

**OPERATION, MAINTENANCE, AND REHABILITATION
PLAN FOR LAKE CHAPEAU MARSH CREATION AND
HYDROLOGIC RESTORATION
TE-26**

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History of Revisions

01/31/2005	Warning Buoy Replacement - Project Completion Report
01/31/2005	As-Built Drawings

OPERATION, MAINTENANCE AND REHABILITATION PLAN
FOR THE
LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION
PROJECT (TE-26)

The Louisiana Department of Natural Resources (LDNR) and the United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) agree to carry out the terms of this plan for the Operation, Maintenance, Repair and Rehabilitation Plan (hereinafter referred to as the "Plan") of the accepted completed project features in accordance with the U.S. Department of Commerce NOAA Cooperative Agreement No. NA57FZ0177 with LDNR awarded March 1, 1995 with amendments effective January 1, 1998; December 1, 1997 (back dated to reflect period of revised cost share ratio); and September 1, 1999 (see Attachment I). A Memorandum of Agreement between LDNR, NOAA and the U.S. Army Corps of Engineers fully executed February 10, 1999 specifies the arrangement between the parties to execute and fund long-term project activities, i.e. operations and maintenance, and monitoring (see Attachment II).

Construction of Lake Chapeau Marsh Creation was authorized by Section 303(a) of Title III Public Law 101-46, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. The Lake Chapeau Project was approved on the third (3rd) Priority Project List.

The project features covered by this plan are inclusive of and are identified as the Lake Chapeau Marsh Creation and Hydrologic Restoration Project (TE-26). The intention of the provisions of this Plan is to maintain this project in a condition that will generally provide the anticipated benefits that the project was based on. There is no requirement that this project function to any standard beyond the economic life; except that it is not left as a hazard to navigation or a detriment to the environment.

The property associated with the Lake Chapeau Project is owned by the Terrebonne Parish School Board, Point Au Fer L.L.C., and the Roman Catholic Church of the Arch Diocese of New Orleans.

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Lake Chapeau Marsh Creation and Hydrologic Restoration Project encompasses 13,024 acres of intermediate and brackish marsh and open water on Point Au Fer Island, in the vicinity of Lake Chapeau located 30 miles south of Morgan City, Louisiana, in Terrebonne Parish. It is bounded by Four League Bay to the north, Atchafalaya Bay to the west, Locust Bayou and a network of canals to the south, and Wildcat Bayou and an oil field canal to the east. The project map showing project area and location of project features are shown in Attachment III.

This Lake Chapeau Marsh Creation Project involves restoring marshes west of Lake Chapeau and re-establishing a land bridge between Locust Bayou and Alligator Bayou with sediment dredged from the Atchafalaya Bay. This project was constructed in three (3) separate construction units. The first component of the Lake Chapeau Project consisted of dredging 721,931 cubic yards (cy) of materials from Atchafalaya Bay, approximately 1,700 feet offshore from the west central shoreline to Point Au Fer Island. The material was hydraulically placed over a 1,800-acre area at an elevation of +2 ft. NGVD. Later, 35,000 - 4" smooth cord grass

plugs were planted over the newly created marsh. The second project component consisted of the construction of seven (7) rock plug structures across existing oil field canal. These rock plugs were constructed across man-made channels around the fringes of Lake Chapeau project area and will restore the natural circulation and drainage patterns within the central portion of Point Au Fer Island. The third project component involved dredging 59,218 cy of Locust Bayou to a depth of -6.0 ft. NGVD.

Two hundred sixty (260) acres of open water will be converted to intermediate marsh. Additionally, 1,640 acres of marsh will be enhanced and 2,500 acres of marsh will be protected from wind wave erosion and scour, and 900 acres of submerged aquatic vegetation will be created by the project in the open-water areas. By reducing tidal energies in the project area, the marsh will reduce tidal scour, encourage growth of emergent and submergent vegetation, and promote sediment accretion. Over the 20-year project life, natural wetlands loss is expected to abate and broken marsh areas will start to accrete as natural hydrology is restored and water fluctuations are reduced.

The Project has a 20-year economic life which began in May 1999.

The principal project features include:

Construction Unit No.1

- Hydraulic Fill - 721,931 cy of sediment.
- Planting of 35,000 smooth cord grass plugs.

Construction Unit No.2

- Site 1 - Rock Plug 150 linear feet (LF)
- Site 3 - Rock Plug 229 LF
- Site 4 - Rock Plug 174 LF
- Site 5 - Rock Plug 70 LF
- Site 6 - Rock Plug 145 LF
- Site 7 - Rock Plug 157 LF
- Site 9 - Rock Plug 240 LF

Construction Unit No.3

- Dredging 6,400 LF Locust Bayou to -6.0; NGVD.

