



**US Army Corps
of Engineers®**
New Orleans District

December 2004

ADDENDUM

TO THE

ECOSYSTEM RESTORATION REPORT

AND THE

FINAL PROGRAMMATIC ENVIRONMENTAL

IMPACT STATEMENT

Louisiana Coastal Area

Ecosystem Restoration Study

Dated November 2004

ADDENDUM

Final Study Report

Louisiana Coastal Area Ecosystem Restoration Study Louisiana

1.0 PURPOSE OF ADDENDUM

The purpose of this Addendum is to summarize the changes made to the Louisiana Coastal Area (LCA) Ecosystem Restoration Study dated November 2004 during the final review and comment period. It is intended to be part of the final report and be an integral part of the project process. Since the submission of the report in November, the Washington Level review resulted in several changes in the report. These items include the addition of information supporting selection of the recommended plan and changes resulting from Counsel review and general editorial comments.

The LCA Report, as supplemented by this Addendum, is intended to serve as the basis for project authorization and, ultimately the Project Cooperation Agreement (PCA). Information contained in this Addendum makes no change to the recommendations contained in the November 2004 report, which has completed State, Agency, and NEPA Compliance Review. Details and supporting documentation pertaining to these changes are available in the files of the Planning and Project Management Division of the New Orleans District, U.S. Army Corps of Engineers.

This Addendum includes project costs updated to the October 2004 price level and discounted at the FY 2005 rate of 5.375%.

2.0 SUMMARY OF REPORT CHANGES

2.1 Executive Summary

- 2.1.1** Addenda to page xvii – “Management of Plan Implementation,” insert the following text after the second paragraph.

The intent of AEAM is to maximize the ecosystem outputs of the LCA Plan. Information developed from the S&T program data collection, monitoring and research efforts will be applied during the planning, design and operation of the various restoration features, projects and project modifications. If the AEAM effort identifies a need to modify any LCA projects after they are constructed, the scope and scale of the modifications will determine whether the changes can be made under the Chief of Engineers discretionary authority or whether additional congressional authorization is required for implementation.

2.2 Section 4 - Plan Implementation

2.2.1 The following text is to be inserted after the last paragraph on page MR 4-36.

The ten near-term critical restoration features to be implemented under future congressional authorization include:

4.2.3.3.1 Multi-purpose Operation of the Houma Canal Lock

This restoration feature involves the multi-purpose operation of the proposed HNC Lock, located at the southern end of the HNC. The Morganza to the Gulf Hurricane Protection Project includes construction of the lock, but does not include the multi-purpose operation of the lock. The objective of this feature is to make more efficient use of Atchafalaya River waters and sediment flow, as well as maintain salinity regimes favorable for area wetlands. The proposed structure would be operated to restrict saltwater intrusion and distribute freshwater and sediment during times of high Atchafalaya River flow. The current project is designed to limit saltwater intrusion, but with a minor modification would provide additional benefits to the wetlands by increasing retention time of Atchafalaya River water in the Terrebonne Basin wetlands. An increased retention time would provide additional sediment and nutrients to nourish the wetlands and would benefit the forested wetlands, and fresh, intermediate, and brackish marshes adjacent to the lock and canal; the Lake Boudreaux wetlands to the north; the Lake Merchant wetlands to the west; and the Grand Bayou wetlands to the east.

4.2.3.3.2 Terrebonne Basin Barrier-Shoreline Restorations

This restoration feature provides for the restoration of the Timbalier and Isles Dernieres barrier island chains. This would simulate historical conditions by reducing the current number of breaches, enlarging (width and dune crest) of the Isles Dernieres (East Island, Trinity Island, and Whiskey Island), Timbalier Island, and East Timbalier Island.

4.2.3.3.3 Land Bridge between Caillou Lake and Gulf of Mexico

This restoration feature would maintain the land bridge between the gulf and Caillou Lake by placing shore protection in Grand Bayou du Large to minimize saltwater intrusion. This feature would involve rock armoring or marsh creation to plug/fill broken marsh areas on the west bank of lower Grand Bayou du Large, to prevent a new channel from breaching the bayou bank and allowing a new connection with Caillou Lake. Some gulf shore armoring would be needed to protect these features from erosion on the gulf shoreline. Gulf shoreline armoring might be required where shoreline retreat and loss of shoreline oyster reefs has allowed increased water exchange between the gulf and the interior water bodies (between Bay Junop and Caillou Lake). Some newly opened channels would be closed to restore historic cross-sections of exchange points. By reducing marine influences in these interior areas, this feature would allow increased freshwater influence from Four League Bay to benefit area marshes.

4.2.3.3.4 Small Diversion at Convent/Blind River

This restoration feature involves a small diversion from the Mississippi River into Blind River through a new control structure. The objective of this feature is to introduce sediment and nutrients into the southeast portion of Maurepas Swamp. This feature is intended to complement the Hope Canal diversion to facilitate organic deposition in the swamp, improve biological productivity, and prevent further swamp deterioration.

4.2.3.3.5 Amite River Diversion Canal

This restoration feature involves the construction of gaps in the existing dredged material banks of the Amite River Diversion Canal. The objective of this feature is to allow floodwaters to introduce additional nutrients and sediment into western Maurepas Swamp. The exchange of flow would occur during flood events on the river and from the runoff of localized rainfall events. This feature would provide nutrients and sediment to facilitate organic deposition in the swamp, improve biological productivity, and prevent further swamp deterioration.

