DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:
CECW-MVD (1105-2-10a)

31 JAN 2005

SUBJECT: Louisiana Coastal Area, Louisiana, Ecosystem Restoration

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on ecosystem restoration for the Louisiana Coastal Area (LCA). It is accompanied by the report of the district and division engineers. These reports are in partial response to authority contained in resolutions adopted by the Committees on Public Works of the House of Representatives and United States Senate, dated April 19, 1967 and October 19, 1967, respectively. The resolutions requested a review of the reports of the Chief of Engineers to determine the advisability of improvements or modifications to existing improvements in the coastal area of Louisiana in the interest of hurricane protection, prevention of saltwater intrusion, preservation of fish and wildlife, prevention of erosion, and related water resources purposes. Investigations and preconstruction engineering and design activities for the LCA will continue under the authority provided by the resolutions cited above.

2. The reporting officers recommend approval of the LCA Ecosystem Restoration Program to reduce the severe wetland losses occurring along coastal Louisiana. In arriving at this recommendation, the reporting officers worked closely with other Federal agencies, the State of Louisiana, environmental groups, stakeholders, and interested parties to ensure that the program recommended for implementation best meets restoration objectives. The LCA Ecosystem Restoration Program addresses the most critical restoration needs and consists of various components that could commence implementation in the near term. The LCA Ecosystem Restoration Program includes components that the reporting officers recommend for authorization, related investigations that would continue under existing authorities, and elements that might be recommended for subsequent authorization by the investigations described herein. The LCA Ecosystem Restoration Program recommends 15 near-term features aimed at addressing the critical restoration needs. The components currently recommended for authorization include five critical near-term ecosystem restoration features, a demonstration program consisting of a series of demonstration projects, a beneficial use of dredged material program, and a science and technology program. The five critical near-term ecosystem restoration features, demonstration projects, and beneficial use of dredged material projects are all subject to the approval of feasibility level of detail decision documents by the Secretary of the Army. The analyses supporting the recommendations were based on the information and analytical tools available during the plan formulation and evaluation phase. The feasibility level of detail decision documents will identify specific sites, scales, and adaptive management measures, and will optimize features and outputs necessary to achieve the restoration objectives.

Site-specific analyses of the recommended features, demonstration projects, project modifications, and beneficial use of dredged material projects will be prepared to obtain approval by the Secretary of the Army. The following paragraphs describe the LCA Ecosystem Restoration Program components in greater detail.

3. Near-Term Critical Ecosystem Restoration Features. The reporting officers recommend authorization of five near-term critical ecosystem restoration features that have relatively advanced investigations and could be implemented expeditiously. Implementation of the five near-term critical ecosystem restoration features would be subject to approval of feasibility level of detail decision documents by the Secretary of the Army. The five near-term critical ecosystem restoration features include:

a. Mississippi River Gulf Outlet (MRGO) Environmental Restoration Feature. The recommended plan for the MRGO Environmental Restoration feature consists of the construction of rock breakwaters along the southern shoreline of Lake Borgne at an approximate elevation of 4.0 feet North American Vertical Datum (NAVD) for an approximate distance of 15 miles and the construction of rock breakwaters along the north bank of the MRGO at the same elevation an approximate distance of 23 miles. At October 2004 price levels, the estimated first cost is $105,300,000. The proposed feature would protect about 6,350 acres of critical wetlands that would otherwise be lost, regardless of whether or not the authorized channel depth of the MRGO is maintained. The proposed feature would prevent the accelerated loss of marshes, ridges, bayous, ponds, aquatic grass beds, and shorelines needed for the Lake Borgne, Lake Pontchartrain, and Breton Sound estuaries. It must be emphasized that a decision on whether to maintain the MRGO navigation channel as a deep draft-shipping route has not been made. A study that is addressing maintaining deep-draft navigation is currently underway and is scheduled for completion in Fiscal Year 2005. However, this study will not ultimately resolve the question of final disposition of the MRGO. Additional studies conducted within the context of LCA will holistically evaluate alternatives considering various water resources needs of the area, and make a recommendation on MRGO based on assessment of environmental and economic benefits and impacts. The MRGO Environmental Restoration Feature will not be implemented until the indicated studies are completed and a decision on the MRGO is made, or until it is demonstrated that implementation of the MRGO Environmental Restoration Feature is justified and warranted regardless of a decision whether or not to maintain deep-draft navigation on the MRGO.

