

DEPARTMENT OF THE ARMY

MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS P.O. BOX 80 VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO ATTENTION OF:

1 2 DEC 2012

CEMVD-PD-N

MEMORANDUM FOR Commander, New Orleans District (ATTN: CEMVN-PM-B)

SUBJECT: Louisiana Coastal Area, Barataria Basin Barrier Shoreline - Peer Review Plan (RP)

1. References:

a. Memorandum, CEMVN-PM-B, 10 December 2012, SAB (encl 1).

b. Memorandum, CEMVD-RB-T, 5 December 2012, subject: Review Management Organization (RMO) Endorsement - LCA BBBS PED Review Plan (encl 2).

c. Engineering Circular (EC) 1165-2-209, Change 1, Civil Works Review Policy, dated 31 January 2012.

2. The subject RP was reviewed by the RMO (CEMVD-RB-T) and recommends approval. The RP includes agency technical review and since the the project does not contain influential scientific information or scientific assessment, nor does the project design require redundancy, resiliency or robustness an independent external peer review is not deemed necessary. The RP is consistent with the purpose and policy of EC 1165-2-209.

3. I hereby approve this RP, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Substantial revisions to this RP or its execution will require new written approval from this office.

4. The RP is to be posted to the District website.

5. The POC for this action is Mr. Jim Wojtala, CEMVD-PD-N, at (601) 634-5931.

EQu Bell

EDWARD E. BELK, JR., P.E., SES Director of Programs

2 Encl

CF: CECW-MVD (J. Redican)

REVIEW PLAN

<u>Louisiana Coastal Area</u> <u>Barataria Basin Barrier Shoreline Ecosystem Restoration Project</u> <u>Caminada Headland Component</u> <u>Lafourche and Jefferson Parishes, Louisiana</u>

Preconstruction Engineering and Design

Mississippi Valley Division – New Orleans District



MSC Approval Date: 12 December 2012 Last Revision Date: 12 December 2012

REVIEW PLAN

Louisiana Coastal Area Barataria Basin Barrier Shoreline Ecosystem Restoration Project Caminada Headland Component Preconstruction Engineering and Design

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Caminada Headland Component of the Louisiana Coastal Area (LCA) Barataria Basin Barrier Shoreline (BBBS) ecosystem restoration project (P2#: 400421). This Review Plan applies to preconstruction engineering and design (PED) activities. Once this Review Plan is formally approved it will be posted on the New Orleans District website at http://www.mvn.usace.army.mil/pd/pd_peerreview.asp. It will remain posted on the website indefinitely.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) LCA Barataria Basin Barrier Shoreline, Caminada Headland Phase 1 Project Management Plan, 01 Nov 2012 (draft)
- (6) Mississippi Valley Division Regional Planning and Environment Division South Quality Management Plan, undated
- (7) ER 1110-2-1150, Engineering and Design of Civil Works Projects
- (8) ER 415-1-11, Biddability, Constructability, Operability, and Environmental Review, 1 September 1994
- c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines five general levels of review: District Quality Control/Quality Assurance (DQC); Agency Technical Review (ATR); Independent External Peer Review (IEPR); Biddability, Constructability, Operability, and Environmental Review (BCOE); and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for implementation documents is typically either a Corps of Engineers' Division office or the Risk Management Center (RMC), depending on the primary purpose of the implementation documents. The RMO for the peer review effort described in this Review Plan is Mississippi Valley Division (MVD).

The PED phase will involve developing designs for the single purpose ecosystem restoration LCA BBBS Caminada Headland project to restore barrier island dune and marsh habitats. The project's failure would not pose a significant threat to human life and the New Orleans District's Chief of Engineering Division signed the "Explanation Of Rationale For Recommendation To <u>Not</u> Conduct A Type II IEPR (SAR)" on November 3, 2012. New Orleans District received MVD's concurrence memo on December 5, 2012. Therefore, no review by the RMC will be required due to safety issues on this project.

3. STUDY INFORMATION

a. Implementation Documents. The LCA BBBS Caminada Headland ecosystem restoration project is located on the Gulf of Mexico shoreline approximately 55 miles south of New Orleans, Louisiana, in the Lafourche and Jefferson Parishes. The implementation documents for the PED phase include soils reports, design documentation reports (DDR), and plans and specifications (P&S) for the beach dune and back bay marsh creation project features; an operation and maintenance (O&M) manual; and an Adaptive Management and Monitoring (AM&M) Plan.

b. Project Description.