4.2.3.3.6 Medium Diversion at White's Ditch

This restoration feature, located at White's Ditch, downstream of the existing Caernarvon diversion structure, provides for a medium diversion from the Mississippi River into the central River aux Chenes area using a controlled structure. The objective of the feature is to provide additional freshwater, nutrients, and fine sediment to the area between the Mississippi River and River aux Chenes ridges. This area is currently isolated from the beneficial effects of the Caernarvon freshwater diversion. The introduction of additional freshwater would facilitate organic sediment deposition, improve biological productivity, and prevent further deterioration of the marshes. This feature is located in the vicinity of a historic crevasse.

4.2.3.3.7 Stabilize Gulf Shoreline at Pointe Au Fer Island

This feature provides for stabilizing of the gulf shoreline of Point Au Fer Island. The purpose is to prevent direct connections from forming between the gulf and interior water bodies as the barrier island is eroded. In addition to gulf shoreline protection, this feature would prevent the fresher bay side water circulation patterns from being influenced directly by the gulf, thus protecting the estuarine habitat, which has higher quality wetland habitats, from conversion to marine habitat.

4.2.3.3.8 Atchafalaya River Conveyance to Northern Terrebonne Marshes

This restoration feature would increase existing Atchafalaya River influence to central (Lake Boudreaux) and eastern (Grand Bayou) Terrebonne marshes via the GIWW by introducing flow into the Grand Bayou basin by enlarging the connecting channel (Bayou L'Eau Bleu) to capture as much of the surplus flow (max. 2000 to 4000 cfs [70 to 140 cms]) that would otherwise leave the Terrebonne Basin. Several alternatives would be evaluated through hydrologic models; however in all cases, gated control structures

would be installed to restrict channel cross-section to prevent increased saltwater intrusion during the late summer and fall when riverine influence is typically low. Some alternatives may include auxiliary freshwater distribution structures. This feature also includes increasing freshwater supply through repairing banks along the GIWW, enlarging constrictions in the GIWW, and diverting additional Atchafalaya River freshwater through the Avoca Island Levee and into Bayou Chene/GIWW system.

4.2.3.3.9 Modification of Caernarvon Diversion

The Caernarvon diversion structure, constructed on the Mississippi River in 1992 near the Breton Sound marshes, was authorized to introduce fresh water from the river into oyster producing areas, as described in the reports of the Mississippi River Commission and of the U.S. Fish and Wildlife Service. It has a maximum operating capacity of 8,000 cfs (286 cms). The structure has been operated as a salinity management feature, with freshwater introductions ranging between 1,000 cfs to 6,000 cfs (36 cms to 214 cms), but in general averaging less than half of the structure's capacity. The primary purpose of the existing Caernarvon project has been to maintain salinity gradients in the central portion of Breton Sound. This operation, in effect, partially restored the historic functions of marsh nourishment (e.g., freshwater inflow, providing nutrients and sediment to the marsh, and countering the effects of subsidence). The proposed restoration feature study would assess changes in the operation of the Caernarvon project to increase wetland creation and restoration outputs for this structure. Modified operation of this structure would allow an increase in the freshwater introduction rate, perhaps 5,000 cfs (178 cms) on average, to accommodate the wetland building function of the system. This study would identify any changes to this feature's operation that would increase restoration outputs. The introduction of additional freshwater would facilitate organic and sediment deposition, improve biological productivity, and prevent further deterioration of the marshes. This feature is located in the vicinity of a historic crevasse.

4.2.3.3.10 Modification of Davis Pond Diversion

The Davis Pond diversion structure, constructed in 2002 in upper Barataria Basin, has a maximum operating capacity of 10,600 cfs [378 cms]. The structure has been operated as a salinity management feature, with freshwater introductions from the Mississippi River ranging from 1,000 cfs up to 5,000 cfs [36 cms to 178 cms] averaging, to this point in time, considerably less than half of the structure's capacity. The primary purpose of the existing Davis Pond project has been to maintain salinity gradients in the central portion of Barataria Basin. This operation, in effect, partially restored the historic functions of marsh nourishment (e.g., freshwater inflow, providing nutrients and sediment to the marsh, and countering the effects of subsidence). This restoration feature study would assess changes in the operation of the Davis Pond project to increase wetland creation and restoration outputs. Modified operation of this structure could potentially result in an increase in the freshwater introduction rate, perhaps 5,000 cfs [178 cms] on average, to accommodate the wetland building function of the system. This study would identify changes to feature's operation that would increase restoration outputs. The introduction of additional freshwater would facilitate organic and sediment deposition, improve biological productivity, and prevent further deterioration of the marshes. This feature is located in the vicinity of a historic crevasse.

- 2.2.2** The following text is to be inserted after the first paragraph of Section 4.2.4 on page MR 4-37.

Every five years following authorization of the near-term plan, a report will document the status and progress of implementation of the near-term plan, any recommended changes to procedures for implementing the near-term plan, changes to the scope, cost and structure of the near-term plan, including the addition or removal of projects to or from the plan, recommendations to improve the overall execution and management of the plan and any other information or recommendations regarding the plan. Depending on the nature of changes recommended for the LCA Plan, the reports may be forwarded to the Commander of USACE, in consultation with ASA (CW), to determine whether the changes can be made under discretionary authority or whether Congressional Authorization is required to seek modifications of the Plan's authorization. The effort of preparing these reports is included in the cost of the investigations for the large-scale and long-term concepts.

- 2.2.3** The following text is to be inserted after the fourth paragraph on page MR 4-58.

