CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

This chapter first presents areas of controversy and unresolved issues, followed by the conclusions and recommendations for the **Recommended Plan – the LCA Plan**.

7.1 AREAS OF CONTROVERSY AND UNRESOLVED ISSUES

1. Conflict concerning the operation of the Mississippi River Gulf Outlet (MRGO).

The Mississippi River Gulf Outlet (MRGO), a channel connecting the Gulf of Mexico to the City of New Orleans, was completed in 1965 to provide a shorter, safer, and more efficient passage to New Orleans that would simultaneously boost the economy of St. Bernard Parish. Since the construction and operation of the MRGO land loss, soil erosion, habitat modification, and wildlife and fisheries losses have occurred in the surrounding area. Concerned citizens propose to "close" the MRGO, which would prohibit oceanic vessels with a draft of more than 12 feet from utilizing the canal. Along with eliminating deep draft vessels, the initial proposals call for water control structures including floodgates, locks, weirs and sills to be strategically built along the MRGO. The goal of these structures is to reduce water influx into the marshes and bayous from the MRGO channel, thus reducing the potential for storm surges and saltwater intrusion. Navigation stakeholders do not necessarily oppose the closure of the MRGO; however, they believe closure should be synchronized with construction of a new lock at the Inner Harbor Navigation Canal (IHNC) so commerce will not be disrupted. To resolve this conflict, the USACE/MVN is currently performing an economic analysis of the channel's efficiency. Residents are very concerned that this study will not lead to closure or significant modification of the MRGO.

2. Public concern that litigation from parties negatively impacted by restoration projects will make restoration prohibitively expensive.

Elements of the public expressed concern that restoration efforts, particularly projects that would involve freshwater diversions, would affect existing oyster beds via lowering salinity levels, thereby creating a situation where excessive compensation for potentially affected oyster leases would be necessary. As noted in Chapter 4 of the LCA main report, if oyster leases will be adversely impacted by a project, then such leases will be acquired and just compensation will be made. It is anticipated that this will reduce the potential liabilities in the future.

3. Concern about the priority of certain restoration projects.

- *Demand by Terrebonne and Barataria Basin residents for the immediate restoration of the Barataria-Terrebonne Estuary before other regions of the coastal ecosystem.*

Many residents of Terrebonne and Barataria Basins have expressed scoping concerns that this area has suffered the greatest land lost and ecological degradation and therefore should have

immediate restoration efforts directed to address these problems. The Terrebonne and Barataria Basins are losing coastal wetlands more rapidly than anywhere else in Louisiana. Since these basins are in such dire need, there is strong public sentiment that these areas should be addressed first. Projects with considerable public support include the Bayou Lafourche reintroduction and the Third Delta Conveyance channel.

- *Public support for the construction of restoration projects in areas that will maximize the benefits to society, culture, and the regional economy.*

Nearly 2 million Louisiana residents live in the coastal zone, and the culture and socioeconomic structure of the population has evolved to depend on the presence and productivity of the wetlands. In general, the public is supportive of coastal restoration, but request project construction in areas that will maximize the benefit to Louisiana citizens. Restoration projects that will prevent flooding, storm surge, infrastructure damage, property damage, and damage to commercial and recreational fisheries are most desirable. In addition, the public wants restoration projects to coordinate with flood control projects, navigation activities, and other activities that preserve the local economy. Projects in isolated areas, with limited direct benefit for Louisiana residents are generally not supported by the public.

- *Public concern for additional salinity controls in the Chenier Plain and inclusion of additional restoration features for this subprovince in the implemented LCA Plan.*

Because of its distance from a major river, restoration opportunities in the Chenier Plain are hampered by the limited availability of "excess" freshwater and sediment. Thus, restoration projects constructed in this subprovince have attempted to capitalize on this limited excess freshwater through salinity control and hydrologic restoration measures. There is a great deal of public support for continued construction of such projects, as the belief is that they are effective means of combating saltwater intrusion and land loss in this region. However, members of the National Technical Review Committee (NTRC) as well as many other researchers and managers are concerned that such measures do not fully address the problem, and will not provide long-term sustainability in this region. Data indicate that the excess freshwater is very limited and is not available at times of the year when salinities are highest. Additionally, subsidence is not sufficiently offset using these measures, as they provide for very limited sediment redistribution. Fisheries access within and through this region is also hampered by the construction of these structures, creating another stress on valuable natural resources. To resolve this issue, the LCA Plan includes the Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study, in order to provide managers with the information needed to formulate the best restoration plan for Subprovince 4.