b. Small Diversion at Hope Canal Feature. The recommended plan for the Small Diversion at Hope Canal feature consists of two 10-foot by 10-foot gated box culverts, a 100-foot by 100-foot receiving pond reinforced with riprap, and an outflow channel approximately 27,500 feet long that would extend from the receiving pond to U.S. Interstate 10. At October 2004 price levels, the estimated first cost is $68,600,000. The proposed feature would restore freshwater and sediment flows to the Maurepas Swamp necessary to regenerate cypress and tupelo trees and to restore productivity of 36,000 acres of critical cypress-tupelo swamp habitat.

c. Barataria Basin Barrier Shoreline Restoration Feature. The recommended plan for the Barataria Basin Barrier Shoreline Restoration feature consists of dredging and placing about 9 to 10 million cubic yards (mcy) of sand to create a dune approximately 6 feet high with a shoreward berm about 1,000 feet wide along 13 miles of Caminada Shoreline. Approximately 6 mcy of material would be pumped to create about 3,000 acres of marsh, and approximately 3.4 mcy of sand would be placed at Shell Island (west) to create about 139 acres of dune and about 74 acres of marsh. Approximately 6.6 mcy of sand would be placed at Shell Island (east) to create about 223 acres of dune/berm and about 191 acres of marsh. At October 2004 price levels, the estimated first cost is $242,600,000. The proposed feature would preserve the integrity of the western and central boundaries of Barataria Basin and protect the fragile inland marshes from encroachment by the Gulf of Mexico. It would provide a net increase of 640 acres of dune/berm habitat and 1,780 acres of saline marsh habitat at Caminada Headland and 147 acres of shoreline habitat on Shell Island.

d. Small Bayou Lafourche Reintroduction Feature. The recommended plan for the Small Bayou Lafourche Reintroduction feature would increase flows in the distributary to approximately 1,000 cubic feet per second (cfs) by upgrading the capacity of an existing pump and siphon facility to 340 cfs, constructing a new pump/siphon facility to pass 660 cfs, removing a fixed weir, dredging about 6.7 mcy from 55 miles of channel, constructing 3 miles of bank stabilization, installing and operating 5 monitoring stations, installing two adjustable weirs to control water levels, and constructing a sediment trap at Donaldsonville to control siltation. At October 2004 price levels, the estimated first cost is $133,500,000. The proposed feature would provide the freshwater, sediment and nutrients needed to reduce salinity and stimulate ecologic production for 49,000 acres of wetlands and 36,000 acres of estuarine waters. The restored production would counterbalance subsidence and prevent future wetland losses.

e. Medium Diversion at Myrtle Grove with Dedicated Dredging Feature. The recommended plan for Medium Diversion at Myrtle Grove with Dedicated Dredging feature consists of a 2,500 to 15,000 cfs gated, box culvert diversion structure with a 2,600-foot inflow channel and a 13,000-foot outflow channel. The plan also includes dedicated dredging and placing 2 mcy of material from the Mississippi River annually for 16 years to create marsh wetlands. At October 2004 price levels, the estimated first cost is $278,300,000. The proposed feature would provide up to 13,400 acres of new emergent marsh and prevent the loss of another 6,300 acres of marsh.

4. Science & Technology (S&T) Program. The reporting officers recommend a S&T Program to decrease scientific and engineering uncertainties and to further optimize efforts to achieve ecosystem restoration. The S&T Program would consist of data acquisition and analysis, monitoring, model development and application, and research. The program would improve the effectiveness of existing and proposed features. At October 2004 price levels, the S&T Program would cost an estimated $100,000,000. The sponsor could provide its share of the S&T Program through in-kind services.