The design components of the LCA Plan and the integration of AEAM require a flexible and integrated approach to plan management. The continuing development of long-range coastal restoration and stabilization through the Science and Technology and Demonstration Programs, as well as the Studies of Large-scale, Long-term Concepts, will contribute to the continual evolution of the LCA Plan. Even the current near-term critical features of the plan proposed for future authorization may need to be modified or reassessed based on initial study, science, and implementation efforts. Effective plan management will require review and updating of the overall LCA Plan at five-year intervals. Following authorization of the near-term plan, a report will be developed every five years documenting the status and progress of implementation of the near-term plan, any recommended changes to procedures for implementing the near-term plan, changes to the scope, cost and structure of the near-term plan, including the addition or removal of projects to or from the plan, recommendations to improve the overall execution and management of the plan and any other information or recommendations regarding the plan. The report would be prepared by Program Management and the Program Execution Teams and approved by HQUSACE and ASA(CW). If there is a need to modify or make changes to any LCA projects after they are constructed, the scope and scale of the modifications will determine whether the changes can be made under the Chief of Engineers discretionary authority or whether additional Congressional Authorization is required for implementation. The cost of preparing these reports is included in the cost of the investigations of the large-scale and long-term concepts requiring detailed study.

- 2.2.4** The following paragraph is to be inserted at the beginning of Section 4.3.4 on page MR 4-61

The LCA study has significantly benefited from the close involvement, coordination, and collaboration of a co-located interagency study team made up of scientists and recognized experts in ecosystem restoration. The implementation of an LCA Plan to

restore coastal Louisiana will require the continued involvement and close coordination of the State of Louisiana, Federal agencies having development, coordination and implementation responsibilities, as well as the involvement of all stakeholders. To continue to build upon this successful record of collaboration a Washington-level Federal agencies task force consisting of senior level decision makers to integrate respective programs and ensure that they are complementary to the overall LCA restoration goals and objectives will be established.

- 2.2.5** The following text is to be inserted after Figure MR 4-8 on page MR 4-74.

The intent of AEAM is to maximize the ecosystem outputs of the LCA Plan. Information developed from the S&T program data collection, monitoring and research efforts will be applied during the planning, design and operation of the various restoration features, projects and project modifications. If the AEAM effort identifies a need to modify any LCA projects after they are constructed, the scope and scale of the modifications will determine whether the changes can be made under the Chief of Engineers discretionary authority or whether additional congressional authorization is required for implementation.

2.3 Section 6 - Recommendations

- 2.3.1** The following text is to be inserted at the end of the second paragraph on page MR 6-2.

Two of the recommended near-term critical features, Caernarvon and Davis Pond freshwater diversions, involve modification of existing projects in order to address ecosystem restoration objectives. Because the modifications are intended to be consistent with the original project purpose, the ultimate OMRR&R of these projects are expected to be implemented within the original O&M plans and agreements for the projects. The Beneficial Use of Dredged Material program is an extension of an existing navigation OMRR&R activity and as such, is not expected to have an additional OMRR&R cost associated with it. The specific OMRR&R cost for demonstration projects cannot be accurately estimated until those projects are selected through the Science and Technology program. However, the OMRR&R costs for the demonstration projects are not expected to be significant. The OMRR&R of any Modifications of Existing Structures would accrue to the original projects.

3.0 COST TABLES

3.1 Summary of Cost Table Changes

The project cost tables have been updated to reflect October 2004 price levels. The following revised cost tables should be used in lieu of those provided in the Final LCA Ecosystem Restoration Study Report and Final Programmatic Environmental Impact Statement wherever they appear. Please insert the revised tables according to the referenced table and page numbers.

- 3.1.1** Please replace Table ES-2 on page xv, Table MR 4-17 on page MR 4-57, and Table MR 6-3 on page 6-8 with the following table. In the Final Programmatic Environmental

Impact Statement (FPEIS), please replace Table 2-30 on page 2-142 and Table 7-3 on page 7-12.

**LCA Plan Component Cost Estimates
(October 2004 Price Levels)**

Item	Cost (\$)
MRGO environmental restoration features	\$ 82,200,000
Small diversion at Hope Canal	\$ 10,900,000
Barataria Basin Barrier shoreline restoration	\$ 186,100,000
Small Bayou Lafourche reintroduction	\$ 77,400,000
Medium diversion with dedicated dredging at Myrtle Grove	\$ 147,000,000
SUBTOTAL	\$ 503,600,000
LERRD	\$ 183,600,000
First Cost	\$ 687,200,000
Preconstruction, Engineering, and Design (PED)	\$ 36,300,000
Engineering and Design (E&D)	\$ 29,000,000
Supervision and Administration (S&A)	\$ 69,000,000
Project Monitoring	\$ 6,800,000
SUBTOTAL	\$ 828,300,000
Conditionally Authorized Cost	\$ 100,000,000
Science & Technology Program Cost	\$ 100,000,000
Beneficial Use of Dredged Material Program Cost	\$ 100,000,000
S&T Demonstration Program Cost*	\$ 95,000,000
SUBTOTAL	\$ 395,000,000
Total First Cost of the Authorization Request	\$ 1,123,300,000
Multi-purpose operation of Houma Navigation Canal (HNC) Lock [#]	\$ -
Terrebonne Basin Barrier shoreline restoration	\$ 87,200,000
Maintain Land Bridge between Caillou Lake and Gulf of Mexico	\$ 42,100,000
Small diversion at Convent / Blind River	\$ 29,400,000
Increase Amite River Diversion Canal influence by gapping banks	\$ 2,900,000
Medium diversion at White's Ditch	\$ 36,200,000
Stabilize Gulf shoreline at Point Au Fer Island	\$ 32,900,000
Convey Atchafalaya River Water to Northern Terrebonne marshes	\$ 135,900,000
Modification of Caernarvon diversion	\$ 1,900,000
Modification of Davis Pond diversion	\$ 1,900,000
SUBTOTAL	\$ 370,400,000
LERRD	\$ 210,000,000
First Cost	\$ 580,400,000
Preconstruction, Engineering, and Design (PED)	\$ 37,000,000
Engineering & Design (E&D)	\$ 45,900,000
Supervision & Administration (S&A)	\$ 59,100,000
Project Monitoring	\$ 5,800,000
SUBTOTAL	\$ 728,200,000
Summary of Preliminary Costs for Features Anticipated for Future Authorization	\$ 728,200,000
Mississippi River Hydrodynamic Study	\$ 10,300,000
Mississippi River Delta Management Study	\$ 15,300,000
Third Delta Study	\$ 15,300,000
Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study	\$ 12,000,000
Acadiana Bays Estuarine Restoration Feasibility Study	\$ 7,100,000
Upper Atchafalaya Basin Study [^]	\$ -
SUBTOTAL	\$ 60,000,000
Large-scale and Long Term Studies Cost	\$ 60,000,000
Investigations of Features Recommended for Authorization	\$ 31,000,000
Investigations of Features Recommended for Future Authorization	\$ 39,000,000
Investigations of Modifications of Existing Projects Program	\$ 10,000,000
Investigations of S&T Demonstration Projects	\$ 5,000,000
SUBTOTAL	\$ 145,000,000
Summary of Costs for Related Investigations	\$ 145,000,000
Total First Cost of the LCA Program	\$ 1,996,500,000