4. Concern with inaction and perceived lack of urgency with respect to restoration.

- *Public support for comprehensive, long-term restoration efforts beyond near-term restoration efforts.*

Members of the public expressed concern that the restoration of the Louisiana coastal ecosystem must include a long-term, comprehensive approach and commitment to significantly reverse the

current trend of land loss and ecosystem degradation. While many members of the public acknowledged the need for a "near-term" effort, as embodied by the proposed LCA Plan, the majority viewed such an effort only as the initial step of the overall Louisiana coastal ecosystem restoration effort. Although the model results indicate that the LCA Plan would offset roughly 70 percent of the projected land loss in the future significant need still exists to offset the past loss of approximately 1.2 million acres and subsequent reduction in overall ecosystem quality.

Through meetings, the public has been informed of Federal guidance to focus on near-term restoration measures. The public was involved in the formulation of a comprehensive long-term restoration program and is certain a comprehensive program is the key to successful restoration. Many projects with considerable public support, including the restoration of the Bayou Chevreuil reef and additional salinity controls and other features in the Chenier Plain cannot be implemented in the near-term. However, the public feels these projects are essential to the restoration of coastal Louisiana; and consequently, they request a substantial long-term commitment from the Federal Government.

- *Public demand for the immediate construction of restoration actions versus requirements for conducting additional study of restoration problems.*

Members of the public expressed concern that the LCA Program's restoration effort will focus on the need for more studies rather than construction, operation and maintenance of restoration projects. In addition, it was expressed that immediate action should be taken to address Louisiana coastal ecosystem degradation issues, and that there are enough existing studies of the problem to warrant and justify that immediate action.

5. Concern about the necessity for sediment and water quality testing for each restoration feature.

Restoration measures call for riverine water and sediment to be redistributed into the surrounding coastal ecosystem. However, there is concern that these resources are sufficiently contaminated with nutrients and toxins such as mercury that restoration actions may intensify problems associated with eutrophication within the receiving areas, or compromise human health through consumption of contaminated fish and shellfish. Therefore, environmental groups have requested that sediment and water quality testing become a routine part of the project planning, engineering, and design phase. The Federal planning process requires that sediment and water quality be evaluated prior to implementation. If an issue arises during the evaluation, it will be addressed in a manner that is consistent with policy set by such acts as National Environmental Policy Act and Clean Water Act.

6. Conflicts may result when balancing economic interests with coastal restoration, especially when multiple stakeholders share common coastal resources.

- *Public concern that diversions will over-freshen receiving basins and concern that diversions could create widespread algae blooms in interior bays and lakes.*

Although there are many proponents of freshwater and sediment diversions, some members of the public are concerned about possible unintended consequences of implementing this type of restoration feature. Commercial and recreational fishermen are concerned that the change in the salinity regime often associated with a freshwater diversion, would cause loss or displacement of current recreational and commercially valuable fishery species. In addition to altering salinity, diversions may increase the amount of nutrients supplied to lakes and bays. Increased nutrients create the possibility of algal blooms, which are potentially detrimental to many aquatic organisms including fish, shellfish, and invertebrates, and may contribute to formation of hypoxic zones.

- *Concern with changing the existing operational scheme of the Old River Control Structure in regulating river flows in the Mississippi and Atchafalaya Rivers.*

Alterations in the operation of the Old River Control structure could increase sediment and freshwater in certain areas. The same concerns exist as with diversions. Change in the salinity regime often associated with a freshwater diversion, would cause loss of current recreational and commercially valuable fishery species. In addition to altering salinity, the features may increase the amount of nutrients supplied to a wetland. Increased nutrients create the possibility of algal blooms, which are potentially detrimental to many aquatic organisms including fish, shellfish, and invertebrates.

