibility issues as set forth in Stipulation III, should any Signatory, Invited Signatory, or Concurring Party object in writing to the USACE at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, USACE shall consult with such party to resolve the objection.
 - B. If the USACE determines that such objection cannot be resolved, the USACE shall forward all documentation relevant to the dispute, including USACE's proposed resolution, to the ACHP.
 - C. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories, Invited Signatories, and Concurring Parties, and provide them with a copy of this written response. USACE will then proceed according to its final decision.
 - D. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories, Invited Signatories, and Concurring Parties, and provide them and the ACHP with a copy of such written response. USACE will then proceed according to its final decision.



- E. USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.
- X. Administration, Effect, and Duration
- A. This Agreement shall take effect upon execution by the ACHP, USACE, and SHPO. USACE shall provide Signatory, Invited Signatory, and Concurring Parties with a complete copy of this Agreement including all executed signature pages.
 - B. This Agreement will remain in effect for twenty (20) years from the date of execution unless the Signatory Parties agree that there is a need to extend the term. Prior to the end of the twenty-year term, USACE will consult with ACHP and SHPO to determine interest in extending this Agreement. This Agreement may be extended by written agreement negotiated by Signatory Parties and by amending this Agreement consistent with Stipulation XII.
 - C. Each year following the execution of this Agreement until it expires or is terminated, USACE shall provide all Signatory, Invited Signatory, and Concurring Parties a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in USACE's efforts to carry out the terms of this Agreement.
 - D. Following authorization and appropriation, USACE shall coordinate a meeting of the Signatory, Invited Signatory, and Concurring Parties to be held annually on a mutually agreed upon date to evaluate the effectiveness of this Agreement and discuss activities carried out pursuant to this Agreement during the preceding year and activities scheduled for the upcoming year. After five (5) years, USACE will initiate the discussion of cumulative effects as provided for in Stipulation XI. The meeting shall be held in a location agreed upon by consensus of the Signatory Parties.
- XI. Comprehensive Review
- A. Upon completion of the implementation of the NED Plan, USACE will analyze the Undertakings holistically to assess cumulative effects upon historic properties. Cumulative effects are those which result from the incremental impacts of an undertaking when added to other past, present, and reasonably foreseeable future federal or non-federal undertakings.
 - B. USACE, in consultation with the Signatory and Invited Signatory Parties, will identify and implement measures, as appropriate, to mitigate adverse cumulative effects on historic properties. If there is a disagreement that cannot be resolved, USACE shall initiate the dispute resolution process set forth in Stipulation IX.
 - C. Agreed upon measures to resolve adverse cumulative effects will be documented in a report that meets the standards of the Louisiana Division of Historic



Preservation and the Division of Archaeology and will be submitted to SHPO and Consulting Tribes for review and comment. The final cumulative report will be distributed to the Signatory, Invited Signatory, and Concurring Parties.

XII. Amendment and Termination

- A. Notwithstanding any provision of this Agreement, Signatory and Invited Signatory Parties may request that it be amended, whereupon these parties will consult to consider such amendment. USACE shall facilitate such consultation within thirty (30) days of receipt of the written request. Where no consensus can be reached, this Agreement will not be amended. Any amendment to this Agreement will be in writing and will be signed by Signatory and Invited Signatory Parties, and shall be effective on the date of the final signature.
- B. Any Invited Signatory Party may withdraw its participation in this Agreement by providing thirty (30) days advance written notification to all other Signatory and Invited Signatory Parties. In the event of withdrawal by an Invited Signatory Party, this Agreement will remain in effect for the other Signatory and Invited Signatory Parties.
- C. This Agreement may be terminated in accordance with 36 CFR Part 800, provided that the Signatory and Invited Signatory Parties consult during the period prior to termination to seek agreement on amendments or other actions that could avoid termination. Any Signatory Party requesting termination of this Agreement shall provide thirty (30) days advance written notification to all other Signatory and Invited Signatory Parties.
- D. Termination of this Agreement does not relieve USACE of any remaining obligations it may have, as of the date of termination, under 36 CFR Part 800.

Execution of this Agreement by the ACHP, USACE, and SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the NED Plan upon historic properties and has afforded the ACHP an opportunity to comment.



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

United States Army Corps of Engineers

By: *Richard L. Hansen*
Richard L. Hansen
Colonel, U.S. Army
District Commander

Date: 22 Feb 2016

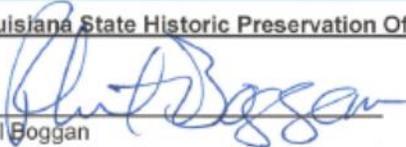


**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
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National Economic Development Component of the
Southwest Coastal Louisiana Study**

Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Louisiana State Historic Preservation Officer

By: 
Phil Boggan
Louisiana State Historic Preservation Officer
Louisiana Office of Cultural Development

Date: 2-19-16



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Advisory Council on Historic Preservation

By: 
John M. Fowler
Executive Director
Advisory Council on Historic Preservation

Date: 2/24/16



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Chitimacha Tribe of Louisiana

By: _____
O'Neil J. Darden, Jr., Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Choctaw Nation of Oklahoma

By: _____
Gary Batton, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Coushatta Tribe of Louisiana

By: _____
Kevin Sickey, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Mississippi Band of Choctaw Indians

By: _____
Phyliss J. Anderson, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Alabama-Coushatta Tribe of Texas

By: _____
Carlos Bullock, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Caddo Nation of Oklahoma

By: _____
Tamara Francis-Fourkiller, Chairman/THPO

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Jena Band of the Choctaw Indians

By: _____
B. Cheryl Smith, Principal Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Seminole Nation of Oklahoma

By: _____
Leonard M. Harjo, Principal Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Seminole Tribe of Florida

By: _____
James Billie, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Concurring Party:

Tunica-Biloxi Tribe of Louisiana

By: _____
Joey Barbry, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Economic Development Component of the
Southwest Coastal Louisiana Study**

Concurring Party:

Coastal Protection and Restoration Authority Board

By: _____
Jerome Zeringue, Chair

Date: _____



**PROGRAMMATIC AGREEMENT
AMONG THE UNITED STATES ARMY CORPS OF ENGINEERS,
THE LOUISIANA STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE NATIONAL ECOSYSTEM RESTORATION COMPONENT OF THE
SOUTHWEST COASTAL LOUISIANA STUDY**

WHEREAS, historically, the low elevation and proximity of the Calcasieu, Cameron and Vermilion Parishes to the Gulf of Mexico puts these southwest coastal Louisiana communities at risk of damages from storm surge flooding and coastal erosion; and

WHEREAS, the U.S. Congress through separate reciprocal authorizations, authorized the investigation of alternatives to: (1) provide hurricane and storm damage risk reduction measures; and (2) significantly restore environmental conditions that existed prior to the large scale alteration of the natural ecosystem in this three (3) parish area. This study, hereafter referred to as the Southwest Coastal Louisiana Study (SWC Study), focuses on a 4,700 square mile study area located in Calcasieu, Cameron, and Vermilion Parishes (the Study Area); and

WHEREAS, the Louisiana Coastal Protection and Restoration Authority Board (CPRAB) is the non-federal sponsor for SWC Study; and

WHEREAS, the ecosystem restoration component of the SWC Study, referred to as the National Ecosystem Restoration (NER) plan (NER Plan), is the subject of this Programmatic Agreement (PA or this Agreement), and the hurricane and storm damage risk reduction component of the SWC Study, referred to as the National Economic Development (NED) component, is the subject of a separate programmatic agreement; and

WHEREAS, the NER component of the SWC Study was recommended in the 2005 Chief's Report for the Louisiana Coastal Area (LCA) Ecosystem Restoration Program, which was authorized in Title VII of the Water Resources Development Act (WRDA) of 2007.

SEC. 7003, LOUISIANA COASTAL AREA.

- (a) **IN GENERAL.** – The Secretary may carry out a program for ecosystem restoration, Louisiana Coastal Area, Louisiana, substantially in accordance with the report of the Chief of Engineers, dated January 31, 2005.

Additional guidance is identified in Title V of WRDA 2007, SEC. 5007. EXPEDITED COMPLETION OF REPORTS AND CONSTRUCTION FOR CERTAIN PROJECTS. Guidance provided by the Director of Civil Works on December 19, 2008, states, "the coastal restoration components proposed as part of the LCA Chenier Plain study will be evaluated as part of the Southwest Coastal Louisiana feasibility study"; and



WHEREAS, the NER Plan comprises ecosystem restoration features that will be recommended for construction and ecosystem restoration features that will be recommended for additional study. Those recommended for construction are nine marsh restoration measures, five shoreline protection measures, and 35 chenier reforestation locations, and those recommended for additional study are two hydrologic and salinity control measures. Fact sheets prepared by CPRAB for the ecosystem restoration features are provided in Appendix A; and

WHEREAS, pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), the U.S. Army Corps of Engineers (USACE) has determined that implementation of the NER Plan will result in Undertakings that have the potential to cause effects on properties listed in or eligible for listing in the National Register of Historic Places (NRHP) and properties that have religious and cultural significance for federally-recognized Indian Tribes as defined in 36 CFR § 800.16(m) (Tribes) (collectively, "historic properties" as defined in 36 CFR § 800.16(l)(1)); and

WHEREAS, an Undertaking, as defined in 36 CFR § 800.16(y) may include any one of the ecosystem restoration features recommended for construction and any related project activities that have the potential to cause effects on historic properties, as identified in Appendix A; and

WHEREAS, each Undertaking with its respective area of potential effects (APE) will be treated separately for the purposes of Section 106 consultation; and

WHEREAS, USACE has elected to fulfill its Section 106 obligations through execution and implementation of a programmatic agreement as provided for in 36 CFR § 800.14(b); and

WHEREAS, USACE has notified the Advisory Council on Historic Preservation (ACHP) of the potential for the Undertakings to affect historic properties and that a programmatic agreement will be prepared, and the ACHP has chosen to participate in consultation to develop this Agreement; and