*Program total costs include any estimated Real Estate costs for these activities

[#] Feature of the Mississippi River and Tributaries, Morganza Louisiana to the Gulf of Mexico Hurricane Protection project

[^] Study to be funded under the Mississippi River and Tributaries authority

- 3.1.2** Please replace Table MR 4-7 on page MR 4-19 and Table 9 on page MRGO-28 in Attachment 5 with the table shown below. In the FPEIS, please replace Table 2-20 on page 2-106.

MRGO Environmental Restoration Features Summary of Costs for the Recommended Plan (October 2004 Price Level)	
Lands and Damages	\$ 4,400,000
<u>Elements:</u>	
Ecosystem Restoration	\$ 82,200,000
<i>First Cost</i>	\$ 86,600,000
Feasibility-Level Decision Document	\$ 5,400,000
Preconstruction Engineering, and Design (PED)	\$ 3,600,000
Engineering, and Design (E&D)	\$ 4,600,000
Construction Management (S&A)	\$ 9,600,000
Monitoring	\$ 870,000
Total Cost	\$ 110,700,000

3.1.3 Please replace Table MR 4-8 on page MR 4-20 and Table 10 on page MRGO-28 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-21 on page 2-107. The format of this table was also revised. The updated costs are presented in the original and revised formats for purposes of clarity.

Original Format

**MRGO Environmental Restoration Features
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (50%Fed-50%NFS)	\$ 2,700,000	\$ 2,700,000	\$ 5,400,000
PED (65%Fed-35%NFS)	\$ 2,340,000	\$ 1,260,000	\$ 3,600,000
LERR&D (100% NFS)	\$ -	\$ 4,400,000	\$ 4,400,000
Ecosystem Restoration (65%Fed-35%NFS)	\$ 56,255,000	\$ 25,925,000	\$ 82,240,000
Engineering and Design (E&D) (65%Fed-35%NFS)	\$ 2,990,000	\$ 1,610,000	\$ 4,600,000
Supervision and Administration (S&A) (65%Fed-35%NFS)	\$ 6,240,000	\$ 3,360,000	\$ 9,600,000
Monitoring (65%Fed-35%NFS)	\$ 570,000	\$ 300,000	\$ 870,000
Total Construction	\$ 68,400,000	\$ 36,900,000	\$ 105,300,000
TOTAL COST	\$ 71,100,000	\$ 39,600,000	\$ 110,700,000

Revised Format

**MRGO Environmental Restoration Features
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (Percent)	\$ 2,700,000 50%	\$ 2,700,000 50%	\$ 5,400,000
PED (Percent)	\$ 2,340,000 65%	\$ 1,260,000 35%	\$ 3,600,000
LERR&D (100% NFS)	\$ -	\$ 4,400,000	\$ 4,400,000
Ecosystem Restoration (E&D), (S&A), (Monitoring)	\$ 66,105,000	\$ 31,195,000	\$ 97,300,000
subtotal (Percent)	\$ 66,105,000 65%	\$ 35,595,000 35%	\$ 101,700,000
Total Construction	\$ 68,400,000	\$ 36,900,000	\$ 105,300,000
TOTAL COST	\$ 71,100,000	\$ 39,600,000	\$ 110,700,000

- 3.1.4** Please replace Table MR 4-9 on page MR 4-23 and Table 3 on page Hope Canal – 15 in Attachment 5 with the table shown below. In the FPEIS, please replace Table 2-22 on page 2-110.

Reintroduction at Hope Canal Summary of Costs for the Recommended Plan (October 2004 Price Level)	
Lands and Damages	\$ 27,100,000
<u>Elements:</u>	
Relocations	\$ 23,000,000
Channels and Canals	\$ 4,200,000
Diversion Structures	\$ 6,700,000
<i>First Cost</i>	\$ 61,000,000
Feasibility-Level Decision Document	\$ 3,600,000
Preconstruction Engineering, and Design (PED)	\$ 2,200,000
Engineering, and Design (E&D)	\$ 1,200,000
Construction Management (S&A)	\$ 3,600,000
Monitoring	\$ 600,000
Total Cost	\$ 72,200,000

- 3.1.5** Please replace Table MR 4-10 on page MR 4-23 and Table 4 on page Hope Canal – 16 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-23 on page 2-110. The format of this table was also revised. The updated costs are presented in the original and revised formats for purposes of clarity.