- *Concern that LCA Plan restoration features in Subprovince 3 would excessive amounts of water and sediment into the area.*

Overall, residents in Subprovince 3 are supportive of the proposed restoration features, however some citizens are concerned that an overabundance of water and sediment would result if the features are implemented. Concern is based on the thought that an excess of water and sediment could potentially displace many aquatic organisms, including fish, shellfish, and invertebrates. Additional concerns were raised that these sediments would accelerate infilling of the Atchafalaya Basin.

- *Real property rights issues including public access, mineral rights, and the perception that Federal monies would be spent to restore private properties.*

There are differing opinions regarding public access to restored areas and the extent to which mineral rights should be restricted within project areas. Also, some elements of the public are concerned that public monies will be used to benefit private land. Additional concerns were raised by private landowners that new rights for public access should not be created if private lands benefit from expenditures of public funds.

- *Concern with impediments to navigation and proposed re-routing of the Mississippi River and the Atchafalaya River Navigation channels.*

Members of the public, including Navigation interests, expressed concern that proposals to re-route portions of the Mississippi River and the Atchafalaya River Navigation channels could

result in delays and restricted access, which could interrupt the transport of goods and commodities into and out of various ports in the Louisiana coastal area.

- *The effect of coastal restoration on flood control projects*.

Some members of the public are concerned that funding coastal restoration projects will reduce available funding for vital flood protection projects. Although the LCA program intends to be a complement, not a substitute, for flood protection projects, Federal funding shortages are a concern with any large-scale project.

7.2 CONCLUSIONS AND RECOMMENDATIONS

As the District Engineer, I have considered the environmental, social, and economic effects, the engineering feasibility, and the comments received from other resource agencies and the public during this LCA Study effort and plan formulation. Based upon the sum of this information, I am recommending for implementation the LCA Ecosystem Restoration Plan (LCA Plan) that includes the highest priority actions from among those considered during plan formulation. I am convinced that the LCA Plan would begin to reverse the current trend of degradation of Louisiana's coastal ecosystem, support Nationally significant living resources, provide a sustainable and diverse array of fish and wildlife habitats, reduce nitrogen delivery to offshore gulf waters, provide infrastructure protection, and make progress towards a more sustainable ecosystem.

The LCA Plan I am recommending has seven components, with such modifications thereof as in the discretion of the Commander, HQUSACE, may be advisable.

A comparison of the cost effectiveness of the LCA Plan versus the final array of coastwide frameworks from which the LCA Plan was derived shows that the LCA Plan produces a lesser magnitude of output. However the efficiency of the LCA Plan is comparable to that of the larger frameworks in the final array. The comparison of the LCA Plan and the final array of coastwide frameworks is presented in **table 7-1**.

Table 7-1
LCA Plan and Final Array of Coastwide Frameworks

Plan	Subprovince Framework Codes	Average Annual Benefits ^	Average Annual Costs
LCA Plan		**2865**	**$ 55,921,000**
5610	S1M2, S2M3, S3R1	3094	171,479,754
5110	S1M2, S2R1, S3R1	3098	159,643,014
5410	S1M2, S2M1, S3R1	3110	185,416,495
10130	S1-3 N3*	3134	179,073,919
7610	S1E1, S2M3, S3R1	3166	193,662,284
7410	S1E1, S2M1, S3R1	3182	207,599,025
7002	S1E1, S2E3, S3M1	3202	542,511,742

*Plan developed by modification of plan 5110.
^Based on a composite of land building, habitat suitability, and nitrogen removal.

The ecologic model output for land building estimates that the LCA Plan would offset approximately 62.5 percent of the 462,000 acres projected to be lost within the Louisiana coastal area under the Future Without-Project condition. The estimated land building for Subprovince 1 exceeds projected Future Without-Project condition. In Subprovinces 2 and 3, the models estimated that the LCA Plan prevented almost 50 percent of the expected losses in each basin. These estimates do not include any projects in Subprovince 4.

The LCA Plan presents significant capacity for the prevention of future wetland loss with a smaller component of wetland building capacity. Although the LCA Plan acts significantly to reduce future loss of ecosystem structure and function, overall levels of environmental outputs will remain significantly reduced compared to historical conditions. This is especially true in Subprovince 4 where limited actions are recommended in the LCA Plan.