2. **CONSTRUCTION COMPLETION**

Project completion reports and as-built drawings for the Lake Chapeau Marsh Creation and Hydrological Restoration Project were never completed. However, upon completion of construction, LDNR had prepared a Final Report for the project which describes the purpose of the project, project objectives and work performed, benefitted acres, project management and design, construction activities and change orders and other significant milestone dates and comments (see Attachment IV). Construction drawings of the Lake Chapeau project are shown in Attachment V.

3. **PROJECT PERMITS**

Project permit applications were completed and submitted to appropriate agencies and permits were received prior to construction. These permits and permit amendments are included in Attachment VI.

4. **ITEMS REQUIRING MAINTENANCE AND REHABILITATION**

The following completed structural components project features jointly accepted by LDNR and NMFS will require maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

- A. **Site/Structure #1** - 147.5 LF rock riprap plug (approximately 2,140 tons of shell and rock riprap) across an oil field access canal on the east side of Locust Bayou north of Site #9. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- B. **Site/Structure #3** - 229.1 LF rock riprap plug (approximately 7,380 tons of shell and rock riprap) across an oil field access canal northeast of Lake Chapeau and north of Site #4. The top of the rock plug is set at -4.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- C. **Site/Structure #4**- 173.8 LF rock riprap plug (approximately 5,740 tons of shell and rock riprap) across an oil field access canal northeast of Lake Chapeau and south of Site #3. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- D. **Site/Structure #5**- 70 LF rock riprap plug (approximately 400 tons of shell and rock riprap) across an oil field access canal west of Mosquito Bayou northeast of Site #6. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- E. **Site/Structure #6**- 145.1 LF rock riprap plug (approximately 780 tons of shell and

rock riprap) across an oil field access canal east of Bourges Bayou and southwest of Site #5. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

- F. **Site/Structure #7-** 157.1 LF rock riprap plug (approximately 1,490 tons of shell and rock riprap) across an oil field access canal east of Locust Bayou south of Site #9. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- G. **Site/Structure #9-** 240.4 LF rock riprap plug (approximately 4,070 tons of shell and rock riprap) across an oil field access canal east of Locust Bayou north of Site #7. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.
- H. **Navigational Aids** - Where applicable, project navigation aids and warning signs shall be inspected and maintained for the twenty year (20) project life.

5. OPERATION AND MAINTENANCE BUDGET

The cost associated with Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 for the twenty (20) year project life is included and summarized in Attachment VII..

6. RESPONSIBILITIES-MAINTENANCE AND REHABILITATION

A. LDNR will:

1. In accordance with the Cooperative Agreement No. NA57FZ0177 (Cost Sharing Agreement), assume all responsibilities for maintenance and Rehabilitation of the accepted completed project features identified in Section 4.
2. Conduct joint site inspections with NMFS of the project site at least annually and after major events if determined to be necessary by LDNR and/or NMFS.

LDNR will submit to NMFS, a report detailing the Condition of the project features and recommendations for any corrective action. If LDNR recommends that corrective actions are needed, the report will include the entire estimated cost for engineering and design, supervision and inspection, construction, contingencies, and the urgency of such action.

3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by LDNR or NMFS. NMFS will participate with LDNR, or its appointed representative, in the engineering and design phases of the corrective actions for the project. Oversight of engineering and construction of the corrective actions for the project will be the responsibility of LDNR or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, LDNR or its appointed representative shall provide NMFS with final copies of all project corrective action designs and specifications for review and concurrence by NMFS. LDNR or its appointed representative shall approve the final designs and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with NMFS. Any plan and/or specification changes both before and after award of construction contracts, shall be approved by LDNR in coordination with NMFS.
4. The representatives LDNR and NMFS shall meet as necessary during the period of construction to address corrective actions needed and shall make such recommendations as they deem necessary.
5. Facilitate the State contribution towards operation and maintenance activities as specified in the Memorandum of Agreement between LDNR, NMFS and the U.S. Army Corps of Engineers.

B. NMFS will:

1. Conduct joint site inspections with LDNR of the project site at least annually and after major storm events if determined to be necessary by LDNR or NMFS.
2. Review final copies of any maintenance and rehabilitation project designs and specifications and provide concurrence prior to formal request for construction bids or any corrective actions for the project.
3. Facilitate the Federal contribution towards operation and maintenance activities as specified in the Memorandum of Agreement between LDNR, NMFS and U.S. Army Corps of Engineers.

4. Upon the request of the LDNR and to the extent its resources allow, provide consultative assistance for the maintenance and rehabilitation of the project.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Lake Chapeau Marsh Creation and Hydrologic Restoration Project (TE-26)

according to this document, referenced Cooperative Agreement, plans, and all applicable permits and laws.