Original Format

**Small Diversion at Hope Canal
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (50%Fed-50%NFS)	\$ 1,800,000	\$ 1,800,000	\$ 3,600,000
PED (65%Fed-35%NFS)	\$ 1,430,000	\$ 770,000	\$ 2,200,000
LERR&D (100% NFS)*	\$ -	\$ 50,100,000	\$ 50,100,000
Ecosystem Restoration (65%Fed-35%NFS)	\$ 39,660,000	\$ (28,750,000)	\$ 10,900,000
Engineering and Design (E&D) (65%Fed-35%NFS)	\$ 780,000	\$ 420,000	\$ 1,200,000
Supervision and Administration (S&A) (65%Fed-35%NFS)	\$ 2,340,000	\$ 1,260,000	\$ 3,600,000
Monitoring (65%Fed-35%NFS)	\$ 390,000	\$ 210,000	\$ 600,000
Total Construction	\$ 44,600,000	\$ 24,000,000	\$ 68,600,000
TOTAL COST	\$ 46,400,000	\$ 25,800,000	\$ 72,200,000

*For the conditionally authorized feature, Small Diversion at Hope Canal, LERR&D exceeded 35% of the total project cost by \$28,750,000, which is reimbursed to the non-federal sponsor.

Revised Format

**Small Diversion at Hope Canal
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (Percent)	\$ 1,800,000 50%	\$ 1,800,000 50%	\$ 3,600,000
PED (Percent)	\$ 1,430,000 65%	\$ 770,000 35%	\$ 2,200,000
LERR&D (100% NFS)*	\$ -	\$ 50,100,000	\$ 50,100,000
Ecosystem Restoration (E&D), (S&A), (Monitoring)	\$ 43,160,000	\$ (26,860,000)	\$ 16,300,000
subtotal (Percent)	\$ 43,160,000 65%	\$ 23,240,000 35%	\$ 66,400,000
Total Construction	\$ 44,600,000	\$ 24,000,000	\$ 68,600,000
TOTAL COST	\$ 46,400,000	\$ 25,800,000	\$ 72,200,000

*For the conditionally authorized feature, Small Diversion at Hope Canal, LERR&D exceeded 35% of the total project cost by \$26,860,000, which is reimbursed to the non-federal sponsor.

- 3.1.6** Please replace Table MR 4-11 on page MR 4-26 and Table 4 on page Barrier Island – 36 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-24 on page 2-113.

Barataria Basin Barrier Shoreline Restoration Project Summary of Costs for the Recommended Plan (October 2004 Price Level)	
Lands and Damages	\$ 16,000,000
<u>Elements:</u>	
Beach Replenishment	\$ 186,100,000
<i>First Cost</i>	\$ 202,100,000
Feasibility-Level Decision Document	\$ 6,000,000
Preconstruction Engineering, and Design (PED)	\$ 6,800,000
Engineering, and Design (E&D)	\$ 10,000,000
Construction Management (S&A)	\$ 21,700,000
Monitoring	\$ 2,000,000
Total Cost	\$ 248,600,000

- 3.1.7** Please replace Table MR 4-12 on page MR 4-27 and Table 5 on page Barrier Island – 37 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-25 on page 2-114. The updated costs are presented in the original and revised formats for purposes of clarity.

Original Format

**Barataria Basin Barrier Shoreline Restoration
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (50%Fed-50%NFS)	\$ 3,000,000	\$ 3,000,000	\$ 6,000,000
PED (65%Fed-35%NFS)	\$ 4,420,000	\$ 2,380,000	\$ 6,800,000
LERR&D (100% NFS)	\$ -	\$ 16,000,000	\$ 16,000,000
Ecosystem Restoration (65%Fed-35%NFS)	\$ 131,370,000	\$ 54,730,000	\$ 186,100,000
Engineering and Design (E&D) (65%Fed-35%NFS)	\$ 6,500,000	\$ 3,500,000	\$ 10,000,000
Supervision and Administration (S&A) (65%Fed-35%NFS)	\$ 14,100,000	\$ 7,600,000	\$ 21,700,000
Monitoring (65%Fed-35%NFS)	\$ 1,300,000	\$ 700,000	\$ 2,000,000
Total Construction	\$ 157,700,000	\$ 84,900,000	\$ 242,600,000
TOTAL COST	\$ 160,700,000	\$ 87,900,000	\$ 248,600,000

Revised Format

**Barataria Basin Barrier Shoreline Restoration
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (Percent)	\$ 3,000,000 50%	\$ 3,000,000 50%	\$ 6,000,000
PED (Percent)	\$ 4,420,000 65%	\$ 2,380,000 35%	\$ 6,800,000
LERR&D (100% NFS)	\$ -	\$ 16,000,000	\$ 16,000,000
Ecosystem Restoration (E&D), (S&A), (Monitoring)	\$ 153,270,000	\$ 66,530,000	\$ 219,800,000
subtotal (Percent)	\$ 153,270,000 65%	\$ 82,530,000 35%	\$ 235,800,000
Total Construction	\$ 157,700,000	\$ 84,900,000	\$ 242,600,000
TOTAL COST	\$ 160,700,000	\$ 87,900,000	\$ 248,600,000

- 3.1.8** Please replace Table MR 4-13 on page MR 4-31 and Table 2 on page Bayou Lafourche – 19 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-26 on page 2-118.