The cost of the five Near-Term Critical Restoration Features recommended for specific Congressional authorization, with implementation subject to Secretary of the Army review and approval of feasibility-level decision documents, (referred to as "Conditionally authorized" elsewhere in the report) is estimated at $864,065,000. The total cost of the Science and Technology Program, the Demonstration Projects, the Program for the Beneficial Use of Dredged Material, and Investigations of Modifications of Existing Structures is estimated at $310,000,000. The combined total cost of the previously stated components of the LCA Plan is estimated at $1,174,065,000. The total costs of Other Near-Term Critical Restoration Features Requiring Future Congressional Construction Authorization and Large-Scale and Long-Term Concepts Requiring Detailed Study is estimated to be $821,916,000. The total cost of the LCA Plan is estimated to be $1,995,981,000. Currently, the annual operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs are estimated at $7,883,000. OMRR&R costs are the responsibility of the non-Federal sponsor. These costs can be found in **table 7-3** through **table 7-5**.

7.2.1 The Seven Components of the LCA Plan

7.2.1.1 Near-Term Critical Restoration Features for Conditional Authorization

The LCA Plan includes 15 near-term critical restoration features (listed in **table 7-2a** and **7-2b**), five of which are recommended for specific Congressional authorization, with implementation subject to Secretary of the Army review and approval of feasibility-level decision documents. Implementation of these five restoration features would be subject to subsequent NEPA compliance, and appropriate decision documents. These decision documents would be constructed utilizing current policy and guidelines to provided a sound basis for decision makers at all levels. I recommend that Congress authorize implementation of the five near-term critical restoration features detailed below, with implementation subject to review and approval of the decision documents by the Secretary of the Army.

Studies or design of the five near-term features have been advanced to a state of readiness that suggest the feasibility-level decision documents can be completed prior to the next WRDA. In

addition, initial analysis indicates that these five features address the most critical ecological needs of the coastal area in locations where delaying action would result in a "loss of opportunity" to achieve restoration and/or much greater restoration costs. These five critical near-term features present a range of effects essential for success in restoring the Louisiana coast. The benefits provided by these features include: sustainable reintroduction of riverine resources; rebuilding of wetlands in areas at high risk for future loss, the preservation and maintenance of critical coastal geomorphic structures; preservation of critical areas within the coastal ecosystem; and, the opportunity to begin to identify and evaluate potential long-term solutions. Based on a body of work both preceding and including this study effort, the PDT produced an estimate of average annual costs and benefits for these five features. This information shows that average annual environmental output for these five authorized features would be on the order of 22,000 habitat units at an average annualized cost of $2,700 per unit provided.

The five near-term critical restoration features recommended for specific Congressional authorization, with implementation subject to Secretary of the Army review and approval of feasibility-level decision documents are:

- MRGO Environmental Restoration Features
- Small Diversion at Hope Canal [1]
- Barataria Basin Barrier Shoreline Restoration
- Small Bayou Lafourche Reintroduction [1]
- Medium Diversion with Dedicated Dredging at Myrtle Grove [1]

7.2.1.2 Science & Technology (S&T) Program

The District recommends that the LCA S&T Program be programmatically authorized and funded at an amount not to exceed $100 million over the initial 10 years of the LCA Program. This S&T Program would support all facets of program implementation by providing for acquisition of data, developing analytic tools, and providing recommendations to the LCA Program Manager within the adaptive management framework. Major benefits of the S&T Program would be reduced scientific and technological uncertainties and optimized attainment of LCA Program restoration objectives.

7.2.1.3 Science and Technology Program Demonstration Projects

The District recommends that demonstration projects recommended by the S&T Program be programmatically authorized, with implementation subject to Secretary of the Army review and approval of feasibility-level decision documents, and funded as a construction item at an amount not to exceed $100 million over 10 years, including a maximum cost of $25 million per project. Demonstration projects would serve to reduce critical uncertainties and provide valuable lessons learned to improve overall program performance. The District recommends that Congress authorize implementation of the $100 million demonstration program subject to review and

[1] Diversion / reintroduction sizes: Small diversion: 1000 cfs - 5000 cfs; Medium diversion: 5001 cfs - 15000 cfs; Large diversion - > 15000 cfs

approval of individual project feasibility-level decision documents by the Secretary of the Army. In addition to standard decision document information, the demonstration project documents would address:

- Major scientific or technological uncertainties to be resolved; and
- A monitoring and assessment plan to ensure that the demonstration projects would provide results that contribute to overall LCA Program effectiveness.