5. Demonstration Program. The reporting officers recommend authorization of a program to evaluate the effectiveness of advances developed by the S&T Program in field applications. The need for each demonstration project would be identified through the S&T Program, and implementation would be subject to Secretary of the Army approval of feasibility level of detail decision documents. At October 2004 price levels, the first cost of the demonstration program is estimated at $95,000,000. Individual demonstration projects would be limited to a cost of $25 million each.

6. Beneficial Use of Dredged Material Program. The reporting officers recommend a program to place dredged material to build and nourish vital coastal wetlands. At October 2004 price levels, the estimated cost of the Beneficial Use of Dredged Material program is $100,000,000.

7. Related Investigations. The U.S. Army Corps of Engineers has sufficient authority to initiate a number of investigations that are recommended by the reporting officers as part of the overall LCA Ecosystem Restoration Program. The recommended investigations include the following:

a. Investigations of the Near-Term Critical Ecosystem Restoration Features Recommended for Authorization. The reporting officers recommend further investigations of each of the five near-term critical ecosystem restoration features cited above to better define and evaluate each feature and to provide a basis for the Secretary to approve proceeding with implementation. At October 2004 price levels, these investigations are estimated to cost a total of $31,000,000.

b. Investigations of Additional Near-Term Restoration Features. The reporting officers recommend further investigations of the following ten restoration features, in anticipation of potentially recommending the features for future authorization as part of the LCA Ecosystem Restoration Program. At October 2004 price levels, these investigations are estimated to cost $39,000,000. The investigations would be conducted under the existing authority cited above. These investigations include:

- Multi-purpose Operation of the Houma Canal Lock
- Terrebonne Basin Barrier-Shoreline Restorations
- Land Bridge between Caillou Lake and Gulf of Mexico
- Small Diversion at Convent/Blind River
- Amite River Diversion Canal
- Medium Diversion at White's Ditch
- Stabilization of Gulf Shoreline at Pointe Au Fer Island
- Atchafalaya River Conveyance to Northern Terrebonne Marshes
- Modification of Caernarvon Diversion
- Modification of Davis Pond Diversion

c. Investigations of Project Modifications. The reporting officers recommend a program to investigate the potential modification of existing water resources projects in order to further restore the Louisiana coastal ecosystem. The investigations would focus on improving the

environmental performance of existing projects. At October 2004 price levels, the estimated cost of this program is $10,000,000.

d. Investigations of Demonstration Projects. To support the demonstration program above, the reporting officers recommend investigations to further define, evaluate and recommend potential demonstration projects for implementation. The resulting decision documents would be provided to the Secretary of the Army for approval. At October 2004 price levels, the estimated cost of these investigations is $5,000,000.

e. Investigations of Other Large-Scale Concepts. The reporting officers recommend investigations of certain large-scale and long-term coastal restoration concepts that could potentially be recommended for future authorization beyond the near-term plan. While the Louisiana Coastal Areas study focused on near-term restoration features that could be implemented expeditiously, it is acknowledged that there are large-scale concepts that could provide significant long-term ecosystem restoration benefits. Investigations that are being initiated in Fiscal Year 2005, will address the need to reduce coastal wetland losses and possibly achieve a net restoration. 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 ecosystem. At October 2004 price levels, the estimated cost of these investigations is $60,000,000. The investigations include:

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

8. At October 2004 price levels, the estimated first cost of the components recommended for authorization is $1,123,300,000. The estimated first cost of the individual components recommended for authorization are summarized below in table 1.

