

**OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE
BLACK BAYOU BYPASS CULVERTS HYDROLOGIC RESTORATION
PROJECT
(CS-29)**

The Louisiana Department of Natural Resources (LDNR) and the United States Department of Agriculture / Natural Resources Conservation Service (NRCS) agree to carry out the terms of this Operation, Maintenance, and Rehabilitation Plan (hereinafter referred to as the “Plan”) of the accepted, completed project features in accordance with the Cost Sharing Agreement No. CWPPRA-00-02, DNR Agreement No. 2511-01-03 dated July 25, 2000 and Amendment No.1 to the Cost Sharing Agreement dated October 29, 2003. (Attachment I).

The project features covered by this plan are inclusive of and are identified as the Black Bayou Bypass Culverts Hydrologic Restoration Project (CS-29) hereinafter referred to as the Black Bayou Culverts Project. 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.

Construction of the Black Bayou Culverts Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. This project was approved on the ninth (9th) Priority Project List.

The construction components associated with this project are located entirely on land owned by the State of Louisiana.

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Black Bayou Culverts Project consists of approximately 72,378 acres in Cameron and Calcasieu parishes. The proposed location of the culverts is approximately 0.5 mile south of the intersection of LA State Highway 384 and the Gulf Intracoastal Waterway (GIWW) along Hwy. 384 in Calcasieu Parish (Attachment II).

The purpose of the action is to provide additional drainage capability within the western edge of the Mermentau River Basin. The need for the action is to aid in the lowering of the basin interior water elevation to give relief from prolonged inundation of marsh vegetation, which ultimately causes marsh loss and shoreline erosion. Further, this inundation specifically generates increased water logging stress to marshhay cordgrass-dominated intermediate marshes contributing to interior wetland loss within the southern portion of the Lakes sub-basin.

The project has a twenty-year (20 year) economic life, which began in May 2007.

2. **CONSTRUCTION COMPLETION**

The Black Bayou Culverts completion report is included in the Attachment III of this plan and “As Built” drawings are included in Attachment IV. Within this completion report is a summary of information and significant events including: project personnel; final as-built project features and benefited acres; construction cost and CWPPRA project estimates; construction oversight costs; construction activities and change orders; pipeline and utility crossing owner information; and other significant milestone dates and comments.

The project “As-Built” construction drawings are updated with all field changes and modifications that occurred.

3. **PROJECT PERMITS**

Project permit applications were completed and submitted to appropriate agencies and permits were received prior to construction. These permits and permit applications are included in Attachment V. Provisions for renewal of certain Federal and State Permits may be required.

4. **ITEMS REQUIRING MAINTENANCE AND REHABILITATION**

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

- A. **Box Culverts:** 10 (Ten)- 10x10 concrete box culverts with flaps and lock pins
- B. **Conveyance Channel:** Approximately 300 linear feet of channel upstream
Approximately 600 linear feet of channel downstream
- C. **Rip Rap Channel Lining:** Approximately 25 linear feet upstream of structure
Approximately 50 linear feet downstream of structure

5. **OPERATION AND MAINTENANCE BUDGET**

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

6. **OPERATION OF STRUCTURES**

Operation of the structure in accordance with permit requirements (should it be required) will be performed by persons under contract with the State of Louisiana. A copy of the Operations Agreement is included in Attachment VII.

7. **RESPONSIBILITIES - MAINTENANCE AND REHABILITATION**

A: LDNR will:

1. In accordance with the Cost Sharing Agreement outlined in Attachment I, assume all responsibilities for maintenance and rehabilitation of the accepted completed project features identified in Section 4.
2. Conduct joint site inspections with NRCS of the project site at least annually and after major storm events if determined to be necessary by LDNR and/or NRCS. LDNR will submit to NRCS, 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 estimate cost for engineering and design, supervision and inspection, construction, contingencies, and urgency of such actions.
3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by LDNR and NRCS. NRCS 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 final copies of all corrective action designs and specifications for review and concurrence by NRCS. LDNR shall approve the final design and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with NRCS. Any plan and/or specification changes both before and after award of construction contracts shall be approved by LDNR in coordination with NRCS.
4. The representatives appointed above shall meet as necessary during the period of construction for corrective actions and shall make such recommendations, as they deem necessary.
5. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project.

B. NRCS 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 NRCS.
2. Review preliminary design of any operation and maintenance project and provide concurrence prior to formal request for construction bids on any corrective actions for the project.
3. Prove a total contribution equal to the amount outlined in the Cost Sharing Agreement for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Black Bayou Bypass Culverts Project (CS-29) according to this document, referenced Cooperative Agreement, plans, and all applicable permits and laws.

NATURAL RESOURCES CONSERVATION SERVICE

By: _____

Date: _____

Title: _____

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

By: _____

Date: _____

Title: _____

OPERATION AND MAINTENANCE BUDGET (APPROVED BY CWPPRA)

CS-29 BLACK BAYOU BYPASS CULVERTS PROJECT

LEAD AGENCY: NRCS

PROJECT FEATURES:

1. Ten (10)-10 ft. x10 ft. concrete box culverts with aluminum flap gates
2. Conveyance channel
3. Rip Rap Channel Lining

OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

1. The concrete box culverts: assume repairs to the structure over the 20 year life of the project as follows:

Year 7 Replace flaps/general structure repair

Year 14 Clean out conveyance channel

OPERATION AND MAINTENANCE COST CONSIDERATIONS:

(Based on a 20 year project life; cost include inflation)

A.	ANNUAL INSPECTIONS: (1.5 Field day with 3 team members including federal participant, boat and report form Schedule A-1)	\$109,455
B.	ANNUAL COST OF OPERATIONS:	\$366,479
C.	PREVENTATIVE MAINTENANCE (Not required for this project)	\$ 0

D. COST FOR MAINTENANCE PROJECT AT YEAR 7

1.	Contractor Mobilization/Demobilization	\$36,833
2.	General structure repair	\$73,666
	Contractor subtotal:	\$110,499
3.	DNR Design Cost/Administration	\$5,442
4.	Engineering Consultant Design, Survey and Inspection	\$26,048

TOTAL FOR MAINTENANCE YEAR 7: \$141,989

E. COST FOR MAINTENANCE PROJECT AT YEAR 14

1.	Contractor Mobilization/Demobilization	\$9,246
2.	Clean out channel	\$144,242
	Contractor subtotal:	\$153,488
3.	DNR Design Cost/ Administration	\$6,830
4.	Engineering Consultant Design, Survey and Inspection	\$32,694

TOTAL FOR MAINTENANCE YEAR 14: \$193,012

Previously Expended Funds (through July 1, 2003) \$ 0

TOTAL ESTIMATED OPERATION AND MAINTENANCE COST \$810,937

OPERATION AND MAINTENANCE (O&M) BUDGET SUMMARY

CS-29 BLACK BAYOU CULVERTS PROJECT

Original O&M Budget	\$810,937
Revised O&M Budget	\$810,935
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Budget (Increase) Decrease	\$