WHEREAS, USACE has consulted with the Louisiana State Historic Preservation Officer (SHPO), Tribes, Tribal Historic Preservation Officers (THPOs), ACHP, CPRAB, and other appropriate consulting parties in developing this Agreement in order to define efficient and cost effective processes for taking into consideration the effects of the Undertakings upon historic properties; and

WHEREAS, USACE acknowledges Tribes as sovereign nations which have a unique government-to-government relationship with the federal government and its agencies; USACE further acknowledges its Trust Responsibility to those Tribes; and

WHEREAS, USACE has made a reasonable and good faith effort to identify any Tribes that may attach religious and cultural significance to historic properties that may be affected by the Undertakings; and



WHEREAS, USACE has invited the Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, Quapaw Tribe of Oklahoma, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and the Tunica-Biloxi Tribe of Louisiana, Tribes for which historic properties located in the State of Louisiana have religious and cultural significance, to consult in the development of this Agreement; and

WHEREAS, the Quapaw Tribe of Oklahoma and the Muscogee (Creek) Nation have determined that the Undertakings are not within their geographic area of interest and have chosen not to participate in the development of this Agreement; and

WHEREAS, the Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Seminole Nation of Oklahoma, and Seminole Tribe of Florida have chosen to participate in the development of this Agreement and have been invited to sign this Agreement as an Invited Signatory Party; and

WHEREAS, the Tunica-Biloxi Tribe of Louisiana and those Tribes that have not participated in the development of this Agreement but that may choose to participate in Section 106 consultation will be invited to sign this Agreement as a Concurring Party; and

WHEREAS, CPRAB has participated in the development of this Agreement and has been invited to sign this Agreement as an Invited Signatory Party; and

WHEREAS, USACE has taken appropriate measures to identify other consulting parties that may be interested in Section 106 consultation, by notification to the Parish Presidents of Calcasieu, Cameron, and Vermilion parishes, as well as the Atakapa-Ishak Nation. Consulting parties that participate in Section 106 consultation may be invited to sign this Agreement as a Concurring Party; and

WHEREAS, USACE has involved the public through the National Environmental Policy Act (NEPA) process, which affords all persons, organizations, and government agencies the right to review and comment on proposed major federal actions that are evaluated by a NEPA document. Public meetings to collect input during planning were held in March 2009, July 2009, February 2010, March 2010, July 2010, October 2011, April 2012, July 2013, and August 2013. On December 13, 2013, USACE released an Integrated Draft Feasibility Report and Environmental Impact Statement for the SWC Study (Draft Report) to the public for a review period of forty-five (45) calendar days, which was extended an additional fourteen (14) days until February 13, 2014. This document included a general discussion of cultural resources within the study area. Public hearings of the Draft Report were held on January 7 and 9, 2014. On March 20, 2015, USACE released a Revised Integrated Draft Feasibility Report and Environmental Impact Statement for the SWC Study (Revised Draft Report) to the public for a review period of forty-five (45) calendar days. Public hearings of the Revised Draft Report were



held on April 14, 15, and 16, 2015. USACE has also notified the public of the development of this Agreement with newspaper announcements in the *Abbeville Meridional*, *American Press*, and *The Advocate*; and

NOW, THEREFORE, USACE, SHPO, and ACHP agree that the Undertakings shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertakings on historic properties.

STIPULATIONS

To the extent of its legal authority, USACE shall ensure that the following terms are carried out:

- I. Consultation and Coordination
 - A. Following Congressional authorization and appropriation to implement the entirety or some portion of the NER Plan, USACE shall meet with Signatory and Invited Signatory parties to review this Agreement.
 - B. USACE shall make a reasonable and good faith effort to identify any additional Tribes that might attach religious and cultural significance to historic properties in the APE for an Undertaking and invite those Tribes to participate in Section 106 consultation.
 - C. USACE shall consult with Tribes that are Invited Signatory Parties and Concurring Parties, as well as any other Tribe that requests in writing to be a consulting party (collectively, "Consulting Tribes").
 - D. USACE shall provide Consulting Tribes with an executed copy of this Agreement and with copies of all plans, determinations, and findings provided to the SHPO.
 - E. Individuals or organizations with a demonstrated interest in an Undertaking may be invited to participate as consulting parties due to the nature of their legal or economic relations to an Undertaking or affected properties, or their concern with an Undertaking's effects on historic properties, if agreed upon by the USACE and SHPO.
 - F. To the extent permitted under applicable federal laws and regulations, for example, Section 304 of the NHPA (54 U.S.C. § 307103), 36 CFR § 800.11(c), and Section 9 of the Archaeological Resources Protection Act of 1979 (ARPA) (16 U.S.C. 470aa-mm; Public Law 96-95 and amendments to it), USACE will make available to the public documents developed pursuant to this Agreement.
 - G. Electronic mail (email) will serve as the official correspondence method for all communications regarding this Agreement and its provisions. See Appendix B for a list of contacts and email addresses. Contact information in Appendix B may be updated as needed without an amendment to this Agreement. It is the responsibility of each signatory to immediately inform the USACE of any change



in name, address, email address, or phone number of any point-of-contact. USACE will forward this information to all signatories by email. Failure of any party to this Agreement to notify the USACE of any change to a point-of-contact's information shall not be grounds for asserting that notice of a proposed action was not received.

H. All standard response timeframes established by 36 CFR Part 800 will apply to this Agreement, unless an alternative response timeframe is agreed to by the SHPO and Consulting Tribes on a case-by-case basis.

I. All time designations will be in calendar days. If any party does not comment within the agreed upon timeframes, USACE may assume that party's concurrence with the USACE's determination, and will notify all consulting parties of the action and proceed in accordance with this Agreement.

II. Standards

A. All work carried out pursuant to this Agreement shall be done by or under the direct supervision of historic preservation professionals who meet the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61).

B. All work carried out pursuant to this Agreement shall meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68).

C. All historic standing structures surveys carried out pursuant to this Agreement shall be completed in accordance with the Louisiana Historic Resource Inventory Guidelines of the Louisiana Division of Historic Preservation.

D. All archaeological investigations carried out pursuant to this Agreement shall be completed in accordance with the Field Standards and documented in accordance with the Report Standards of the Louisiana Division of Archaeology.

III. Identification and Evaluation of Historic Properties

A. USACE, in consultation with the SHPO and Consulting Tribes, will determine and document the geographic areas within which an Undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist, hereafter referred to as an APE. USACE will conduct a reasonable and good faith effort to identify historic properties located within an APE.

1. USACE shall seek input from consulting parties, as appropriate, concerning:

a. the historic significance of structures that have not previously been evaluated for eligibility for listing in the National Register, either individually or as contributing to a historic district;

b. the potential for archaeological properties to be present; and



- c. the potential for properties of religious and cultural significance to Tribes to be present.

Any comments provided to the USACE shall be considered by the USACE and SHPO in evaluating National Register eligibility.

2. USACE shall complete cultural resources investigations following the recommendations provided in the *Cultural Resources Assessment and Research Design for the Southwest Coastal Louisiana Project, Calcasieu, Cameron, and Vermilion Parishes, Louisiana*, which shall be finalized in coordination with SHPO and consulting tribes prior to commencement of activities hereunder. For any portion of an APE not considered in the *Cultural Resources Assessment and Research Design*, the level of survey to be conducted and the survey methodology will be developed in consultation with the SHPO and Consulting Tribes. All surveys will be completed in a manner that meets the standards for Reconnaissance or Phase I Investigations as defined by the Louisiana Division of Archaeology. These efforts will be documented in reports that USACE will submit to SHPO and Consulting Tribes for review and comment. USACE will ensure that the comments provided by the SHPO and Consulting Tribes are addressed and incorporated into a final report.
 3. USACE will consult with the SHPO on the eligibility of all structures located in an APE, and with the SHPO and Consulting Tribes on the eligibility of all archaeological properties and properties of religious and cultural significance to Tribes located in an APE. For properties already eligible or listed in the National Register, USACE will consult to determine whether or not the property retains the characteristics that make it eligible for listing in the National Register.
- B. Consultation under this Agreement for an Undertaking will be concluded for USACE findings of *no historic properties affected* when the SHPO and Consulting Tribes have been provided the opportunity to review and comment on the documentation specified in 36 CFR § 800.11(d) and either concur or do not object within the agreed upon response timeframe. USACE shall notify any additional consulting parties and make documentation of the finding available to the public. This shall complete the USACE's Section 106 responsibilities for these properties.
- C. In the event of disagreement between the USACE, SHPO, and/or Consulting Tribes concerning the eligibility of a property for listing in the NRHP under 36 CFR Part 60, USACE shall request a formal determination of eligibility for that property from the Keeper of the NRHP (Keeper). The determination by the Keeper will serve as the final decision regarding the NRHP eligibility of the property.



IV. Historic Properties Affected

- A. USACE shall notify the SHPO, Consulting Tribes, and other consulting parties, as appropriate, that an Undertaking may affect historic properties and shall continue consultation with the aforementioned parties to apply the criteria of adverse effects to historic properties within an APE in accordance with 36 CFR § 800.5.
- B. Consultation under this Agreement will be concluded for USACE findings of *no adverse effect* when the SHPO and Consulting Tribes have been provided the opportunity to review and comment on the documentation specified in 36 CFR § 800.11(e) and either concur or do not object within the agreed upon response timeframe.
- C. In the event of an objection by the SHPO and/or Consulting Tribes regarding a USACE finding of *no adverse effect*, USACE shall seek to resolve such objection through consultation in accordance with procedures outlined in Stipulation IX.