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

BY: Erik C. J. [Signature] DATE: 2/13/03

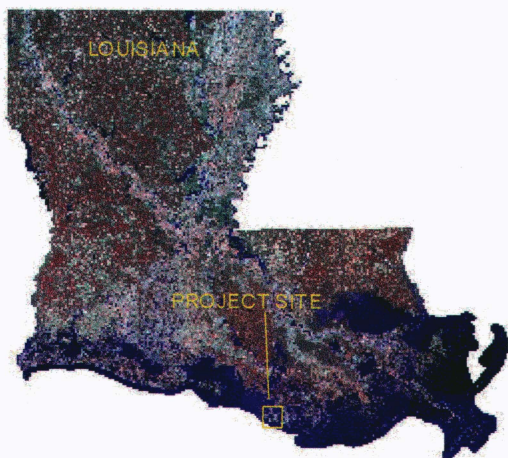
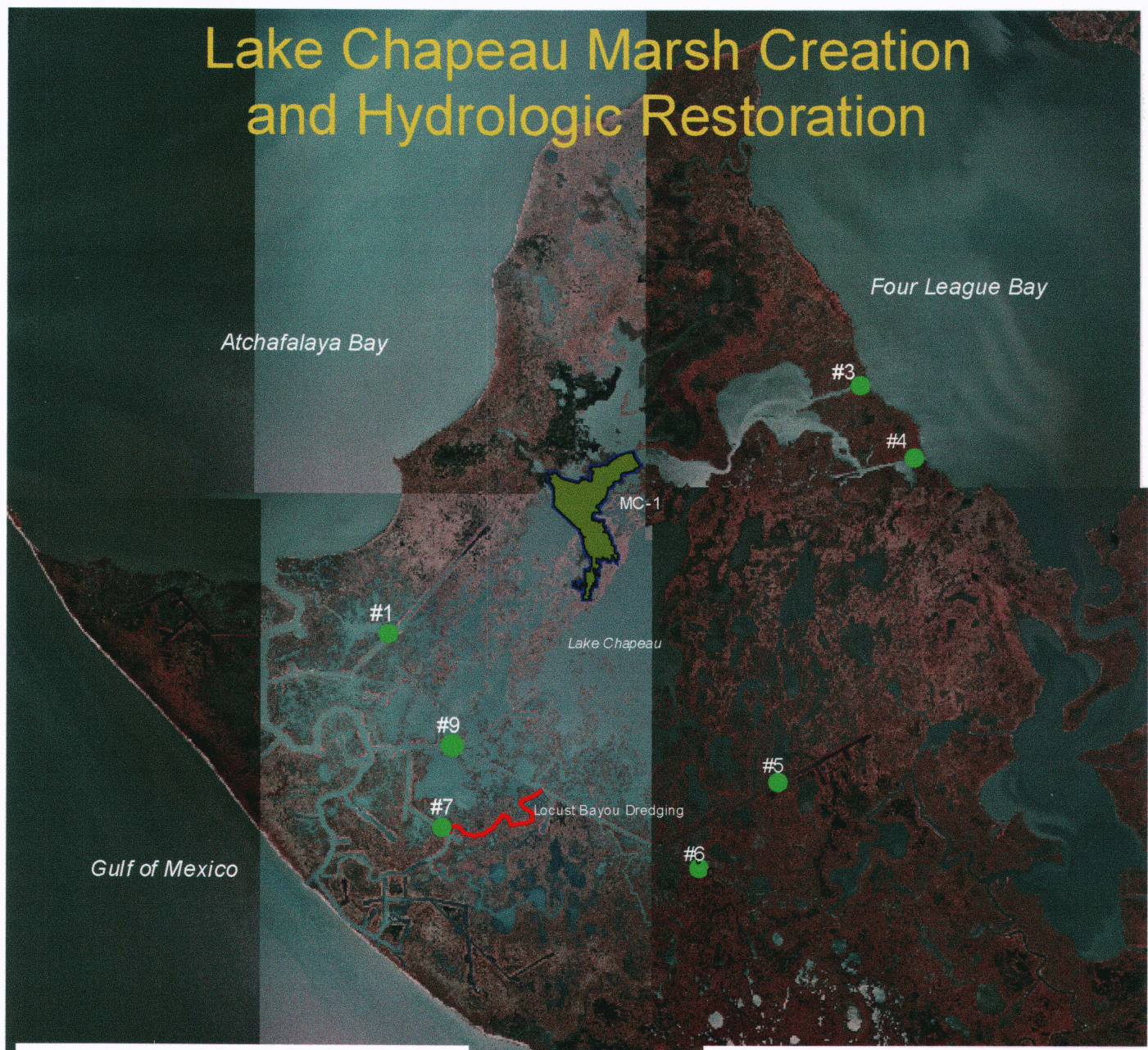
TITLE: Program Manager

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

BY: [Signature] DATE: 2/28/03

TITLE: Deputy Assistant Secretary

Lake Chapeau Marsh Creation and Hydrologic Restoration



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