Table 1
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Summary of Costs for the Components Recommended for Authorization
(October 2004 Price Levels)

Critical Restoration Features	
Mississippi River Gulf Outlet Environmental Restoration Feature	$ 105,300,000
Small Diversion at Hope Canal Feature	68,600,000
Barataria Basin Barrier Shoreline Restoration Feature	242,600,000
Small Bayou Lafourche Reintroduction Feature	133,500,000
Medium Diversion with Dedicated Dredging at Myrtle Grove Feature	278,300,000
Subtotal	$ 828,300,000
Science and Technology Program	100,000,000
Demonstration Program	95,000,000
Beneficial Use of Dredged Material Program	100,000,000
Total First Cost of the Authorization Request	$1,123,300,000

At October 2004 price levels, the estimated cost of the related investigations is $145,000,000 as shown in table 2. These investigations, performed under existing study authorities, would further address the advisability of implementing the five critical ecosystem restoration features, modifications of existing projects, demonstration projects, ten additional ecosystem restoration features, and six future large-scale features.

Table 2
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Summary of Costs for Related Investigations
(October 2004 Price Level)

Investigations of Features Recommended for Authorization	
MRGO Environmental Restoration Feature	$ 5,400,000
Small Diversion at Hope Canal Feature	3,600,000
Barataria Basin Barrier Shoreline Restoration Feature	6,000,000
Small Bayou Lafourche Reintroduction Feature	8,000,000
Medium Diversion with Dedicated Dredging at Myrtle Grove Feature	8,000,000
Subtotal	$ 31,000,000
Investigations of Features for Future Authorization	
Multipurpose Operation of Houma Navigation Lock*	$ -
Terrebonne Basin Barrier Shoreline Restoration	8,700,000
Land Bridge between Caillou Lake and the Gulf of Mexico	6,300,000
Small Diversion at Convent/Blind River	4,400,000
Amite River Diversion Canal Modification	500,000
Medium Diversion at White's Ditch	5,400,000
Gulf Shoreline at Point Au Fer Island	4,900,000
Convey Atchafalaya River Water to Northern Terrebonne Marshes	8,200,000
Modification of Caernarvon Diversion	300,000
Modification of Davis Pond Diversion	300,000
Subtotal	$ 39,000,000
Investigations of Modification of Existing Projects Program	$ 10,000,000
Investigations of Demonstration Projects	$ 5,000,000

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Table 2 (continued)
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Summary of Costs for Related Investigations
(October 2004 Price Level)

Investigations of Other Large Scale Concepts	
Acadiana Bays Estuarine Restoration Study	$ 7,100,000
Upper Atchafalaya Basin Study*	-
Chenier Plain Freshwater and Sediment Management and Allocation Reassessment Study	12,000,000
Mississippi River Delta Management Study	15,300,000
Mississippi River Hydrodynamic Study	10,300,000
Third Delta Study	15,300,000
Subtotal	$ 60,000,000
Total First Cost of Related Investigations (*Funded Separately)	$ 145,000,000

At October 2004 price levels, the preliminary estimated first cost of the ten additional features most likely to be recommended by the investigations is estimated to be $728,200,000 as shown in table 3.

Table 3
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Summary of Preliminary Costs for Features Anticipated for Future Authorization
(October 2004 Price Level)

Multipurpose Operation of Houma Navigation Lock	$ 18,100,000
Terrebonne Basin Barrier Shoreline Restoration	124,600,000
Land Bridge between Caillou Lake and the Gulf of Mexico	56,300,000
Small Diversion at Convent/Blind River	88,000,000
Amite River Diversion Canal Modification	5,600,000
Medium Diversion at White's Ditch	86,100,000
Gulf Shoreline at Point Au Fer Island	43,400,000
Convey Atchafalaya River Water to Northern Terrebonne Marshes	221,200,000
Modification of Caernarvon Diversion	20,700,000
Modification of Davis Pond Diversion	64,200,000
Total First Cost of Project Authorized in the Future	$ 728,200,000

At October 2004 price levels, the currently estimated overall first cost of the LCA Ecosystem Restoration Plan, which includes the components recommended for authorization, the related investigations and the ten additional future features, is $1,996,500,000 as shown in table 4.