V. Resolution of Adverse Effects

- A. USACE shall continue consultation with the SHPO, Consulting Tribes, and other consulting parties, as appropriate, pursuant to 36 CFR § 800.6 to avoid, minimize, or mitigate adverse effects to historic properties.
- B. USACE shall notify the ACHP and other consulting parties, as appropriate, and determine their participation. The notification of the adverse effect shall include the documentation specified in 36 CFR § 800.11(e), subject to the confidentiality provisions of 36 CFR § 800.11(c), and such other documentation as may be developed during the consultation to resolve adverse effects, including views and summaries of the consulting parties. If the project activity will affect a National Historic Landmark, USACE shall also notify the National Park Service (NPS).
- C. Once the USACE, SHPO, Consulting Tribes, and ACHP, should they decide to participate in consultation, agree on how the adverse effects will be resolved, they shall execute and implement a Memorandum of Agreement (MOA) pursuant to 36 CFR § 800.6(c). USACE shall submit a copy of the executed MOA, along with the documentation specified in 36 CFR § 800.11(f), to the ACHP prior to approving an Undertaking. A copy of the executed MOA shall be forwarded to all Signatory, Invited Signatory, and Concurring Parties.
- D. Should the USACE, SHPO, and Consulting Tribes disagree on how the adverse effects will be resolved, USACE shall seek to resolve such objection through consultation in accordance with procedures outlined in Stipulation IX.

VI. Curation

- A. USACE shall ensure that all collections resulting from identification and evaluation surveys, data recovery operations, or other studies pursuant to this



Agreement are maintained in accordance with 36 CFR Part 79 as long as there is a USACE interest in the collections, minimally until the analysis is complete and the final report is accepted by the Division of Archaeology. USACE shall be responsible for costs to process, catalog, and accession all collections in accordance with 36 CFR Part 79.

- B. USACE shall be responsible for consulting with landowners regarding the curation of collections resulting from identification and evaluation surveys, data recovery operations, or other studies pursuant to this Agreement. USACE shall encourage non-federal landowners to donate collections to the Division of Archaeology or other facility meeting the standards of 36 CFR Part 79 for long-term curation. USACE shall be responsible for negotiating the return of collections to non-federal landowners should they elect not to donate the collections, including any costs required to return the collections.
 - C. USACE shall be responsible for costs to prepare federally-owned collections, including the associated records of non-federal collections, and any non-federal collections donated to the Division of Archaeology or other facility agreed upon by SHPO and Consulting Tribes for long-term curation. Collections to be deposited with a curation facility shall be prepared in accordance with the standards of that facility.
 - D. USACE shall be responsible for costs to curate federally-owned collections, including the associated records of non-federal collections, long-term in accordance with 36 CFR Part 79 and the curation agreement in effect with the facility accepting the collections. For non-federal collections donated to the Division of Archaeology or other facility, USACE shall be responsible for the one-time accession fee assessed by the Division of Archaeology or other facility meeting the standards of 36 CFR Part 79.
- VII. Discovery of Human Remains
- A. The following language shall be included in construction plans and specifications:

When human remains, suspected human remains, or indications of a burial are discovered during the execution of an Undertaking, the individual(s) who made the discovery shall immediately notify the local law enforcement, coroner/medical examiner, and the USACE, New Orleans District, and make a reasonable effort to protect the remains from any harm. The human remains shall not be touched, moved, or further disturbed. All activities shall cease within a minimum of 50 feet from the area of the find (50-foot radius "no work" buffer) until authorized by the USACE.
 - B. Upon notification, USACE shall ensure that the area of the find is secured and protected from further disturbance. USACE shall ensure that the following procedures will be followed if the area of the find is located on private or state land, or federal or tribal land.



1. Private or State Land. In the event that the area of the find is located on private or state land, the procedures established by the Louisiana Unmarked Human Burial Sites Preservation Act (La. R.S. 8:671-681) are applicable.
 - a. USACE shall immediately notify the State Archaeologist of the discovery.
 - b. USACE shall continue consultation with SHPO, Consulting Tribes, and additional consulting parties, as appropriate.
 - c. USACE shall ensure that no remains will be removed from the area of the find until jurisdiction is established and the appropriate permits are obtained from the Division of Archaeology.
 2. Federal or Tribal Land. In the event that the area of the find is located on federal or tribal land, the procedures established by the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. § 3001-3013, 18 U.S.C. § 1170) and the implementing regulations (43 CFR Part 10), and ARPA and the implementing regulations (43 CFR Part 7) are applicable.
 - a. USACE shall immediately notify the responsible federal agency official or Indian tribe official with jurisdiction over the remains.
 - b. USACE shall continue consultation with SHPO, Consulting Tribes, and additional consulting parties, as appropriate.
 - c. If the USACE is the responsible federal agency, then the USACE shall ensure that the procedures established by NAGPRA and ARPA are followed, as applicable.
- C. All Signatory and Invited Signatory Parties agree that the most appropriate treatment, if feasible, is to protect human remains and permanently preserve burial sites in situ.
- VIII. Unanticipated Discoveries and Effects
- A. The following language shall be included in construction plans and specifications:

When a previously unidentified cultural resource, including but not limited to archeological sites, standing structures, and properties of traditional religious and cultural significance to Tribes, is discovered during the execution of an Undertaking, the individual(s) who made the discovery shall immediately secure the vicinity, make a reasonable effort to avoid or minimize harm to the resource, and notify the USACE, New Orleans District. All activities shall cease within a minimum of 50 feet from the inadvertent discovery (50-foot radius "no work" buffer) until authorized by the USACE.



- B. Upon notification, USACE shall implement any additional reasonable measures necessary to avoid or minimize effects to the resource. Any previously unidentified cultural resource will be treated as though it is eligible for the NRHP until such other determination may be made.
 - C. USACE shall immediately notify the SHPO, Consulting Tribes, and additional consulting parties, as appropriate, within 48 hours of the finding and request consultation to resolve potential adverse effects.
 - 1. If consulting parties agree that the cultural resource is not eligible for the NRHP, then the suspension of work will end.
 - 2. If consulting parties agree that the cultural resource is eligible for the NRHP, then the suspension of work will continue, and the USACE, in consultation with the SHPO and Consulting Tribes, will determine actions to avoid, minimize, or mitigate adverse effects to the historic property and will ensure that the appropriate actions are carried out.
 - D. In the event that the USACE is notified of the discovery of previously unidentified archaeological resources on federal or tribal land during the execution of an Undertaking, USACE shall ensure that procedures established by ARPA and implementing regulations (43 CFR Part 7) will be followed.
 - E. In the event that the USACE is notified of the discovery of funerary objects, sacred objects, or objects of cultural patrimony on federal or tribal land during the execution of an Undertaking, USACE shall ensure that procedures outlined in Stipulation VII will be followed.
 - F. In the event that effects to historic properties are identified following the completion of a project activity, any party may provide the USACE with evidence of such effects for a period of twelve (12) months from the completion of the affecting work. USACE shall review the evidence and consult with the SHPO, Consulting Tribes, and ACHP, as appropriate, to resolve any adverse effects.
 - G. If the USACE, SHPO, and Consulting Tribes cannot agree on an appropriate course of action to address an unanticipated discovery or effects situation, then the USACE shall initiate the dispute resolution process set forth in Stipulation IX.
- IX. Dispute Resolution
- A. Except for the resolution of eligibility issues as set forth in Stipulation III, should any Signatory, Invited Signatory, or Concurring Party object in writing to the USACE at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, USACE shall consult with such party to resolve the objection.



- B. If the USACE determines that such objection cannot be resolved, the USACE shall forward all documentation relevant to the dispute, including USACE's proposed resolution, to the ACHP.
 - C. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories, Invited Signatories, and Concurring Parties, and provide them with a copy of this written response. USACE will then proceed according to its final decision.
 - D. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories, Invited Signatories, and Concurring Parties, and provide them and the ACHP with a copy of such written response. USACE will then proceed according to its final decision.
 - E. USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.
- X. Administration, Effect, and Duration
- A. This Agreement shall take effect upon execution by the ACHP, USACE, and SHPO. USACE shall provide Signatory, Invited Signatory, and Concurring Parties with a complete copy of this Agreement including all executed signature pages.
 - B. This Agreement will remain in effect for twenty (20) years from the date of execution unless the Signatory Parties agree that there is a need to extend the term. Prior to the end of the twenty-year term, USACE will consult with ACHP and SHPO to determine interest in extending this Agreement. This Agreement may be extended by written agreement negotiated by Signatory Parties and by amending this Agreement consistent with Stipulation XII.
 - C. Each year following the execution of this Agreement until it expires or is terminated, USACE shall provide all Signatory, Invited Signatory, and Concurring Parties a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in USACE's efforts to carry out the terms of this Agreement.
 - D. Following authorization and appropriation, USACE shall coordinate a meeting of the Signatory, Invited Signatory, and Concurring Parties to be held annually on a mutually agreed upon date to evaluate the effectiveness of this Agreement and discuss activities carried out pursuant to this Agreement during the preceding



year and activities scheduled for the upcoming year. After five (5) years, USACE will initiate the discussion of cumulative effects as provided for in Stipulation XI. The meeting shall be held in a location agreed upon by consensus of the Signatory Parties.

XI. Comprehensive Review

- A. Upon completion of the implementation of the NER Plan, USACE will analyze the Undertakings holistically to assess cumulative effects upon historic properties. Cumulative effects are those which result from the incremental impacts of an undertaking when added to other past, present, and reasonably foreseeable future federal or non-federal undertakings.
- B. USACE, in consultation with the Signatory and Invited Signatory Parties, will identify and implement measures, as appropriate, to mitigate adverse cumulative effects on historic properties. If there is a disagreement that cannot be resolved, USACE shall initiate the dispute resolution process set forth in Stipulation IX.
- C. Agreed upon measures to resolve adverse cumulative effects will be documented in a report that meets the standards of the Louisiana Division of Archaeology and will be submitted to SHPO and Consulting Tribes for review and comment. The final cumulative report will be distributed to the Signatory, Invited Signatory, and Concurring Parties.