The purpose of the recommended LCA S&T Program demonstration projects is to resolve critical areas of scientific, technical, or engineering uncertainty while providing meaningful restoration benefits whenever possible. The types of uncertainty that are best resolved through implementation of appropriately scaled demonstration projects are the "Type 2" uncertainties introduced in section 3.1.1. After design, construction, monitoring, and assessment of individual demonstration projects, the LCA program will leverage the lessons learned to improve the planning, design, and implementation of other LCA restoration projects. Beyond serving to resolve the list of "Type 2" uncertainties detailed in this report, demonstration projects may be necessary to address uncertainties discovered in the course of individual project implementation or during the study of large-scale and long-term restoration concepts.

7.2.1.4 Programmatic Authorization for the Beneficial Use of Dredged Material

The District recommends that Congress authorize $100 million over the initial 10 years of the LCA Program for execution of additional beneficial use of dredged material projects within the Louisiana coastal area. Based on the requested funds and a 10-year period of implementation, it is expected that this beneficial use program could contribute to the attainment of approximately 21,000 acres of newly created wetlands. I recommend that this program follow guidelines similar to the Section 204 Continuing Authorities beneficial use program that provides authority for the USACE to restore, protect, and create aquatic and wetland habitats in connection with construction or maintenance dredging of an authorized project.

7.2.1.5 Programmatic Authorization for Investigations of Modifications of Existing Structures

The District recommends that Congress authorize $10 million over the initial 10 years of the program for use in studies of potential modification or rehabilitation of existing water resources structures and/or their operation management plans for the purpose of contributing to the attainment of LCA Plan restoration objectives. This authority would improve environmental performance within a project purpose by authorizing the use of LCA funds.

7.2.1.6 Near-Term Critical Restoration Features Recommended for Study and Future Congressional Authorization

In addition to the five critical near-term restoration features previously recommended and listed for Congressional authorization, with implementation subject to Secretary of the Army review and approval of feasibility-level decision documents, the District recommends approval of

funding for full development of feasibility reports for the other 10 LCA Plan features, for which the total study cost is $47,529,000. These features would be Congressionally authorized via future WRDA. The 10 features are:

- Multi-purpose operation of the Houma Navigation Canal Lock
- Terrebonne Basin barrier Shoreline Restoration
- Maintain land bridge between Caillou Lake and Gulf of Mexico
- Small diversion at Convent/Blind River
- Increase Amite River Diversion Canal influence by Gapping Banks
- Medium Diversion at White's Ditch
- Stabilize Gulf Shoreline at Point Au Fer Island
- Convey Atchafalaya River water to northern Terrebonne marshes
- Modification of Caernarvon Diversion
- Modification of Davis Pond Diversion

7.2.1.7 Large-Scale and Long-Term Concepts Requiring Detailed Study

The District recommends development of studies that evaluate large-scale, long-term coastal restoration concepts. Investigations of the following six large-scale, long-term concepts will fully determine their potential for achieving restoration objectives beyond the critical needs, near-term focus of other LCA Plan components. Upon completion of the studies, recommendations may be forwarded to Congress for consideration of authorization. The estimated cost of these studies is $60 million

- Mississippi River Hydrodynamic Study
- Mississippi River Delta Management Study
- Third Delta Study
- Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study
- Acadiana Bays Estuarine Restoration Study
- Upper Atchafalaya Basin Study

These studies and their resultant projects, if authorized and constructed, could significantly restore environmental conditions that existed prior to large-scale alteration of the natural system.

COST SHARING AND AGENCY RESPONSIBILITIES

The District further recommends Federal and Non-Federal Sponsor responsibilities and cost sharing requirements as set forth in Section 4.6 DIVISION OF RESPONSIBILITIES of the Main Report

The recommendations contained herein reflect the information available at this time and current Department of the Army policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a National Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the sponsor, the state, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity for further comment.