Table 4
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Summary of All Costs for the Selected Plan (October 2004 Price Level)

Features and Programs in the Authorization Request	$ 1,123,300,000
Investigations Already Authorized	145,000,000
Features Anticipated for Future Authorization	728,200,000
Total First Cost of the LCA Program	$ 1,996,500,000

9. Consistent with existing law and Corps policy, the reporting officers recommend that the ecosystem restoration features be cost shared in accordance with the Water Resources Development Act of 1986 (WRDA), as amended by Section 210 of WRDA of 1996. Accordingly, ecosystem restoration features would be cost shared 65 percent Federal and 35 percent non-Federal. Additionally, the reporting officers recommend that in accordance with Section 204 of WRDA 1992, cost sharing of the beneficial use of dredged material program be cost shared 75 percent Federal and 25 percent non-Federal. Also, in accordance with Section 105 of WRDA 1986, as amended, investigations (feasibility level studies) would be cost shared 50 percent Federal and 50 percent non-Federal. Table 5 shows Federal and non-Federal costs of the various features of the LCA Ecosystem Restoration Program.

While the reporting officer's recommendations on cost sharing are, as indicated, consistent with law and policy on typical ecosystem restoration projects, the Louisiana Coastal Area is a very large and complex ecosystem influenced by both natural and a variety of man made factors. Effectively and efficiently restoring this vast national treasure will require the involvement and financing of the proposed restoration measures by the Corps, the State of Louisiana, other Federal agencies, and potentially private and corporate America. Accordingly, I recommend as part of the further investigation phase that the Corps, working with other Federal agencies, develop a cross-cutting budget for funding of the LCA Ecosystem Restoration Program. The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) has been very successful in implementing smaller scale coastal restoration measures. The cross-cutting budget development should consider incorporating CWPPRA projects for implementation under the LCA Ecosystem Restoration Program. And finally, the cross-cutting budget should also examine the allocation of project costs among the various Federal and non-Federal parties and interests involved in LCA restoration. The result of the cross-cutting budget could serve as the basis for the Corps and the Federal agencies to recommend an LCA Ecosystem Restoration Program-specific cost sharing formula for authorization by Congress.

10. Non-Federal Sponsor. The State of Louisiana Department of Natural Resources (LDNR) is the non-Federal cost-sharing sponsor for the recommended plan. The LDNR would fulfill all non-Federal sponsor responsibilities, including the operation, maintenance, repair, replacement and rehabilitation of the plan features.

Table 5
Louisiana Coastal Area, Louisiana, Ecosystem Restoration
Cost Sharing (October 2004 Price Level)

Item	Federal Cost*	Non-Federal Cost*	Total Cost
Authorization Request			
Conditionally Authorized Projects			
PED	$ 23,500,000	$ 12,800,000	$ 36,300,000
LERR&D	0	183,600,000	183,600,000
Ecosystem Restoration	514,800,000	93,600,000	608,400,000
Subtotal (65/35 percent)	$ 538,300,000	$ 290,000,000	$ 828,300,000
Science and Technology Program (65/35)	65,000,000	35,000,000	100,000,000
Demonstration Project Program (65/35)	61,750,000	33,250,000	95,000,000
Beneficial Use of Dredged Material (75/25)	75,000,000	25,000,000	100,000,000
Subtotal of Authorization Request	$ 740,050,000	$ 383,250,000	$ 1,123,300,000
Investigations (50/50 percent)			
Conditional Authorization Features	$ 15,500,000	$ 15,500,000	$ 31,000,000
Modifications of Existing Projects	5,000,000	5,000,000	10,000,000
Demonstration Projects	2,500,000	2,500,000	5,000,000
Features for Future Authorization	19,500,000	19,500,000	39,000,000
Other Large Scale Concepts	30,000,000	30,000,000	60,000,000
Subtotal of Related Investigations	$ 72,500,000	$ 72,500,000	$ 145,000,000
Future Authorization Projects (65/35 Percent)			
Multipurpose Operation of Houma Navigation Lock	$ 11,800,000	$6,300,000	$18,100,000
Terrebonne Basin Barrier Shoreline Restoration	81,000,000	43,600,000	124,600,000
Land Bridge between Caillou Lake and the Gulf of Mexico	36,600,000	19,700,000	56,300,000
Small Diversion at Convent/Blind River	57,200,000	30,800,000	88,000,000
Amite River Diversion Canal Modification	3,600,000	2,000,000	5,600,000
Medium Diversion at White's Ditch	56,000,000	30,100,000	86,100,000
Gulf Shoreline at Point Au Fer Island	28,200,000	15,200,000	43,400,000
Convey Atchafalaya River Water to Northern Terrebonne Marshes	143,800,000	77,400,000	221,200,000
Modification of Caernarvon Diversion	13,400,000	7,300,000	20,700,000
Modification of Davis Pond Diversion	41,700,000	22,500,000	64,200,000
Subtotal for Future Projects	$ 473,300,000	$ 254,900,000	$ 728,200,000
Total LCA Ecosystem Restoration	$1,285,850,000*	$ 710,650,000*	$1,996,500,000