XII. Amendment and Termination

- A. Notwithstanding any provision of this Agreement, Signatory and Invited Signatory Parties may request that it be amended, whereupon these parties will consult to consider such amendment. USACE shall facilitate such consultation within thirty (30) days of receipt of the written request. Where no consensus can be reached, this Agreement will not be amended. Any amendment to this Agreement will be in writing and will be signed by Signatory and Invited Signatory Parties, and shall be effective on the date of the final signature.
- B. Any Invited Signatory Party may withdraw its participation in this Agreement by providing thirty (30) days advance written notification to all other Signatory and Invited Signatory Parties. In the event of withdrawal by an Invited Signatory Party, this Agreement will remain in effect for the other Signatory and Invited Signatory Parties.
- C. This Agreement may be terminated in accordance with 36 CFR Part 800, provided that the Signatory and Invited Signatory Parties consult during the period prior to termination to seek agreement on amendments or other actions that could avoid termination. Any Signatory Party requesting termination of this Agreement shall provide thirty (30) days advance written notification to all other Signatory and Invited Signatory Parties.



D. Termination of this Agreement does not relieve USACE of any remaining obligations it may have, as of the date of termination, under 36 CFR Part 800.

Execution of this Agreement by the ACHP, USACE, and SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the NER Plan upon historic properties and has afforded the ACHP an opportunity to comment.



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

United States Army Corps of Engineers

By: *Richard L. Hansen*
Richard L. Hansen
Colonel, U.S. Army
District Commander

Date: 22 Feb 2016



Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
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The Advisory Council on Historic Preservation
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National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study

Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Louisiana State Historic Preservation Officer

By: Phil Boggan
Phil Boggan
Louisiana State Historic Preservation Officer
Louisiana Office of Cultural Development

Date: 2-19-16



**Programmatic Agreement
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Execution of this Agreement by the ACHP, USACE, and LA SHPO and implementation of its terms, evidences that the USACE has taken into account the effects of the SWC Study upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Advisory Council on Historic Preservation

By: 
John M. Fowler
Executive Director
Advisory Council on Historic Preservation

Date: 2/24/16



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and
The Advisory Council on Historic Preservation
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Southwest Coastal Louisiana Study**

Invited Signatory Party:

Chitimacha Tribe of Louisiana

By: _____
O'Neil J. Darden, Jr., Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Choctaw Nation of Oklahoma

By: _____
Gary Batton, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
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and
The Advisory Council on Historic Preservation
regarding the
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Southwest Coastal Louisiana Study**

Invited Signatory Party:

Coushatta Tribe of Louisiana

By: _____
Kevin Sickey, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Mississippi Band of Choctaw Indians

By: _____
Phylliss J. Anderson, Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
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and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Alabama-Coushatta Tribe of Texas

By: _____
Carlos Bullock, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Caddo Nation of Oklahoma

By: _____
Tamara Francis-Fourkiller, Chairman/THPO

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Jena Band of the Choctaw Indians

By: _____
B. Cheryl Smith, Principal Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Seminole Nation of Oklahoma

By: _____
Leonard M. Harjo, Principal Chief

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
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and
The Advisory Council on Historic Preservation
regarding the
National Ecosystem Restoration Component of the
Southwest Coastal Louisiana Study**

Invited Signatory Party:

Seminole Tribe of Florida

By: _____
James Billie, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
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and
The Advisory Council on Historic Preservation
regarding the
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Southwest Coastal Louisiana Study**

Concurring Party:

Tunica-Biloxi Tribe of Louisiana

By: _____
Joey Barbry, Chairman

Date: _____



**Programmatic Agreement
among
The United States Army Corps of Engineers,
Louisiana State Historic Preservation Officer,
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The Advisory Council on Historic Preservation
regarding the
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Southwest Coastal Louisiana Study**

Concurring Party:

Coastal Protection and Restoration Authority Board

By: _____
Jerome Zeringue, Chair

Date: _____



APPENDIX A: ECOSYSTEM RESTORATION FEATURE FACT SHEETS

The Ecosystem Restoration Feature Fact Sheets in Appendix A of this Agreement are the same as those found in Appendix K of the Integrated Final Feasibility Report and Environmental Impact Statement. Appendix A fact sheets can be provided upon request.



APPENDIX B: CONTACT INFORMATION

U.S. Army Corps of Engineers, New Orleans District

Richard L. Hansen
Colonel, U.S. Army
District Commander
P.O. Box 60267
New Orleans, LA 70160
(504) 862-2077

Trent Stockton – Project Archaeologist/Tribal Liaison

U.S. Army Corps of Engineers, RPEDS
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New Orleans, LA 70160
(504) 862-2550
trent.c.stockton@usace.army.mil

Advisory Council on Historic Preservation

John Fowler, Executive Director
1100 Pennsylvania Avenue NW, Suite 803
Washington, DC 20004
(202) 606-8503
achp@achp.gov

State Historic Preservation Officer

Phil Boggan, SHPO
Department of Culture, Recreation and Tourism
Louisiana State Historic Preservation Office
1051 N. Third Street, Room 319
Baton Rouge, LA 70802
(225) 342-8170
section106@crt.la.gov



Chitimacha Tribe of Louisiana

John Paul Darden, Chairman
Chitimacha Tribe of Louisiana
P.O. Box 661
Charenton, LA 70523

Kimberly S. Walden
Cultural Director/Tribal Historic Preservation Officer
Chitimacha Tribe of Louisiana
P.O. Box 661
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(337) 923-9923
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Choctaw Nation of Oklahoma

Gary Batton, Chief
Attn: Choctaw Nation Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, Oklahoma 74702-1210

Ian Thompson
Director/Tribal Historic Preservation Officer
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Coushatta Tribe of Louisiana

Linda Langley
Tribal Historic Preservation Officer
Heritage Department
Coushatta Tribe of Louisiana
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Michael Tarpley
Deputy Tribal Historic Preservation Officer
Heritage Department
Coushatta Tribe of Louisiana
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Mississippi Band of Choctaw Indians

Phylliss J. Anderson, Chief
Mississippi Band of Choctaw Indians
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Kenneth H. Carleton
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Mississippi Band of Choctaw Indians
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Alabama-Coushatta Tribe of Texas

Carlos Bullock, Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
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Bryant J. Celestine
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
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Caddo Nation of Oklahoma

Brenda Shemayme Edwards, Chairwoman
Caddo Nation of Oklahoma
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Robert Cast
Tribal Historic Preservation Officer
Caddo Nation of Oklahoma
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Jena Band of Choctaw Indians

B. Cheryl Smith, Principal Chief
Jena Band of Choctaw Indians
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Dana Masters
Tribal Historic Preservation Officer
Jena Band of Choctaw Indians
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Seminole Nation of Oklahoma

Leonard M. Harjo, Principal Chief
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Natalie Deere
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Historic Preservation Office
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Seminole Tribe of Florida

James Billie
Chairman
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Paul Backhouse
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Clewiston, FL 33440
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paulbackhouse@semtribe.com

Tunica-Biloxi Tribe of Louisiana

Joey Barbry, Chairman
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Earl J. Barbry, Jr.
Cultural Director
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351
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earljj@tunica.org

Coastal Protection and Restoration Authority Board

Jerome Zeringue, Chair
P.O. Box 44027
Baton Rouge, LA 70804

Elizabeth Davoli
Coastal Resources Scientist Manager
Environmental Section, Planning & Research Division
Coastal Protection and Restoration Authority
450 Laurel Street
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Elizabeth.Davoli@la.gov



Correspondence



Preserving America's Heritage

Milford Wayne Donaldson
Chairman

Clement A. Price
Deputy Chairman

John M. Fowler
Executive Director

March 13, 2014

Lieutenant General Thomas P. Bostick
Commanding General
U.S. Army Corps of Engineers
441 G. Street, NW
Washington, DC 20314-1000

REF: Implementing hurricane and storm damage risk reduction measures in southwest coastal Louisiana

Dear Lieutenant General Bostick:

The Advisory Council on Historic Preservation (ACHP) has been invited by the New Orleans District of the Corps of Engineers to assist in the development of a Programmatic Agreement (PA) to help ensure that historic properties are fully considered in the development and implementation of the measures to reduce the risk of severe storm damage to life and property for coastal portions of southwestern Louisiana. Pursuant to the Criteria for Council Involvement in Reviewing Individual Section 106 Cases (Appendix A to our regulations, 36 CFR Part 800) we believe the criteria are met for our participation in this undertaking. Actions that may include residential structure elevation and flood proofing, marsh restoration, shoreline protection, reforestation, and preservation of the historic Sabine oyster reef all have the potential to have substantial impacts to important historic properties and may involve important questions of policy and interpretation. Accordingly, the ACHP will participate in consultation with the New Orleans District on this undertaking.

By copy of this letter we are also notifying Ms. Joan Exnicios, Chief of the New Orleans District's Environmental Planning Branch, of our decision to participate in consultation.

Our participation will be handled by Dr. Tom McCulloch, who can be reached at 202-606-8554 or at tmcculloch@achp.gov. We look forward to working with the Corps on this important project.

Sincerely,

John M. Fowler
Executive Director

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Carlos Bullock, Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, TX 77351

Dear Chairman Bullock:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

The CEMVN has determined that implementation of the selected TSP for each study has the potential to cause effects on historic properties and proposes to develop two PAs to establish Section 106 consultation procedures tailored to the accelerated schedules required by the USACE SMART Feasibility Study Process. The undertakings have been summarized in previous Section 106 consultation correspondence and are detailed in the draft Integrated Feasibility Report and Programmatic Environmental Impact Statement for the SWC LA study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx> and the draft Integrated Feasibility Report and Environmental Impact Statement for the WSLP study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/WestShoreLakePontchartrain>.

A teleconference has been scheduled for March 10, 2014, and the agenda and call-in information will be provided by email. We request that you inform us of your desire to participate as a consulting party in these PAs. Given the accelerated schedules, CEMVN requests that consultation for the development of the PAs utilize a combination of email and teleconferences.