Table 7-2a. Components of the LCA Plan.

Recommended for Conditional or Programmatic Authorization
1. Near-term Critical Restoration Features • MRGO Environmental Restoration Features • Small Diversion at Hope Canal • Barataria Basin Barrier Shoreline Restoration, Caminada Headland, Shell Island • Small Bayou Lafourche Reintroduction • Medium Diversion with Dedicated Dredging at Myrtle Grove 2. S&T Program 3. Initial S&T Program Demonstration Projects • Marsh Restoration and/or Creation Using Non-Native Sediment • Marsh Restoration Using Long-Distance Conveyance of Sediment • Canal Restoration Using Different Methods • Shoreline Erosion Prevention Using Different Methods • Barrier Island Restoration Using Offshore and Riverine Sources of Sediment 4. Programmatic Authorization for the Beneficial Use of Dredged Material 5. Programmatic Authorization to Initiate Studies of Modifications to Existing Water Control Structures

Table 7-2b. Components of the LCA Plan.

Recommended for Approval With Future Authorization ***(Implemented with Congressional Approval Authority)***
6. Other Near-term Critical Restoration Features • Multi-purpose Operation of Houma Navigation Canal Lock • Terrebonne Basin Barrier Shoreline Restoration • Maintain Land Bridge between Caillou Lake and Gulf of Mexico • Small Diversion at Convent / Blind River • Increase Amite River Diversion Canal Influence by Gapping Banks • Medium Diversion at White's Ditch • Stabilize Gulf Shoreline at Point Au Fer Island • Convey Atchafalaya River water to Northern Terrebonne Marshes • Modification of Caernarvon Diversion • Modification of Davis Pond Diversion 7. Large-scale and Long-term Concepts Requiring Detailed Study • Mississippi River Hydrodynamic Study • Mississippi River Delta Management Study • Third Delta Study • Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study • Acadiana Bays Estuarine Restoration Feasibility Study • Upper Atchafalaya Basin Study

Table 7-3
LCA Plan Component Cost Estimates
(June 2004 Price Levels)

Item		Cost ($)
MRGO environmental restoration features		$ 80,000,000
Small diversion at Hope Canal		$ 10,645,000
Barataria Basin Barrier shoreline restoration		$ 181,000,000
Small Bayou Lafourche reintroduction		$ 75,280,000
Medium diversion with dedicated dredging at Myrtle Grove		$ 142,920,000
	SUBTOTAL	$ 489,845,000
LERRD		$ 178,619,000
First Cost	SUBTOTAL	$ 668,464,000
Feasibility-Level Decision Documents		$ 54,673,000
Preconstruction, Engineering, and Design (PED)		$ 36,252,000
Engineering and Design (E&D)		$ 29,018,000
Supervision and Administration (S&A)		$ 68,973,000
Project Monitoring		$ 6,685,000
Conditionally Authorized Cost	SUBTOTAL	**$ 864,065,000**
Science & Technology Program Cost (10 year Program)		**$ 100,000,000**
Demonstration Program Cost (10 year Program)*		**$ 100,000,000**
Beneficial Use of Dredged Material Program*		**$ 100,000,000**
Investigations of Modifications of Existing Structures		**$ 10,000,000**
Total Authorized LCA Plan Cost		**$ 1,174,065,000**
Multi-purpose operation of Houma Navigation Canal (HNC) Lock [#]		$ -
Terrebonne Basin Barrier shoreline restoration		$ 84,850,000
Maintain Land Bridge between Caillou Lake and Gulf of Mexico		$ 41,000,000
Small diversion at Convent / Blind River.		$ 28,564,000
Increase Amite River Diversion Canal influence by gapping banks		$ 2,855,000
Medium diversion at White's Ditch		$ 35,200,000
Stabilize Gulf shoreline at Point Au Fer Island		$ 32,000,000
Convey Atchafalaya River Water to Northern Terrebonne marshes		$ 132,200,000
Modification of Caernarvon diversion		$ 1,800,000
Modification of Davis Pond diversion		$ 1,800,000
	SUBTOTAL	$ 360,269,000
LERRD		$ 208,100,000
First Cost	SUBTOTAL	$ 568,369,000
Feasibility Level Decision Documents		$ 47,529,000
Preconstruction, Engineering, and Design (PED)		$ 36,027,000
Engineering & Design (E&D)		$ 45,635,000
Supervision & Administration (S&A)		$ 58,673,000
Project Monitoring		$ 5,683,000
Approved Projects Requiring Future Congressional Authorization for Construction		**$ 761,916,000**
Mississippi River Hydrodynamic Study		$ 10,250,000
Mississippi River Delta Management Study		$ 15,350,000
Third Delta Study		$ 15,290,000
Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study		$ 12,000,000
Acadiana Bays Estuarine Restoration Feasibility Study		$ 7,110,000
Upper Atchafalaya Basin Study^		$ -
Large-scale and Long Term Studies Cost	SUBTOTAL	**$ 60,000,000**
Total LCA Restoration Plan Cost		**$ 1,995,981,000**