The Recommended National Environmental Restoration Plan

The LCA BBBS Restoration, Final Integrated Construction Report and Final Environmental Impact Statement, dated March 2012 (hereafter referred to as the LCA BBBS Report), and the subsequent report of the Chief of Engineers dated June 22, 2012 describe the recommended National Environmental Restoration (NER) plan for the LCA BBBS project. All LCA reports can be found at www.lca.gov. The LCA BBBS recommended NER plan is summarized below.

The LCA BBBS Project is located approximately 55 miles south of New Orleans, Louisiana (See Figure 1). 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 January 2005 LCA Chief's Report as the most critical to maintaining Barataria shoreline integrity and protecting the interior coast from further degradation.

The LCA BBBS recommended NER plan consists of dredging and placing approximately 5.1 million cubic yards (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 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.



FIGURE 1: STUDY AREA

The recommended NER 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 the 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.

The recommended NER 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 NER plan is an ecosystem restoration plan, it does not have any significant adverse effects, and no mitigation measures would be required.

The Coastal Protection and Restoration Authority Board of Louisiana (CPRAB), 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). Further, the non-Federal sponsor is responsible for OMRR&R of the project after construction, including renourishment. The recommended NER plan increases the longevity of the geomorphologic form and function of the Caminada Headland and Shell Island by creating or restoring 1,197 acres of dune and supratidal habitat, and 1,652 acres of intertidal habitat immediately after construction. The recommended plan meets the LCA program and project objectives and is within the scope of the authorization. The non-Federal sponsor supports the recommended plan.

The Caminada Headland Component of the NER Plan

As stated above, the June 2012 report of the Chief of Engineers recommended that the Caminada Headland component (See Figure 2) of the LCA BBBS recommended NER plan be implemented under the existing authorization and that Congress raise the allowable total project cost for the recommended NER plan for the LCA BBBS project. Modification of the authorization provided by WRDA 2007, 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 WRDA 2007, 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 posthurricane Katrina. The non-Federal sponsor supports immediate implementation of the Caminada Headland component.

c. Factors Affecting the Scope and Level of Review:

- 1. River Effects There are no potential impacts to navigation on the Mississippi River due to the construction or maintenance of the project.
- 2. Safety As with most ecosystem restoration projects, there is little risk to life safety inherent with the project. Risk of project failure after project implementation is expected to be minimal.
- d. In-Kind Contributions. Products and analyses provided by non-Federal sponsor as in-kind services are subject to DQC, ATR, BCOE, and IEPR (if required). The Louisiana Coastal Protection and Restoration Authority Board (CPRAB), the non-Federal sponsor, has expressed that it prefers to provide in-kind services in order to meet its cost sharing requirement. The Integral Determination Report (IDR) was approved by CEMVD on November 19, 2012. In-kind services identified in the IDR include environmental analysis coordination, adaptive management & monitoring planning, design documentation report engineering design, plans & specifications, geotechnical design and field investigations including surveys and soil borings, and data management for the project. Per the terms of the draft cost-share agreement for design of the Barataria Basin Barrier Shoreline, Caminada Headland Phase 1 project, the CPRAB will be responsible for 35% of PED and construction costs.

4. DISTRICT QUALITY CONTROL (DQC)

a. Documentation of DQC. In accordance with District Quality Management Plan procedures, the management of the review process will be coordinated by a designated Quality Control Review Leader (QCRL). The QCRL will compile all technical, grammatical, and editorial comments and will ensure DQC standards are met prior to submission of the implementation document to the Vertical

Team. Dr. Checks will be used to document all DQC comments, responses, and associated resolution accomplished throughout the review process. Once the DQC process is complete, a Certificate of Quality Control Review will be provided to the ATR team lead.



FIGURE 2: CAMINADA HEADLAND PLAN DESIGN FEATURES

b. Products to Undergo DQC. Products developed during PED that require DQC review will include a soils reports, DDRs, the AM&M Plan, and P&S for the beach dune and back bay marsh creation project features. DQC reviews will be performed at the 95% level of design for all products.

c. Required DQC Team Expertise.