Bayou Lafourche Reintroduction Summary of Costs for the Recommended Plan (October 2004 Price Level)	
Lands and Damages	\$ 12,900,000
<u>Elements:</u>	
Relocations	\$ 15,200,000
Channels and Canals	\$ 53,600,000
Pumping Plants	\$ 16,700,000
Bank Stabilization	\$ 7,100,000
<i>First Cost</i>	\$ 105,500,000
Feasibility-Level Decision Document	\$ 8,000,000
Preconstruction Engineering, and Design (PED)	\$ 9,000,000
Engineering, and Design (E&D)	\$ 5,000,000
Construction Management (S&A)	\$ 13,000,000
Monitoring	\$ 1,000,000
Total Cost	\$ 141,500,000

- 3.1.9** Please replace Table MR 4-14 on page MR 4-32 and Table 3 on page Bayou Lafourche – 20 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-27 on page 2-118. The updated costs are presented in the original and revised formats for purposes of clarity.

Original Format

**Small Bayou Lafourche reintroduction
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (50%Fed-50%NFS)	\$ 4,000,000	\$ 4,000,000	\$ 8,000,000
PED (65%Fed-35%NFS)	\$ 5,850,000	\$ 3,150,000	\$ 9,000,000
LERR&D (100% NFS)	\$ -	\$ 28,000,000	\$ 28,000,000
Ecosystem Restoration (65%Fed-35%NFS)	\$ 68,510,000	\$ 8,890,000	\$ 77,400,000
Engineering and Design (E&D) (65%Fed-35%NFS)	\$ 3,250,000	\$ 1,750,000	\$ 5,000,000
Supervision and Administration (S&A) (65%Fed-35%NFS)	\$ 8,450,000	\$ 4,550,000	\$ 13,000,000
Monitoring (65%Fed-35%NFS)	\$ 715,000	\$ 385,000	\$ 1,100,000
Total Construction	\$ 86,800,000	\$ 46,700,000	\$ 133,500,000
TOTAL COST	\$ 90,800,000	\$ 50,700,000	\$ 141,500,000

Revised Format

**Small Bayou Lafourche reintroduction
FEDERAL AND NON-FEDERAL COST BREAKDOWN
(Oct 2004 Price Level)**

Item	Federal	Non-Federal	Total
Decision Document (Percent)	\$ 4,000,000 50%	\$ 4,000,000 50%	\$ 8,000,000
PED (Percent)	\$ 5,850,000 65%	\$ 3,150,000 35%	\$ 9,000,000
LERR&D (100% NFS)	\$ -	\$ 28,100,000	\$ 28,100,000
Ecosystem Restoration (E&D), (S&A), (Monitoring)	\$ 80,925,000	\$ 15,475,000	\$ 96,400,000
subtotal (Percent)	\$ 80,925,000 65%	\$ 43,575,000 35%	\$ 124,500,000
Total Construction	\$ 86,800,000	\$ 46,700,000	\$ 133,500,000
TOTAL COST	\$ 90,800,000	\$ 50,700,000	\$ 141,500,000

3.1.10 Please replace Table MR 4-15 on page MR 4-34 and Table 10 on page Myrtle Grove – 38 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-28 on page 2-121.

Medium Diversion with Dedicated Dredging at Myrtle Grove Summary of Costs for the Recommended Plan (October 2004 Price Level)	
Lands and Damages	\$ 81,200,000
<u>Elements:</u>	
Relocations	\$ 3,900,000
Ecosystem Restoration	\$ 99,700,000
Channels and Canals	\$ 24,800,000
Diversion Structures	\$ 22,400,000
<i>First Cost</i>	\$ 232,000,000
Feasibility-Level Decision Document	\$ 8,000,000
Preconstruction Engineering, and Design	\$ 14,700,000
Engineering, and Design (E&D)	\$ 8,200,000
Construction Management (S&A)	\$ 21,100,000
Monitoring	\$ 2,300,000
Total Cost	\$ 286,300,000

3.1.11 Please replace Table MR 4-16 on page MR 4-35 and Table 11 on page Myrtle Grove – 39 in Attachment 5 with the one shown below. In the FPEIS, please replace Table 2-29 on page 2-121. The updated costs are presented in the original and revised formats for purposes of clarity.

Original Format

Medium Diversion with Dedicated Dredging at Myrtle Grove

FEDERAL AND NON-FEDERAL COST BREAKDOWN

(Oct 2004 Price Level)

Item	Federal	Non-Federal	Total
Decision Document (50%Fed-50%NFS)	\$ 4,000,000	\$ 4,000,000	\$ 8,000,000
PED (65%Fed-35%NFS)	\$ 9,600,000	\$ 5,100,000	\$ 14,700,000
LERR&D (100% NFS)	\$ -	\$ 85,100,000	\$ 85,100,000
Ecosystem Restoration (65%Fed-35%NFS)	\$ 147,000,000	\$ (65,000)	\$ 146,900,000
Engineering and Design (E&D) (65%Fed-35%NFS)	\$ 6,330,000	\$ 1,870,000	\$ 8,200,000
Supervision and Administration (S&A) (65%Fed-35%NFS)	\$ 16,500,000	\$ 4,600,000	\$ 21,100,000
Monitoring (65%Fed-35%NFS)	\$ 1,500,000	\$ 800,000	\$ 2,300,000
Total Construction	\$ 180,900,000	\$ 97,400,000	\$ 278,300,000
TOTAL COST	\$ 184,900,000	\$ 101,400,000	\$ 286,300,000

Revised Format

Medium Diversion with Dedicated Dredging at Myrtle Grove

FEDERAL AND NON-FEDERAL COST BREAKDOWN

(Oct 2004 Price Level)

Item	Federal	Non-Federal	Total
Decision Document (Percent)	\$ 4,000,000 50%	\$ 4,000,000 50%	\$ 8,000,000
PED (Percent)	\$ 9,555,000 65%	\$ 5,145,000 35%	\$ 14,700,000
LERR&D (100% NFS)	\$ -	\$ 85,100,000	\$ 85,100,000
Ecosystem Restoration (E&D), (S&A), (Monitoring)	\$ 171,300,000	\$ 7,200,000	\$ 178,500,000
subtotal (Percent)	\$ 171,300,000 65%	\$ 92,300,000 35%	\$ 263,600,000
Total Construction	\$ 180,900,000	\$ 97,400,000	\$ 278,300,000
TOTAL COST	\$ 184,900,000	\$ 101,400,000	\$ 286,300,000

3.1.12 Please replace Table MR 4-18 on page MR 4-77 and Table 6-4 on page MR 6-9 with the table shown below. In the FPEIS, please replace Table 7-4 on page 7-13.