*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

Table 7-4. Summary of LCA Plan Federal and Non-Federal Cost Share Responsibilities (June 2004 Price Levels)

Conditionally Authorized Features:		
Feasibility-level Decision and NEPA Documentation Cost:		
Federal (50%)	$	27,336,500
Non-Federal (50%)	$	27,336,500
Subtotal	$	54,673,000
Construction Cost (Including PED, E&D, S&A, Monitoring):		
Federal (65%)	$	500,768,550
Non-Federal (35%):		
LERRD*	$	178,619,000
Cash	$	130,004,450
Subtotal	$	809,392,000
Total	**$**	**864,065,000**
*For the conditionally authorized feature, Small Diversion at Hope Canal, LERRD exceeded 35% of the total project cost by $25,336,250, which is reimbursed to the non-federal sponsor.		
Programmatically 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%)	$	65,000,000
Non-Federal (35%)	$	35,000,000
Beneficial Use of Dredge Material Program		
Federal (75%)	$	75,000,000
Non-Federal (25%)	$	25,000,000
Investigations of Modifications of Existing Structures		
Federal (50%)	$	5,000,000
Non-Federal (50%)	$	5,000,000
Total	**$**	**310,000,000**
Conventionally Authorized Features:		
Feasibility-level Decision and NEPA Documentation Cost:		
Federal (65%)	$	23,764,500
Non-Federal (35%)	$	23,764,500
Subtotal	$	47,529,000
Construction Cost (Including PED, E&D, S&A, Monitoring):		
Federal (65%)	$	464,351,550
Non-Federal (35%)		
LERRD	$	208,100,000
Cash	$	41,935,450
Subtotal	$	714,387,000
Total	**$**	**761,916,000**
Large-scale, Long-term Studies for Future Congressional Authorization:		
Federal (50%)	$	30,000,000
Non-Federal (50%)	$	30,000,000
Total	**$**	**60,000,000**

Table 7-5
Average Annual O&M Cost Estimates for the LCA Plan Features
(June 2004 Price Levels)

Item		O&M Cost ($/yr)
MRGO Environmental Restoration Features	$	711,000
Small Diversion at Hope Canal	$	120,000
Barataria Basin Barrier Shoreline Restoration	$	500,000
Small Bayou Lafourche Reintroduction	$	1,400,000
Medium Diversion with Dedicated Dredging at Myrtle Grove	$	120,000
Total Conditionally Authorized Cost	$	2,851,000
Multi-purpose Operation of Houma Navigation Canal Lock	$	-
Terrebonne Basin Barrier Shoreline Restoration E. Timbalier, Isle Dernieres	$	2,760,000
Maintain Land Bridge between Caillou Lake and Gulf of Mexico	$	745,000
Small diversion at Convent / Blind River.	$	120,000
Increase Amite River Diversion Canal Influence by Gapping Banks	$	-
Medium Diversion at White's Ditch	$	120,000
Stabilize Gulf Shoreline at Point Au Fer Island	$	644,000
Convey Atchafalaya River Water to Northern Terrebonne Marshes	$	643,000
Total Future Congressionally Authorized Cost	$	5,032,000
Total Cost	**$**	**7,883,000**