As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Mr. Bryant J. Celestine, Historic Preservation Officer, Alabama Coushatta Tribe of Texas, celestine.bryant@actribe.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Brenda Shemayne Edwards, Chairwoman
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Dear Chairwoman Edwards:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Mr. Robert Cast, Tribal Historic Preservation Officer, Caddo Nation of Oklahoma, rcast@caddonation.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

Regional Planning and
Environment Division, South

John Paul Darden, Chairman
Chitimacha Tribe of Louisiana
P.O. Box 661
Charenton, LA 70523

Dear Chairman Darden:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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A teleconference has been scheduled for March 10, 2014, and the agenda and call-in information will be provided by email. We request that you inform us of your desire to participate as a consulting party in these PAs. Given the accelerated schedules, CEMVN requests that consultation for the development of the PAs utilize a combination of email and teleconferences.

As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Mrs. Kimberly Walden, M. Ed., Cultural Director/Tribal Historic Preservation Officer, Chitimacha Tribe of Louisiana, kswalden@chitimacha.gov.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702-1210

Dear Chief Pyle:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

The CEMVN has determined that implementation of the selected TSP for each study has the potential to cause effects on historic properties and proposes to develop two PAs to establish Section 106 consultation procedures tailored to the accelerated schedules required by the USACE SMART Feasibility Study Process. The undertakings have been summarized in previous Section 106 consultation correspondence and are detailed in the draft Integrated Feasibility Report and Programmatic Environmental Impact Statement for the SWC LA study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx> and the draft Integrated Feasibility Report and Environmental Impact Statement for the WSLP study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/WestShoreLakePontchartrain>.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Dr. Ian Thompson, Director/Tribal Historic Preservation Officer, Choctaw Nation of Oklahoma, ithompson@choctawnation.com.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Kevin Sickey, Chief
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Dear Chief Sickey:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Dr. Linda Langley, Tribal Historic Preservation Officer, Coushatta Tribe of Louisiana, llangley@mcneese.edu, and Mr. Michael Tarpley, Deputy Tribal Historic Preservation Officer, Coushatta Tribe of Louisiana, kokua.aina57@gmail.com.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

B. Cheryl Smith, Principal Chief
Jena Band of Choctaw Indians
P.O. Box 14
Jena, LA 71342

Dear Principal Chief Smith:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Ms. Dana Masters, Tribal Historic Preservation Officer, Jena Band of Choctaw Indians, jbc.thpo106@aol.com, and Ms. Lillie McCormick, Environmental Director, Jena Band of Choctaw Indians, lmccormickjbc@centurytel.net.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Phylliss J. Anderson, Chief
Mississippi Band of Choctaw Indians
P.O. Box 6257
Choctaw, MS 39350

Dear Chief Anderson:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Mr. Kenneth H. Carleton, Tribal Historic Preservation Officer/ Archeologist, Mississippi Band of Choctaw Indians, kcarleton@choctaw.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 80267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Leonard M. Harjo, Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Principal Chief Harjo:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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As always, should you have any questions or concerns about the proposed action, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. An electronic copy of this letter and all future correspondence pertaining to the development of the PAs will be provided electronically to Ms. Natalie Harjo, Tribal Historic Preservation Officer, Seminole Nation of Oklahoma, harjo.n@sno-nsn.gov.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

James Billie, Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Billie:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

MARCH 7, 2014

REPLY TO
ATTENTION OF

Regional Planning and
Environment Division, South

Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Dear Chairman Barbry:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop Programmatic Agreements (PAs) for two studies, the Southwest Coastal Louisiana (SWC LA) study and the West Shore Lake Pontchartrain (WSLP) study, in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite you to participate in the consultation for the development of these two separate PAs.

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Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

February 27, 2014

REPLY TO
ATTENTION OF:

Regional Planning and
Environment Division, South
Environmental Planning Branch

Reid Nelson, Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
Old Post Office
1100 Pennsylvania Ave., NW, Suite 809
Washington, D.C. 20004

Dear Mr. Nelson:

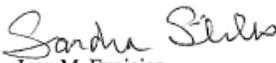
The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop a Programmatic Agreement (PA) for the Southwest Coastal Louisiana (SWC LA) study in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite the Advisory Council on Historic Preservation to participate in this consultation.

The CEMVN has determined that implementation of the selected TSP has the potential to cause effects on historic properties and proposes to develop a PA to establish Section 106 consultation procedures tailored to the accelerated schedule required by the USACE SMART Feasibility Study Process. Section 106 consultation was initiated with the Louisiana State Historic Preservation Office and federally-recognized Tribes on November 27, 2013, and the undertaking is detailed in the draft Integrated Feasibility Report and Programmatic Environmental Impact Statement for the SWC LA study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>.

The CEMVN has completed a review of existing information on historic properties within the study area, and a copy of the draft Cultural Resources Assessment and Research Design is being provided electronically for review. A teleconference has been scheduled for March 6, 2014, and the agenda and call-in information will be provided by email.

Should you have any questions or concerns, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter, a copy of the letter to SHPO dated November 27, 2013, and the draft Cultural Resources Assessment and Research Design will be submitted to Tom McCulloch, tmcculloch@achp.gov.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

February 27, 2014

REPLY TO
ATTENTION OF:

Regional Planning and
Environment Division, South
Environmental Planning Branch

Ms. Pam Breaux
State Historic Preservation Officer
Department of Culture, Recreation, & Tourism
P.O. Box 44247
Baton Rouge, LA 70804

Dear Ms. Breaux:

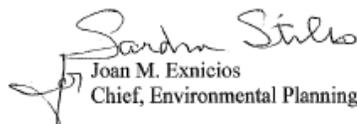
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The CEMVN has determined that implementation of the selected TSP has the potential to cause effects on historic properties and proposes to develop a PA to establish Section 106 consultation procedures tailored to the accelerated schedule required by the USACE SMART Feasibility Study Process. The undertaking is summarized in our letter dated November 27, 2013, and is detailed in the draft Integrated Feasibility Report and Programmatic Environmental Impact Statement for the SWC LA study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>.

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Should you have any questions or concerns, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter and the draft Cultural Resources Assessment and Research Design will be submitted to Section106@crt.la.gov.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

February 27, 2014

REPLY TO
ATTENTION OF:

Regional Planning and
Environment Division, South
Environmental Planning Branch

Mr. Jerome Zeringue, Chairman
Coastal Protection and Restoration
Authority Board of Louisiana
P.O. Box 94004
Office of Governor-Coastal, 4th Floor
Baton Rouge, LA 70804

Dear Mr. Zeringue:

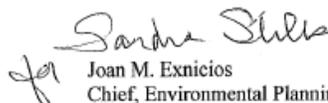
The United States Army Corps of Engineers, New Orleans District (CEMVN), is continuing consultation to develop a Programmatic Agreement (PA) for the Southwest Coastal Louisiana (SWC LA) study in accordance with 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act. We invite the Coastal Protection and Restoration Authority Board of Louisiana to participate in this consultation.

The CEMVN has determined that implementation of the selected TSP has the potential to cause effects on historic properties and proposes to develop a PA to establish Section 106 consultation procedures tailored to the accelerated schedule required by the USACE SMART Feasibility Study Process. The proposed undertaking is detailed in the draft Integrated Feasibility Report and Programmatic Environmental Impact Statement for the SWC LA study, available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>.

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Should you have any questions or concerns, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter and the draft Cultural Resources Assessment and Research Design will be submitted to Ms. Elizabeth Jarrell, elizabeth.jarrell@la.gov and Ms. Elizabeth Davoli, elizabeth.davoli@la.gov.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch



JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

CHARLES R. DAVIS
DEPUTY SECRETARY

PAM BREAUX
ASSISTANT SECRETARY

February 18, 2014

Ms. Joan M. Exnicios
Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Southwest Coastal Louisiana (SWC LA) Study
Calcasieu, Cameron, and Vermilion Parishes, Louisiana

Dear Ms. Exnicios,

This is response to your letter received December 4, 2014, initiating consultation for the above-referenced project. There are numerous known cultural resources located within the proposed Area of Potential Effects (APE) of this project. We look forward to work with your agency with identifying historic properties within un-surveyed areas that might be impacted and avoiding, minimizing, or mitigating impacts to historic properties within the APE.

If you have any questions, please do not hesitate to contact Rachel Watson in the Division of Archaeology at (225) 342-8165 or rwatson@crt.la.gov.

Sincerely,

Pam Breaux
State Historic Preservation Officer

PB:RW:s



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Ms. Pam Breaux
State Historic Preservation Officer
Department of Culture, Recreation and Tourism
Office of Cultural Development
P.O. Box 44247
Baton Rouge, Louisiana 70804

Dear Ms. Breaux:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

The New Orleans District (CEMVN) is preparing a Southwest Coastal Louisiana (SWC LA) Integrated Feasibility Report and Environmental Impact Statement (Integrated Report), which will describe all aspects of the SWC LA study, from its inception through the evolution of the various alternatives, the discussion of potential impacts to applicable natural, socioeconomic and cultural resources, to the decision to recommend a preferred alternative.

The purpose of this letter is to initiate consultation for the SWC LA study, in partial fulfillment of responsibilities under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. The CEMVN offers you the opportunity to review and comment on the potential of the proposed action to significantly affect historic properties.

Study Authority and History of Investigation

The hurricane and storm damage risk reduction purpose of the SWC LA study was authorized on December 7, 2005, by the Committee on Transportation and Infrastructure, U.S. House of Representatives, Resolution Docket 2747, and the ecosystem restoration purpose was recommended for approval in the 2005 USACE Chief's Report for the Louisiana Coastal Area (LCA) Ecosystem Restoration Program that was authorized in the Water Resources Development Act of 2007. The Feasibility Cost Share Agreement was signed with the CPRAB on January 14, 2009. In 2013 the CEMVN was directed to transition the project to SMART planning.



-2-

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Study Area

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Proposed Action

Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing, and the acquisition of qualifying structures. The National Ecosystem Restoration (NER) purpose of SWC LA project is to significantly restore environmental conditions for the Chenier Plain ecosystem. Proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier reforestation program to include the planting of trees on approximately 1,413 acres (please refer to the two enclosed maps of the draft NER TSP). The alternatives will be further developed in the Integrated Report.