**Summary of LCA Plan Federal and Non-Federal
Cost Share Responsibilities (October 2004 Price Levels)**

Summary of LCA Plan Federal and Non-Federal		
Feasibility-level Decision and NEPA Documentation Cost:		
Federal (50%)	\$	15,500,000
Non-Federal (50%)	\$	15,500,000
Construction Cost (Including PED, E&D, S&A, Monitoring):		
Federal (65%)	\$	538,400,000
Non-Federal (35%):		
LERRD*	\$	183,600,000
Cash	\$	106,300,000
Total	\$	859,300,000
*For the conditionally authorized feature, Small Diversion at Hope Canal, LERR&D exceeded 35% of the total project cost by \$26,877,238, which is reimbursed to the non-federal sponsor.		
Authorized Features:		
Science & Technology Program (10 year program)		
Federal (65%)	\$	65,000,000
Non-Federal (35%)	\$	35,000,000
Demonstration Program (10 year program)		
Federal (65%)	\$	61,750,000
Non-Federal (35%)	\$	33,250,000
Beneficial Use of Dredged Material Program		
Federal (75%)	\$	75,000,000
Non-Federal (25%)	\$	25,000,000
Total	\$	295,000,000
Conventionally Authorized Features:		
Feasibility-level Decision and NEPA Documentation Cost:		
Federal (50%)	\$	19,500,000
Non-Federal (50%)	\$	19,500,000
Construction Cost (Including PED, E&D, S&A, Monitoring):		
Federal (65%)	\$	473,300,000
Non-Federal (35%)	\$	44,870,000
LERRD	\$	210,000,000
Cash		
Total	\$	767,200,000
Currently Authorized Investigations		
Decision Documents for Demonstration Projects		
Federal (50%)	\$	2,500,000
Non-Federal (50%)	\$	2,500,000
Investigations of Modifications of Existing Structures		
Federal (50%)	\$	5,000,000
Non-Federal (50%)	\$	5,000,000
Large-scale, Long-term Studies for Future Congressional Authorization:		
Federal (50%)	\$	30,000,000
Non-Federal (50%)	\$	30,000,000
Total	\$	75,000,000

3.1.13 Please replace Table MR 4-19 on page MR 4-78 with the one shown below.

**Detailed LCA Plan Cost Sharing Distribution
(Oct 2004 Price Levels)**

Item	Federal Share	Non-Fed Share	Total Cost
Feasibility-level Decision and NEPA Documentation - (50/50)	\$ 15,500,000	\$ 15,500,000	\$ 31,000,000
Preconstruction, Engineering, and Design (PED) - (65/35)	\$ 23,600,000	\$ 12,700,000	\$ 36,300,000
LERRD - (0/100)	\$ -	\$ 183,600,000	\$ 183,600,000
Ecosystem Restoration (E&D), (S&A), (Monitoring) - (65/35)	\$ 514,800,000	\$ 93,600,000	\$ 608,400,000
Conditionally Authorized Subtotal	\$ 538,400,000	\$ 289,900,000	\$ 828,300,000
Science & Technology Program (10 year Program) - (65/35)	\$ 65,000,000	\$ 35,000,000	\$ 100,000,000
Demonstration Program (10 year Program) - (65/35)	\$ 61,750,000	\$ 33,250,000	\$ 95,000,000
Beneficial Use of Dredged Material Program - (75/25)	\$ 75,000,000	\$ 25,000,000	\$ 100,000,000
Conditionally Authorized Subtotal	\$ 201,750,000	\$ 93,250,000	\$ 295,000,000
Total Conditionally/Programmatically Authorized Subtotal	\$ 740,150,000	\$ 383,150,000	\$ 1,123,300,000
Feasibility-level Decision and NEPA Documentation - (50/50)	\$ 19,500,000	\$ 19,500,000	\$ 39,000,000
Preconstruction, Engineering, and Design (PED) - (65/35)	\$ 24,000,000	\$ 13,000,000	\$ 37,000,000
LERRD - (0/100)	\$ -	\$ 210,000,000	\$ 210,000,000
Ecosystem Restoration (E&D), (S&A), (Monitoring) - (65/35)	\$ 449,300,000	\$ 31,870,000	\$ 481,200,000
Conventionally Authorized Features Subtotal	\$ 473,300,000	\$ 254,900,000	\$ 728,200,000
Demonstration Program Decision Documents- (50/50)	\$ 2,500,000	\$ 2,500,000	\$ 5,000,000
Investigations of Modifications of Existing Structures - (50/50)	\$ 5,000,000	\$ 5,000,000	\$ 10,000,000
Large-scale Studies - (50/50)	\$ 30,000,000	\$ 30,000,000	\$ 60,000,000
Currently Authorized Investigations Subtotal (Includes near-term critical feature Decision Document costs presented above)	\$ 72,500,000	\$ 72,500,000	\$ 145,000,000
Total LCA Plan Cost Share	\$ 1,285,950,000	\$ 710,550,000	\$ 1,996,500,000

*For the conditionally authorized feature, Small Diversion at Hope Canal, LERR&D exceeded 35% of the total project cost by \$26,877,238, which is reimbursed to the non-federal sponsor.

