



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, DC 20310-2600

22 JUN 2012

CECW-MVD (1105-2-10a)

SUBJECT: Louisiana Coastal Area (LCA), Barataria Basin Barrier Shoreline Restoration Project, Lafourche, Jefferson, and Plaquemines Parishes, Louisiana

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on ecosystem restoration for Barataria Basin Barrier Shoreline (BBBS) in Lafourche, Jefferson, and Plaquemines Parishes, Louisiana. It is accompanied by the report of the New Orleans District Engineer and the Mississippi Valley Division Engineer. These reports are in final response to the authorization for BBBS contained in Section 7006(c)(1)(C) of the Water Resources Development Act of 2007 (WRDA 2007).
2. Section 7006(c)(1) of WRDA 2007 authorizes the Secretary to carry out five projects, including the BBBS project, substantially in accordance with the Report of the Chief of Engineers for ecosystem restoration for the Louisiana Coastal Area dated January 31, 2005. Section 7006(c)(3) states that before beginning construction of any project under Section 7006(c), the Secretary shall submit a report documenting any modifications to the project, including cost changes, to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate. Section 7006(c)(4) states that notwithstanding Section 902 of the Water Resources Development Act of 1986, the cost of a project under Section 7006(c), including any modifications to the project, shall not exceed 150 percent of the cost of such project set forth in Section 7006(c)(1). Preconstruction engineering and design activities on the BBBS project will be continued under the authority provided by Section 7006(c)(1)(C). Construction of the recommended plan for BBBS will be undertaken under the Section 7006(c)(1)(C) authority as well, except for construction of the Shell Island component.
3. The Report of the Chief of Engineers for ecosystem restoration for the Louisiana Coastal Area, dated January 31, 2005, (hereinafter referred to as the LCA Chief's report), describes a plan to address the most critical restoration needs in coastal Louisiana. Congress authorized these projects for construction in WRDA 2007 Title VII. This report addresses BBBS, one of the 15 near-term ecosystem restoration features described in the LCA Chief's report.
4. In accordance with Section 7006(c)(1)(C), the reporting officers recommend that the Secretary carry out the Caminada Headland component of the recommended plan for BBBS under the existing authorization. The reporting officers also recommend that the Congress raise the total project cost for the recommended plan for BBBS. The recommended plan for BBBS is consistent

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with the authorization in Section 7006(c)(1)(C) of WRDA 2007, but modification of that authorization is required because the total costs for the recommended plan for BBBS, including both the Caminada Headland component and Shell Island component, exceeds the authorized cost for the BBBS project as defined in Section 7006(c)(4) of WRDA 2007.

5. The BBBS is located approximately 55 miles south of New Orleans, Louisiana. It is a key component in regulating estuary hydrology and slowing the rate of wetland loss. Caminada Headland, forming the western portion of the barrier shoreline, has experienced some of the highest rates of shoreline retreat on the Gulf coast. Shell Island forms the eastern portion of the barrier and has disintegrated into several smaller islands and shoals and is gradually converting to a series of bays directly connected to the Gulf of Mexico. The two reaches were identified in the LCA Chief's Report as the most critical to maintaining Barataria shoreline integrity and protecting the interior coast from further degradation. The BBBS project described in the LCA Chief's report consisted of dredging and placing sediments to restore barrier dunes and marshes. At Caminada Headland, about 9-10 million cubic yards (mcy) of sand would be placed to create a dune approximately 6 feet high with a shoreward berm about 1000 feet wide and 13 miles long. Approximately 6 mcy of material would be placed to create about 3,000 acres of marsh. The project would provide a net increase of 640 acres of dune/berm habitat and 1,780 acres of saline marsh habitat at Caminada Headland. Shell Island would be restored to a two-island configuration. At Shell Island (west) approximately 3.4 mcy of sand would be placed 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. The project would provide about 147 acres of shoreline habitat on Shell Island.

6. The reporting officers reviewed the BBBS project described in the LCA Chief's report, as well as the changed physical conditions of the shoreline. Since 2005 it has continued to degrade and has been heavily impacted by hurricanes and tropical storms. Based on this review the reporting officers developed the recommended plan presented in this report to respond to the changed conditions and to be consistent with the direction provided in WRDA 2007. As in the LCA Chief's Report, this recommended plan includes dune and marsh restoration at Caminada Headland and Shell Island, the barrier system's most critical components. The recommended plan is the National Ecosystem Restoration (NER) plan. It will restore the barrier system's geomorphic and hydrologic form. It will restore critical habitat for the threatened piping plover, as well as valuable stopover habitats for migratory birds and Essential Fish Habitats for a variety of fish and shellfish. It will protect the interior coast from further degradation, and the sediment input will supplement long shore sediment transport processes, increasing the restored area's sustainability.