Section 106 Consultation

The USACE has determined that the proposed action is an undertaking as defined in 36 CFR § 800.16(y) that has the potential to cause effects on historic properties. This letter initiates formal Section 106 consultation pursuant to 36 CFR § 800.3(c). CEMVN is currently reviewing existing information on historic properties within the study area. Following the preparation of the Integrated Report, CEMVN will schedule a teleconference with consulting parties to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

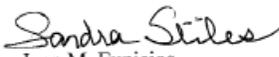


-3-

Your response to this letter, including any information your office may wish to provide at this time concerning the proposed undertaking and its potential to significantly affect historic properties is greatly appreciated. Please also notify us of any other interested party who may wish to participate in this consultation.

As always, should you have any questions or concerns about the proposed action or the SMART Planning Framework, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter with enclosures will be provided to Section106@crt.la.gov.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Carlos Bullock, Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, TX 77351

Dear Chairman Bullock:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

The New Orleans District (CEMVN) is preparing a Southwest Coastal Louisiana (SWC LA) Integrated Feasibility Report and Environmental Impact Statement (Integrated Report), which will describe all aspects of the SWC LA study, from its inception through the evolution of the various alternatives, the discussion of potential impacts to applicable natural, socioeconomic and cultural resources, to the decision to recommend a preferred alternative.

The purpose of this letter is to initiate consultation for the SWC LA study, in partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act, and Section 106 of the National Historic Preservation Act. The CEMVN offers you the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands.

Study Authority and History of Investigation

The hurricane and storm damage risk reduction purpose of the SWC LA study was authorized on December 7, 2005, by the Committee on Transportation and Infrastructure, U.S. House of Representatives, Resolution Docket 2747, and the ecosystem restoration purpose was recommended for approval in the 2005 USACE Chief's Report for the Louisiana Coastal Area (LCA) Ecosystem Restoration Program that was authorized in the Water Resources Development Act of 2007. The Feasibility Cost Share Agreement was signed with the CPRAB on January 14, 2009. In 2013 the CEMVN was directed to transition the project to SMART planning.



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-3-

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As always, should you have any questions or concerns about the proposed action or the SMART Planning Framework, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter with enclosures will be provided to Mr. Bryant J. Celestine, Historic Preservation Officer, Alabama Coushatta Tribe of Texas, celestine.bryant@actribe.org.

Sincerely,


for  Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Brenda Shemayne Edwards, Chairwoman
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Dear Chairwoman Edwards:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

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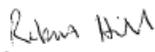


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As always, should you have any questions or concerns about the proposed action or the SMART Planning Framework, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter with enclosures will be provided to Mr. Robert Cast, Tribal Historic Preservation Officer, Caddo Nation of Oklahoma, rcast@caddonation.org.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

John Paul Darden, Chairman
Chitimacha Tribe of Louisiana
P.O. Box 661
Charenton, LA 70523

Dear Chairman Darden:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

The New Orleans District (CEMVN) is preparing a Southwest Coastal Louisiana (SWC LA) Integrated Feasibility Report and Environmental Impact Statement (Integrated Report), which will describe all aspects of the SWC LA study, from its inception through the evolution of the various alternatives, the discussion of potential impacts to applicable natural, socioeconomic and cultural resources, to the decision to recommend a preferred alternative.

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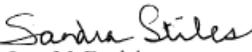


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Sincerely,


for Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702-1210

Dear Chief Pyle:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

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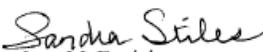


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Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Kevin Sickey, Chief
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Dear Chief Sickey:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

The New Orleans District (CEMVN) is preparing a Southwest Coastal Louisiana (SWC LA) Integrated Feasibility Report and Environmental Impact Statement (Integrated Report), which will describe all aspects of the SWC LA study, from its inception through the evolution of the various alternatives, the discussion of potential impacts to applicable natural, socioeconomic and cultural resources, to the decision to recommend a preferred alternative.

The purpose of this letter is to initiate consultation for the SWC LA study, in partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act, and Section 106 of the National Historic Preservation Act. The CEMVN offers you the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands.

Study Authority and History of Investigation

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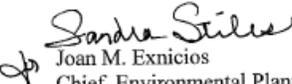


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Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

B. Cheryl Smith, Principal Chief
Jena Band of Choctaw Indians
P.O. Box 14
Jena, LA 71342

Dear Principal Chief Smith:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

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As always, should you have any questions or concerns about the proposed action or the SMART Planning Framework, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter with enclosures will be provided to Ms. Dana Masters, Tribal Historic Preservation Officer, Jena Band of Choctaw Indians, jbc.thpo106@aol.com, and Ms. Lillie McCormick, Environmental Director, Jena Band of Choctaw Indians, lmccormickjbc@centurytel.net.

Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Phyliss J. Anderson, Chief
Mississippi Band of Choctaw Indians
P.O. Box 6257
Choctaw, MS 39350

Dear Chief Anderson:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

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Sincerely,


Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

John Berrey, Chairman
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Chairman Berrey:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

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Joan M. Exnicios
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Enclosures



REPLY TO
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DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Leonard M. Harjo, Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Principal Chief Harjo:

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Chief, Environmental Planning Branch

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DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

James Billie, Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Billie:

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Sincerely,


for Joan M. Exnicios
Chief, Environmental Planning Branch

Enclosures



REPLY TO
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DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

November 27, 2013

Regional Planning and
Environment Division, South

Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Dear Chairman Barbry:

The United States Army Corps of Engineers (USACE) and the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB) are investigating the feasibility of implementing hurricane and storm damage risk reduction measures as well as ecosystem restoration measures within southwest coastal Louisiana.

The New Orleans District (CEMVN) is preparing a Southwest Coastal Louisiana (SWC LA) Integrated Feasibility Report and Environmental Impact Statement (Integrated Report), which will describe all aspects of the SWC LA study, from its inception through the evolution of the various alternatives, the discussion of potential impacts to applicable natural, socioeconomic and cultural resources, to the decision to recommend a preferred alternative.

The purpose of this letter is to initiate consultation for the SWC LA study, in partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act, and Section 106 of the National Historic Preservation Act. The CEMVN offers you the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands.

Study Authority and History of Investigation

The hurricane and storm damage risk reduction purpose of the SWC LA study was authorized on December 7, 2005, by the Committee on Transportation and Infrastructure, U.S. House of Representatives, Resolution Docket 2747, and the ecosystem restoration purpose was recommended for approval in the 2005 USACE Chief's Report for the Louisiana Coastal Area (LCA) Ecosystem Restoration Program that was authorized in the Water Resources Development Act of 2007. The Feasibility Cost Share Agreement was signed with the CPRAB on January 14, 2009. In 2013 the CEMVN was directed to transition the project to SMART planning.



-2-

This is the second CEMVN study within the USACE SMART Planning framework, which organizes the planning process for feasibility studies around key decision points (please refer to enclosed diagram). Following preparation of the Integrated Report, a public comment period will be conducted along with technical, peer and policy reviews. Additional feasibility work remains to be completed on engineering, cost estimating, environmental, economic, real estate and construction elements of the plan. Results of the reviews and additional feasibility work will be incorporated into the final report, which will be made available for review before the Chief of Engineers makes a final recommendation on the project.

Study Area

The study area is located in southwestern Louisiana, covering an area of approximately 4,700 square miles (please refer to enclosed map of the study area). The area occupies a portion of the Pleistocene Prairie Terrace (or Prairie Complex) on the northern edge of Cameron and Vermilion parishes, as well as most of Calcasieu Parish, and most of the Marginal Plain (or Chenier Plain) on the coast in Cameron and the southern portions of Calcasieu and Vermilion parishes. The study area includes residential, commercial, industrial and undeveloped land.

Proposed Action

Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing, and the acquisition of qualifying structures. The National Ecosystem Restoration (NER) purpose of SWC LA project is to significantly restore environmental conditions for the Chenier Plain ecosystem. Proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier reforestation program to include the planting of trees on approximately 1,413 acres (please refer to the two enclosed maps of the draft NER TSP). The alternatives will be further developed in the Integrated Report.

Section 106 Consultation

The USACE has determined that the proposed action is an undertaking as defined in 36 CFR § 800.16(y) that has the potential to cause effects on historic properties. This letter initiates formal Section 106 consultation pursuant to 36 CFR § 800.3(c). CEMVN is currently reviewing existing information on historic properties within the study area. Following the preparation of the Integrated Report, CEMVN will schedule a teleconference to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.



-3-

Your response to this letter, including any information your office may wish to provide at this time concerning the proposed undertaking and its potential to significantly affect protected tribal resources, tribal rights, or Indian lands is greatly appreciated. Please also notify us of any other interested party who may wish to participate in this consultation.

As always, should you have any questions or concerns about the proposed action or the SMART Planning Framework, you may contact Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; Rebecca.Hill@usace.army.mil. An electronic copy of this letter with enclosures will be provided to Mr. Earl Barbry, Jr., Cultural Director, Tunica-Biloxi Tribe of Louisiana, earlji@tunica.org.