* Indicated cost sharing is consistent with law and Corps policy. The result of the cross-cutting budget could serve as the basis for the Corps and the Federal agencies to recommend a cost sharing formula for authorization by Congress.

11. While the recommendations contained in the LCA report, as further modified herein, are based on our current understanding of the coastal Louisiana ecosystem and our knowledge of ecosystem restoration as a whole, proposed restorations efforts, including the critical restoration projects, the demonstration projects, as well as the S&T Program, will significantly advance our understanding of the LCA ecosystem. To ensure that LCA ecosystem restoration objectives are realized, monitoring and adaptive management must be a critical element of LCA projects. As we learn more about what restoration measures work best in the LCA from the various investigations, monitoring and adaptive management, and as well from improved knowledge base from the S&T Program, it will be critically important to reassess, as appropriate, the recommendations contained herein. I, therefore, recommend that the Corps provide a status report to Congress every 5 years on our assessment of the successes and proposed refinements to the LCA plan, as appropriate, to ensure that restoration of coastal Louisiana remains effective, focused, and generally supported by affected stakeholders.

12. 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 Ecosystem Restoration Program to restore coastal Louisiana will require the continued involvement and close coordination of the State of Louisiana and Federal agencies having development, coordination and implementation responsibilities, as well as the involvement of all stakeholders. Also key to the success of the LCA Ecosystem Restoration Program is the infusion of the best available science and engineering for the proposed development and implementation of restoration plans. Accordingly, the reporting officers recommend establishment of a Science and Technology (S&T) Program and an S&T Office to advise the LCA program manager throughout plan implementation. To maintain an appropriate level of independence, the S&T Office should be managed separately from the LCA restoration program. The S&T program director should be a Federal scientist/manager. The S&T program director would be supported by a team of experts in ecosystem restoration drawn from State and Federal agencies and academia. The S&T director would provide recommendations to the LCA program manager, but the LCA program manager would retain ultimate responsibility for decisions on management and implementation of all LCA restoration activities. Building on the successful Federal agency involvement to date, I further recommend the establishment of a Washington-level Federal agencies coordinating team consisting of senior level decision makers to integrate respective programs and ensure that they are complementary to the overall LCA restoration goals and objectives.

13. Washington level review indicates that the LCA Ecosystem Restoration Program recommended by the reporting officers is environmentally justified, technically sound, cost effective and socially acceptable. The LCA Ecosystem Restoration Program conforms with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other administration and legislative policies and guidelines. Also, the views of interested parties, including Federal, State and local agencies have been considered.