7. The recommended plan consists of dredging and placing approximately 5.1 mcy of sand to restore and create about 880 acres of dune at Caminada Headland. Dune height would be + 7 feet North American Vertical Datum of 1988 (NAVD88) with a crown width of 290 feet and

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slopes of 20 feet horizontal to 1 foot vertical. The proposed borrow source for Caminada dune material is Ship Shoal, located about 40 miles from the project site. Approximately 5.4 mcy of material would be placed landward of the dune to restore and create approximately 1,186 acres of marsh at an elevation of +2.0 feet NAVD88. The proposed borrow source for Caminada marsh material is located approximately 1.5 miles south of the Headland. Approximately 71,500 feet of sand fencing would be installed and a variety of native vegetation species would be planted on approximately 8 foot centers. Shell Island would be restored to its pre-Hurricane Bob (1979) single island configuration. About 5.6 mcy of sand and 23,800 feet of sand fencing would be placed to build approximately 317 acres of dunes to a height of +6 feet NAVD88 with a crown width of 189 feet and slopes of 45 feet horizontal to 1 foot vertical. The proposed borrow source for Shell Island dune material is the Mississippi River, about 11 miles north of the project site. Approximately 2.1 mcy of sediment would be placed to restore about 466 acres of marsh at an elevation of +2 feet NAVD88. The proposed borrow source for marsh material is an offshore site south of the Empire Jetties. A variety of native vegetation species would be planted on approximately 8 foot centers.

8. The recommended plan includes renourishment at staggered intervals to maintain the headland and island over time. As part of the non-Federal sponsor's Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) responsibilities, renourishment of the Caminada Headland would be implemented every 1.5 to 2 years in conjunction with Corps operation and maintenance dredging of the Bayou Lafourche, Louisiana (Belle Pass) navigation project. Shell Island would be renourished by the non-Federal sponsor 20 and 40 years after initial construction to the original construction template, as part of its OMRR&R responsibilities.

9. The recommended plan contains post-construction monitoring and adaptive management at an estimated cost of \$1,300,000 to be conducted for a period of no more than ten years to ensure project performance. Monitoring may be cost-shared for a period of no more than ten years. The non-Federal sponsor is responsible for monitoring required beyond ten years. Because the recommended plan is an ecosystem restoration plan, it does not have any significant adverse effects, and no mitigation measures would be required.

10. The State of Louisiana is the non-Federal cost-sharing sponsor for all features and supports the recommended plan described herein. Based on October 2011 price levels, the estimated project first cost for the recommended plan is \$428,000,000. In accordance with the cost sharing provisions in WRDA 1986, as amended by Section 210 of WRDA 1996 the Federal share of the total first cost would be about \$278,000,000 (65 percent) and the non-Federal share would be about \$150,000,000 (35 percent). The project first cost includes an estimated \$1,300,000 for environmental monitoring and adaptive management. The State of Louisiana, acting as the non-Federal sponsor, is required to provide all lands, easements, relocations, right-of-ways and dredged or excavated material disposal areas (LERRDs), the costs of which are estimated at \$3,660,000. Further, the non-Federal sponsor is responsible for OMRR&R of the project after

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construction, including renourishment, currently estimated at about \$6,180,000 annually. Based on a 4 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the recommended plan are estimated to be \$27,000,000 including OMRR&R.

11. The reporting officers recommend that the Caminada Headland component of the NER plan be implemented under the existing authority provided in Section 7006(c)(1)(C) of WRDA 2007. The reporting officers also recommend that the Congress increase the authorized total project cost so that the entire recommended (NER) plan can be implemented. Modification of the authorization provided by Section 7006(c)(1)(C) is required because the cost of the recommended NER plan, including both the Caminada Headland and Shell Island components, exceeds the authorized cost limit as defined in Section 7006(c)(4). Costs to accomplish the original goals of the BBBS project have increased because the shoreline system has continued to degrade since the LCA Chief's report was completed. In addition, the cost of dredging and placing material, the largest component of this project, has increased because of increases in fuel and construction costs post-hurricane Katrina. The State of Louisiana, acting as the non-Federal sponsor, supports immediate implementation of the Caminada component.

12. Based on October 2011 price levels, the estimated first cost for the Caminada Headland component is \$224,000,000. In accordance with the cost sharing provisions in WRDA 1986, as amended by Section 210 of WRDA 1996, the Federal share of the first cost would be about \$146,000,000 (65 percent) and the non-Federal share would be about \$78,000,000 (35 percent). The first cost includes an estimated \$630,000 for environmental monitoring and adaptive management. The State of Louisiana, acting as the non-Federal sponsor, is required to provide all LERRDs, the costs of which are estimated at \$1,650,000. Further, the non-Federal sponsor is responsible for OMRR&R of the project after construction, including renourishment, currently estimated at about \$4,250,000 annually. Based on a 4 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the recommended plan are estimated to be \$14,600,000 including OMRR&R.