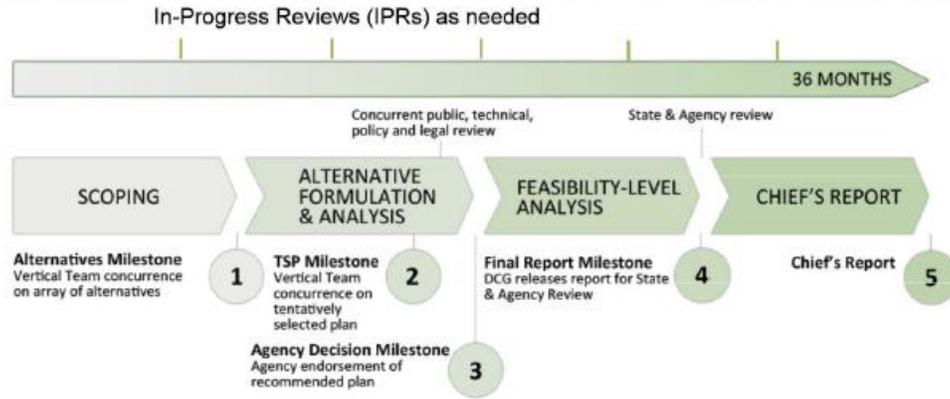
Sincerely,


 Joan M. Exnicios
Chief, Environmental Planning Branch

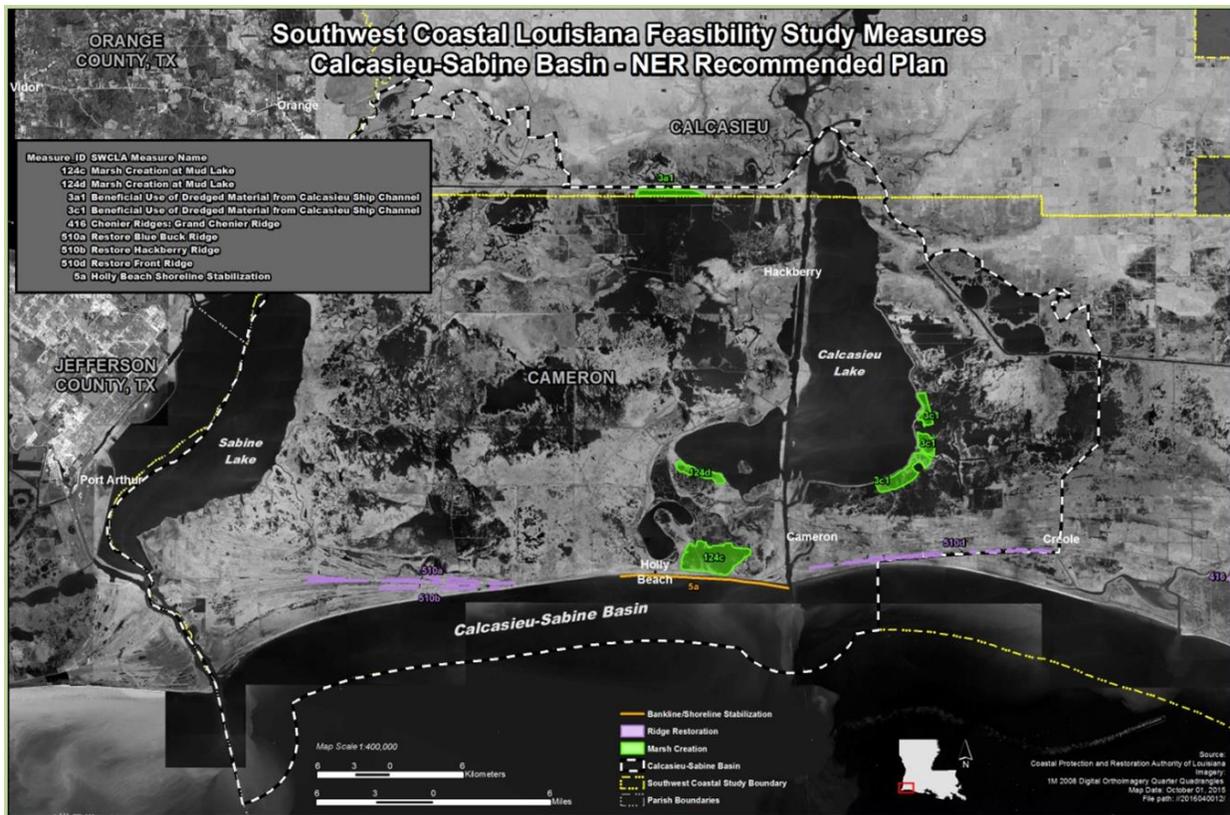
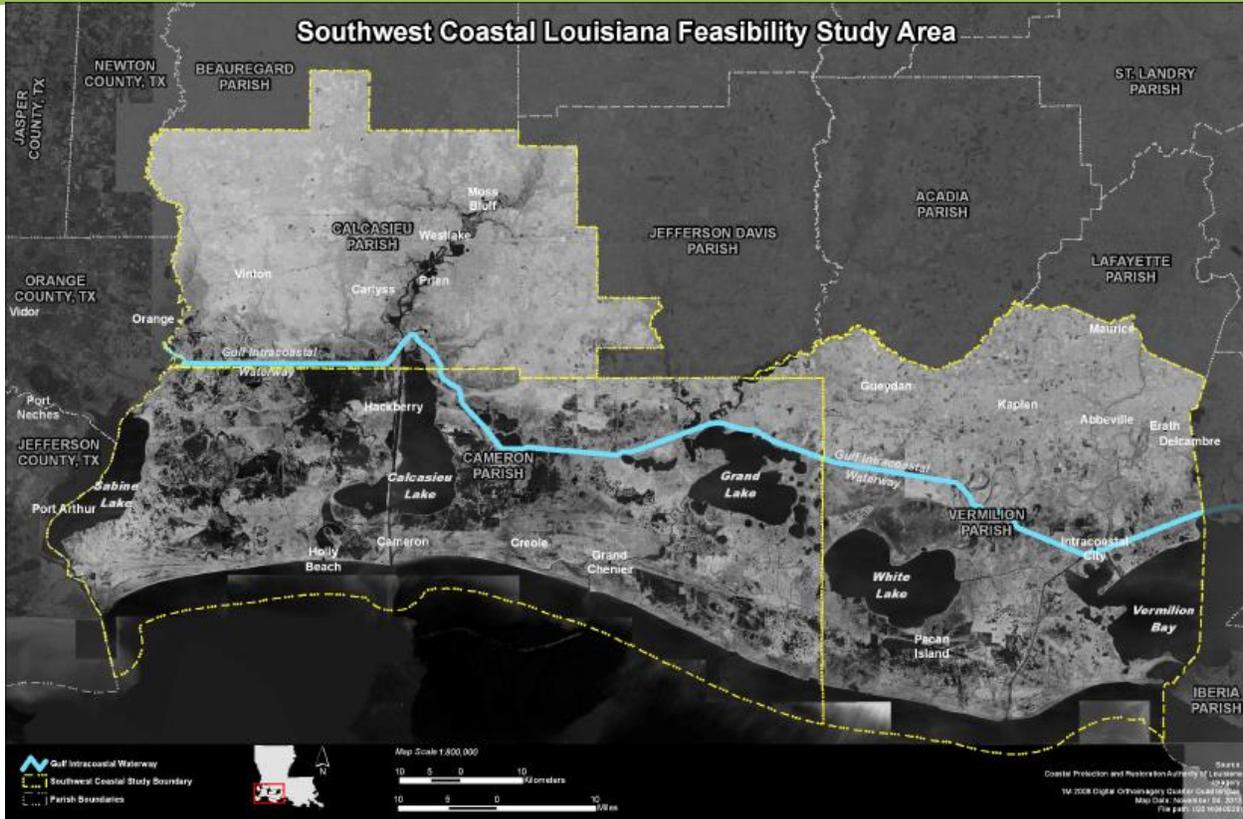
Enclosures

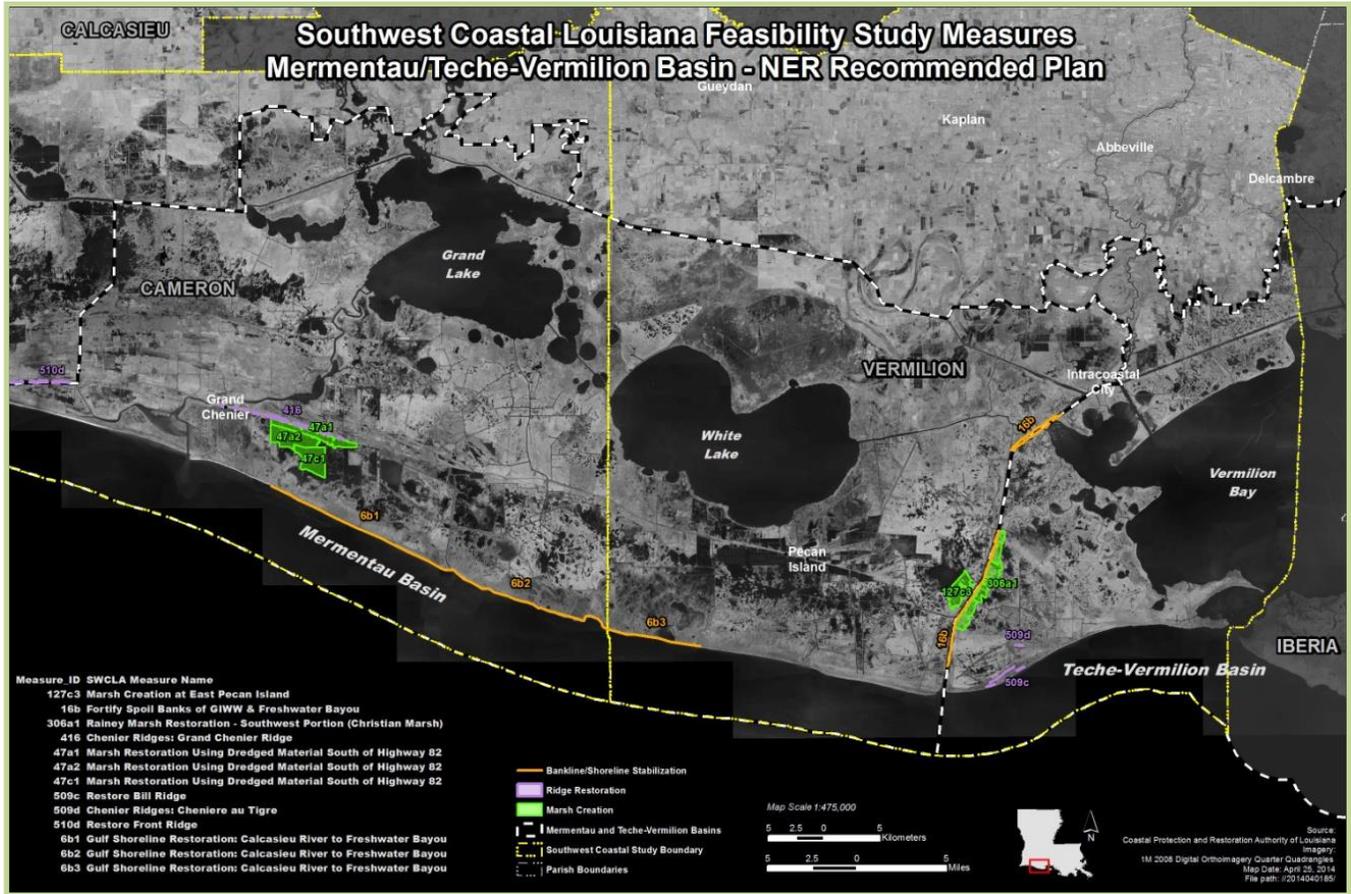


SMART Feasibility Study Process



BUILDING STRONG[®]







REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Carlos Bullock, Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, TX 77351

Dear Chairman Bullock:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

In partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act, the CEMVN offers you the opportunity to review and comment on the potential of the proposed action described in the Draft Integrated Report to significantly affect protected tribal resources, tribal rights, or Indian lands. Consultation for the proposed action was initiated in a letter dated November 27, 2013.

The Draft Integrated Report proposes potential solutions that would provide nonstructural hurricane and storm damage risk reduction measures as well as ecosystem restoration features in the 4,700 square mile study area located in Calcasieu, Cameron and Vermillion parishes in southwest Louisiana.

Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing and the acquisition of qualifying structures. The proposed measures of the National Ecosystem Restoration (NER) plan would significantly restore environmental conditions for the Chenier Plain ecosystem. The proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier invasive species control and reforestation program to include the planting of trees on approximately 1,413 acres.



-2-

Section 106 Consultation

Formal Section 106 consultation pursuant to 36 CFR § 800.3(c) has been initiated with the Louisiana State Historic Preservation Officer (SHPO) and eleven federally recognized Tribes with an interest in USACE undertakings within the boundaries of CEMVN, and the CEMVN will continue consultation with the SHPO and federally recognized Tribes. With selection of the TSP as presented in the Draft Integrated Report, the CEMVN will now proceed with the identification and evaluation of historic properties, the results of which will be coordinated with the SHPO and federally recognized Tribes in a continuation of Section 106 consultation.

CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mr. Celestine to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Mr. Bryant J. Celestine, Historic Preservation Officer, Alabama Coushatta Tribe of Texas, celestine.bryant@actribe.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Brenda Shemayne Edwards, Chairwoman
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Dear Chairwoman Edwards:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

In partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act, the CEMVN offers you the opportunity to review and comment on the potential of the proposed action described in the Draft Integrated Report to significantly affect protected tribal resources, tribal rights, or Indian lands. Consultation for the proposed action was initiated in a letter dated November 27, 2013.

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Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing and the acquisition of qualifying structures. The proposed measures of the National Ecosystem Restoration (NER) plan would significantly restore environmental conditions for the Chenier Plain ecosystem. The proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier invasive species control and reforestation program to include the planting of trees on approximately 1,413 acres.



-2-

Section 106 Consultation

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mr. Cast to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Mr. Robert Cast, Tribal Historic Preservation Officer, Caddo Nation of Oklahoma, rcast@caddonation.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

John Paul Darden, Chairman
Chitimacha Tribe of Louisiana
P.O. Box 661
Charenton, LA 70523

Dear Chairman Darden:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

In partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act, the CEMVN offers you the opportunity to review and comment on the potential of the proposed action described in the Draft Integrated Report to significantly affect protected tribal resources, tribal rights, or Indian lands. Consultation for the proposed action was initiated in a letter dated November 27, 2013.

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-2-

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mrs. Walden to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Mrs. Kimberly Walden, M. Ed., Cultural Director/Tribal Historic Preservation Officer, Chitimacha Tribe of Louisiana, kswalden@chitimacha.gov.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702-1210

Dear Chief Pyle:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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-2-

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Dr. Thompson and Ms. Jacobs to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Dr. Ian Thompson, Director/Tribal Historic Preservation Officer, Choctaw Nation of Oklahoma, ithompson@choctawnation.com and Ms. Johnnie Jacobs, NHPA Section 106 Coordinator, jjacobs@choctawnation.com.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Kevin Sickey, Chief
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Dear Chief Sickey:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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-2-

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Dr. Langley and Mr. Tarpley to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Dr. Linda Langley, Tribal Historic Preservation Officer, Coushatta Tribe of Louisiana, llangley@mcneese.edu, and Mr. Michael Tarpley, Deputy Tribal Historic Preservation Officer, Coushatta Tribe of Louisiana, kokua.aina57@gmail.com.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

B. Cheryl Smith, Principal Chief
Jena Band of Choctaw Indians
P.O. Box 14
Jena, LA 71342

Dear Principal Chief Smith:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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-2-

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Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Ms. Dana Masters, Tribal Historic Preservation Officer, Jena Band of Choctaw Indians, jbc.thpo106@aol.com, and Ms. Lillie McCormick, Environmental Director, Jena Band of Choctaw Indians, lmccormickjbc@centurytel.net.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Phylliss J. Anderson, Chief
Mississippi Band of Choctaw Indians
P.O. Box 6257
Choctaw, MS 39350

Dear Chief Anderson:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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-2-

Section 106 Consultation

Formal Section 106 consultation pursuant to 36 CFR § 800.3(c) has been initiated with the Louisiana State Historic Preservation Officer (SHPO) and eleven federally recognized Tribes with an interest in USACE undertakings within the boundaries of CEMVN, and the CEMVN will continue consultation with the SHPO and federally recognized Tribes. With selection of the TSP as presented in the Draft Integrated Report, the CEMVN will now proceed with the identification and evaluation of historic properties, the results of which will be coordinated with the SHPO and federally recognized Tribes in a continuation of Section 106 consultation.

CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mr. Carleton to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Mr. Kenneth H. Carleton, Tribal Historic Preservation Officer/ Archeologist, Mississippi Band of Choctaw Indians, kcarleton@choctaw.org.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

John Berrey, Chairman
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Chairman Berrey:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

In partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act, the CEMVN offers you the opportunity to review and comment on the potential of the proposed action described in the Draft Integrated Report to significantly affect protected tribal resources, tribal rights, or Indian lands. Consultation for the proposed action was initiated in a letter dated November 27, 2013.

The Draft Integrated Report proposes potential solutions that would provide nonstructural hurricane and storm damage risk reduction measures as well as ecosystem restoration features in the 4,700 square mile study area located in Calcasieu, Cameron and Vermillion parishes in southwest Louisiana.

Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing and the acquisition of qualifying structures. The proposed measures of the National Ecosystem Restoration (NER) plan would significantly restore environmental conditions for the Chenier Plain ecosystem. The proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier invasive species control and reforestation program to include the planting of trees on approximately 1,413 acres.



-2-

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mr. Bandy to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Mr. Everett Bandy, Tribal Historic Preservation Officer, Quapaw Tribe of Oklahoma, ebandy@quapawtribe.com.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Leonard M. Harjo, Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Principal Chief Harjo:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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Proposed measures of the National Economic Development plan include residential structure elevation, flood proofing and the acquisition of qualifying structures. The proposed measures of the National Ecosystem Restoration (NER) plan would significantly restore environmental conditions for the Chenier Plain ecosystem. The proposed NER measures include nine marsh restoration measures that would restore approximately 8,579 acres and nourish approximately 4,026 acres, resulting in approximately 8,714 net acres; two hydrologic and salinity control measures to restore approximately 6,092 net acres; five shoreline protection measures spanning approximately 266,884 linear feet to protect approximately 5,509 net acres; the preservation of the historic Sabine oyster reef; and a chenier invasive species control and reforestation program to include the planting of trees on approximately 1,413 acres.



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Please review the Integrated Draft Report and provide comments. The official closing date for receipt of comments will be January 26, 2014. Please send comments and/or any questions or concerns about the SWC LA study or the SMART Planning framework to Ms. Rebecca Hill; Archeologist/Tribal Liaison; U.S. Army Corps of Engineers, New Orleans District; (504) 862-1474; rebecca.hill@usace.army.mil. Comments and/or questions may also be submitted via the contact information available on the website <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>. An electronic copy of this letter will be provided to Ms. Natalie Harjo, Tribal Historic Preservation Officer, Seminole Nation of Oklahoma, harjo.n@sno-nsn.gov, Ms. Rachel Dinwiddie, Environmental Protection Program Manager, dinwiddie.r@sno-nsn.gov, and Mr. Mickey Douglas, Environmental Protection Office, douglas.m@sno-nsn.gov.

Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

James Billie, Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Billie:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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CEMVN is nearing completion of its review of existing information on historic properties within the study area and will be scheduling a teleconference via a forthcoming email to Mr. Backhouse to discuss the area of potential effects (APE), the existing information on historic properties within the APE, as well as data concerning possible historic properties not yet identified, and the level of effort for the identification and evaluation of historic properties.

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Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

DECEMBER 11, 2013

Regional Planning and
Environment Division, South

Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Dear Chairman Barbry:

The United States Army Corps of Engineers (USACE), New Orleans District (CEMVN), has prepared a draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (Draft Integrated Report) for the Southwest Coastal Louisiana (SWC LA) Study. A copy of the Draft Integrated Report is enclosed and is available electronically for review at <http://www.mvn.usace.army.mil/About/Projects/SouthwestCoastal.aspx>; hard copies are available upon request.

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Sincerely,

Joan M. Exnicios
Chief, Environmental Planning Branch