4.0 ATTACHMENTS

4.1 Attachment 3 – Non-Federal Sponsor Financial Capability

4.1.1 The following text is to be inserted after the last paragraph on Attachment 3, Non-Federal Sponsor Financial Capability, on page 3-1.

State of Louisiana Funding Sources to Support Implementation of LCA Recommended Plan

Potential State funds that may be utilized to match Federal funds received for implementation of the Louisiana Coastal Area Ecosystem Restoration Study (LCA Study) are described below. This summary only describes potential sources of funding, and does not attempt to forecast funding that may become available.

The most secure source of State funds for coastal restoration activities is the Wetlands Conservation and Restoration Trust Fund (Wetlands Trust Fund) which was statutorily dedicated with the passage of Act 6 of the Second Extraordinary Session of the 1989 Louisiana Legislature (R.S. 49:213 et seq.). This act also created the Coastal Wetlands Conservation and Restoration Authority (Authority) within the Office of the Governor and the Office of Coastal Restoration and Management (OCRM) within the Department of Natural Resources (DNR). Under current funding scenarios, a minimum of \$5 million and a maximum of \$25 million from mineral revenues may be realized in the Wetlands Trust Fund in any given year. At least \$15

million has been deposited into the Trust Fund most years, and the maximum of \$25 million has been deposited into the Fund in each of the last 4 years. This is a direct result of the passage of RS 49:213.7 in 1999, which annually dedicates at least 2% of mineral revenues to the Wetlands Trust Fund. Because of this law, it is anticipated that maximum deposits to the Wetlands Trust Fund will be realized into future.

Additional potential sources of funding are from the State General Fund and the Capital Outlay Fund. The purpose of the Capital Outlay Fund is to provide funds for project construction, and has typically been used to provide State match for Federal Programs. Although these two funding sources have not been a normal part of DNR's annual funding, extraordinary requests for the purpose of matching specific Federal projects could be made.

Finally, Louisiana voters resoundingly passed three constitutional amendments during the October 2003 ballot that provide invaluable tools for helping Louisiana restore its wetlands. Two of the amendments increased the opportunities for revenues to be dedicated to coastal restoration activities, and the third limits the State's liability for compensation for damages associated with coastal restoration activities. In particular, amendment #1 authorizes the first \$35 million in deposits to the Mineral Audit and Settlement Fund to be designated to the Wetlands Trust Fund and raises the unobligated balance allowed in the Wetlands Trust Fund from \$40 million to \$500 million. Based on mineral settlement deposit records, an average of \$17.5 million would have been obligated to the Wetlands Trust Fund in each of the past 6 years if this amendment had been in place. Although it is not possible to predict at this time the full amount by which revenues will increase as a result of these amendments, their passage demonstrates the general State-wide support for coastal restoration.

Based on projected annual costs of the LCA Plan provided by USACE-MVN, the State is committed to matching Federal funds projected for FY05 using monies in the Wetlands Trust Fund. In order to meet costs projected for years after FY05, it will be necessary for the State to submit a request for additional funds, from the State General Fund and/or Capital Outlay, to the Legislature as part of its annual budget proposal.

4.2 Attachment 5 – Additional Information on Five Near-Term Critical Restoration Features for Conditional Authorization

4.2.1 The following text is to be inserted after the fourth paragraph, on page Barrier Island – 24.

Initial construction based on the use of high quality sand from offshore shoals results in an elevated unit cost for delivery of material to the shoreline. Subsequent recharging of the volume of material in the beach face of the shoreline of the Caminada Headland reach will require placement of approximately 2 million cubic yards of sand at ten year intervals. This shoreline maintenance will utilize the near-shore recovery of the high material eroded from the beach face after initial restoration. The erosion of this material is expected to result in its deposition in ebb tidal deltas in the vicinity of the shoreline reach. This material can then be recovered from these much closer sources for maintenance. In addition, the natural down drift movement of the material along the shoreline means that it should not be necessary to place material along the entire length of the shoreline reach in a maintenance cycle. It can be noted from the estimates

for the Shell Island shoreline reach, which was based on the use of near-shore borrow sites in the vicinity, that unit costs are significantly reduce by the proximity of the material source.

5.0 Miscellaneous Items

5.1 Editorial Information

- 5.1.1** The term for the LCA Plan component “Programmatic Authorization for the Investigation of Modifications of Existing Structures” will be changed to read “Investigations of Modifications of Existing Structures” throughout the LCA Study Report and Final Programmatic Environmental Impact Statement documents. The following list represents all such locations identified in the Executive Summary, Main Report and its Attachments.

(Locations where this correction applies)

<u>Document Location</u>	<u>Page</u>
Executive Summary	vii
Executive Summary	xii
Table of Contents	xxv
Section 1.3	MR 1 – 5
Section 4.2.1	MR 4 – 6
Section 4.2.1	MR 4 - 7
Section 4.2.1, Table MR 4-3a	MR 4 – 9
Section 4.2.8	MR 4 – 55
Section 6.0, number 5	MR 6 – 4
Section 6.0, Table MR 6-2a	MR 6 – 7
Notice of Final Study Report & PEIS	page 5, although document is not numbered

- 5.1.2** Volume 5 of the LCA Ecosystem Restoration Study Report, containing Appendix E, Plan Formulation, is available at the New Orleans District Office of the U.S. Army Corps of Engineers. A copy can be obtained through the point of contact provided at the bottom of this page.