13. The reporting officers found the recommended plan and each of the components to be cost effective, technically sound, and environmentally and socially acceptable. The cost of the recommended aquatic ecosystem restoration features is justified by the decrease in shoreline erosion and loss of wetlands; the restored barrier system's regulation of salinity gradients and maintenance of the estuary critical to fish and wildlife, such as white and brown shrimp; the maintenance of geomorphic form that attenuates storm surge for interior wetlands and surrounding coastal communities, including Port Fourchon, major oil and gas infrastructure and the regional hurricane evacuation route for residents of southern Lafourche Parish; and the approximately 1719 AAHUs of beach/dune and marsh habitats provided 988 AAHUs on Caminada Headland and 731 AAHUs on Shell Island. The recommended plan conforms to essential elements of the U.S. Water Resources Council's Economic and Environmental Studies and complies with other administration and legislative policies and guidelines. The

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recommended plan was developed in coordination and consultation with various Federal, State and local agencies using a systems approach in formulating ecosystem restoration solutions and in evaluating the impacts and benefits of those solutions. Study formulation looked at a wide range of structural and non-structural alternatives. Further refinement and additional analysis of the project will be performed during preconstruction engineering and design, and modifications will be made, as appropriate, prior to project implementation. Such analysis or modifications will continue to be coordinated with Federal, State, and local agencies and other parties.

14. In accordance with the Engineering Circular on review of decision documents, all technical, engineering and scientific work underwent an open, dynamic and rigorous review process to ensure technical quality. This included an independent Agency Technical Review (ATR), an Independent External Peer Review (IEPR), and a Corps Headquarters policy and legal review. All concerns of the ATR have been addressed and incorporated into the report. The IEPR was conducted by the Battelle Memorial Institute. IEPR of the draft report was completed on December 2, 2011. A total of 16 comments were generated. No comments were rated high significance, 15 were rated medium, and 1 was rated low significance. All comments from this review have been addressed and incorporated into the final project documents and recommendation as appropriate.

15. I concur in the findings, conclusions, and recommendation of the reporting officers. Accordingly, I recommend project implementation, in accordance with the reporting officers' recommendations with such modifications as in the discretion of the Chief of Engineers may be advisable. I further recommend, in accordance with the reporting officers recommendations, that the authorization be modified to raise the total project cost to allow for construction of the entire NER plan. My recommendations are subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, including WRDA 1986, as amended by Section 210 of WRDA 1996. The State of Louisiana, acting as the non-Federal sponsor, would provide the non-Federal cost share and all lands, easements, relocations, right-of-ways and disposals. Further, the non-Federal sponsor would be responsible for all OMR&R. This recommendation is subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies, including but not limited to its agreeing to:

a. Provide 35 percent of ecosystem restoration project costs as further specified below:

(1) Provide the non-Federal share of design costs in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;

(2) Provide all lands, easements, and rights-of-way, including those required for relocations, the borrowing of material, and the disposal of dredged or excavated material; perform or ensure the performance of all relocations; and construct improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material that

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the Government determines to be necessary 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 equal to 35 percent of the total project costs allocated to the project;

b. 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;

c. Not use funds provided by a Federal agency under any other Federal program, to satisfy, in whole or in part, the non-Federal share of the cost of the project unless the Federal agency that provides the funds determines that the funds are authorized to be used to carry out the study or project;

d. Not use the project or lands, easements, and rights-of-way required for the project as a wetlands bank or mitigation credit for any other project;

e. For as long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate the project, or functional portion of 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;

f. 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;

g. 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;

h. 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

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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;

i. 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;

j. 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;

k. 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 the project's proper function, such as any new developments on project lands or the addition of facilities which would degrade the benefits of the project;

l. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of three 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;

m. 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;

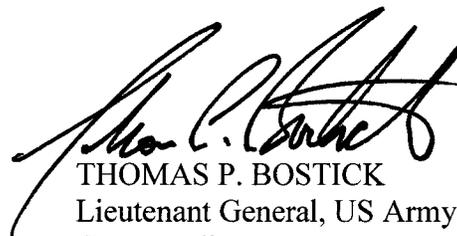
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n. Comply with all applicable Federal and state laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, 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

o. 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.

16. The recommendations contained herein reflect the information available at this time and current departmental policies governing the formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of the national civil works construction program or the perspective of higher levels within the executive branch. Consequently, the recommendations may be modified before they are transmitted to Congress for additional authorization and/or implementation funding. However, prior to transmittal to Congress, the State of Louisiana, interested Federal agencies, and other parties will be advised of any significant modifications in the recommendations and will be afforded an opportunity to comment further.



THOMAS P. BOSTICK
Lieutenant General, US Army
Commanding