14. I concur in the findings, conclusions, and recommendation of the reporting officers. Accordingly, I recommend implementation of the LCA Ecosystem Restoration Program in accordance with the reporting officers' recommended plan with such modifications as in the

discretion of the Chief of Engineers may be advisable. The recommendation is subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, or changes in cost sharing based on the cross-cutting budget should Congress authorize a program, or project-specific cost sharing for the LCA Ecosystem Restoration Program. Accordingly, the non-Federal sponsor must agree with the following requirements prior to project implementation:

a. Provide a minimum of 50 percent of costs allocated to general investigations, studies, and feasibility-level decision documents;

b. Provide a minimum of 35 percent of total project costs allocated to ecosystem restoration/environmental protection project costs, including demonstration projects, and a minimum of 25 percent of total project costs allocated to beneficial use of dredged material, unless Congress authorizes a different cost sharing:

(1) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Federal Government, in consultation with the non-Federal sponsor, to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the project;

(2) Provide or pay to the Federal Government any additional funds needed to cover the cost of providing all retaining dikes, waste weirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, maintenance, repair, replacement, and rehabilitation of the project;

(3) Provide, during construction, any additional funds necessary to make its total contribution attributable to ecosystem restoration/environmental protection, including demonstration projects, equal to 35 percent of total project costs, and 25 percent of the total project costs allocated to beneficial use of dredged material, unless Congress authorizes a different cost sharing;

c. Provide 35 percent of the costs allocated to the Science and Technology Program, unless Congress authorizes a different cost sharing;

d. Provide the non-Federal share of that portion of the costs of mitigation and data recovery activities associated with historic preservation that are in excess of 1 percent of the total amount authorized to be appropriated for the project;

e. Do not use Federal funds from other Federal programs, including any non-Federal contribution required as a matching share, to meet any of the non-Federal obligations for the project unless the Federal granting agency providing the Federal portion of such funds verifies in writing that the expenditure of such funds for such purpose is authorized;

f. Operate, maintain, repair, replace, and rehabilitate the project, or functional portion the project, including mitigation, at no cost to the Federal Government, in a manner compatible with

the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

g. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor, now or hereafter, owns or controls for access to the project for the purpose of inspecting, operating, maintaining, repairing, replacing, rehabilitating, or completing the project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Federal Government shall relieve the non-Federal sponsor of responsibility to meet the non-Federal sponsor's obligations, or to preclude the Federal Government from pursuing any other remedy at law or equity to ensure faithful performance;

h. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the United States or its contractors;

i. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 96-510, as amended (42 U.S.C. 9601-9675), that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for the initial construction, periodic nourishment, operation, and maintenance of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government shall perform such investigations unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

j. Assume, as between the Federal Government and the non-Federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the initial construction, periodic nourishment, operation, or maintenance of the project;

k. Agree that, as between the Federal Government and the non-Federal sponsor, the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, and repair the project in a manner that would not cause liability to arise under CERCLA;

l. Prevent obstructions of or encroachments on the project (including prescribing and enforcing regulations to prevent such obstruction or encroachments) which might reduce ecosystem restoration benefits, hinder operation and maintenance, or interfere with proper functioning of the project, such as any new developments on project lands or the addition of facilities which would degrade the benefits of the project;

m. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as would properly reflect total costs of construction of the project, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 Code of Federal Regulations (CFR) Section 33.20;

n. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended (42 U.S.C. 1962d-5), and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2213), which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

o. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army," and all applicable Federal labor standards and requirements, including but not limited to 40 U.S.C. 3141- 3148 and 40 U.S.C. 3701 - 3708 (revising, codifying, and enacting without substantial change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c et seq.); and

p. Comply with all applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended (42 U.S.C. 4601-4655), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way necessary for the initial construction, periodic nourishment, operation, and maintenance of the project, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

15. The recommendation contained herein reflects the information available at this time and current departmental policies governing the formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of the national civil works construction program, nor the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to Congress for

authorization and execution funding. However, prior to transmittal to Congress, interested Federal agencies, the State of Louisiana, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

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