DQC Team Members/Disciplines	Expertise Required
Quality Control Review Leader	The DQC review leader should be a senior professional with
(QCRL)	extensive experience in preparing Civil Works implementation
	documents and conducting DQC. The lead should also have the
	necessary skills and experience to lead a team through the DQC
	process. The DQC lead may also serve as a reviewer for a specific
	discipline (such as economics, environmental resources, etc).
Environmental Resources	Reviewer must be experienced with National Environmental
	Policy Act (NEPA) compliance and have a biological or

	environmental background that is familiar with coastal areas. The
	reviewer must have experience with urban projects and impacts,
	evaluation of social impacts associated with ecosystem
	restoration projects, and public coordination. Reviewer should be
	familiar with adaptive management and monitoring as required
	by WRDA 2007 Section 2039 including a monitoring design to
	evaluate ecological success and a contingency plan (adaptive
	management) to adjust the project as necessary to meet project
	objectives.
Geotechnical Engineering	Team member has a thorough understanding of soils and soils
	analysis. Experience needs to include geotechnical evaluation of
	borrow to fill ratios for placement of dredged material for beach
	dune and marsh creation features, including design of
	containment dikes and settlement evaluations.
Civil Engineering	Team member has experience in the design of beach dune and
	marsh creation ecosystem restoration features.
Construction/Operations	Reviewer must be familiar with standard operating procedures for
	construction sequencing.
Real Estate	Team member must be experienced in civil work real estate laws,
	policies and guidance and experience working with sponsor real
	estate issues and coastal property rights.

5. AGENCY TECHNICAL REVIEW (ATR)

The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. Due to the low level of complexity for design of this ecosystem restoration project, no outside professional reviewers are anticipated for this review effort and therefore the public will not be asked to nominate any reviewers. The ATR team lead will be from outside the home MSC.

a. Products to Undergo ATR. Products developed during PED that require ATR review will include a soils reports, DDRs, the AM&M Plan, and P&S for the beach dune and back bay marsh creation project features. ATR will be performed at the 95% level of design for all products.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive
	experience in preparing Civil Works implementation documents
	and conducting ATR. The lead should also have the necessary
	skills and experience to lead a virtual team through the ATR

b. Required ATR Team Expertise.

	process. The ATR lead may also serve as a reviewer for a specific
	discipline (such as economics, environmental resources, etc).
Environmental Resources	Reviewer must be experienced with National Environmental
	Policy Act (NEPA) compliance and have a biological or
	environmental background that is familiar with coastal areas. The
	reviewer must have experience with urban projects and impacts,
	evaluation of social impacts associated with ecosystem
	restoration projects, and public coordination. Reviewer should be
	familiar with adaptive management and monitoring as required
	by WRDA 2007 Section 2039 including a monitoring design to
	evaluate ecological success and a contingency plan (adaptive
	management) to adjust the project as necessary to meet project
	objectives.
Geotechnical Engineering	Team member has a thorough understanding of soils and soils
	analysis. Experience needs to include geotechnical evaluation of
	borrow to fill ratios for placement of dredged material for beach
	dune and marsh creation features, including design of
	containment dikes and settlement evaluations.
Civil Engineering	Team member has experience in the design of beach dune and
	marsh creation ecosystem restoration features.
Construction/Operations	Reviewer must be familiar with standard operating procedures for
	construction sequencing.
Real Estate	Team member must be experienced in civil work real estate laws,
	policies and guidance and experience working with sponsor real
	estate issues and coastal property rights.

- c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:
 - (1) The review concern identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
 - (2) The basis for the concern cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
 - (3) The significance of the concern indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
 - (4) The probable specific action needed to resolve the concern identify the action(s) that the reporting officers must take to resolve the concern.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution

process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of the ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

An IEPR (Type 1) was conducted for the feasibility study phase in 2011 with the final IEPR Report submitted on October 3, 2011. The final comment/response results were documented on December 2, 2011.

The PED phase will involve developing designs for the single purpose ecosystem restoration LCA BBBS Caminada Headland project to restore barrier island dune and marsh habitats. The New Orleans District's Chief of Engineering Division has determined that a Type II IEPR (SAR) is not required for this single purpose ecosystem restoration project as the project's failure would not pose a significant threat to human life. The New Orleans District's Chief of Engineering Division signed the "Explanation Of Rationale For Recommendation To <u>Not</u> Conduct A Type II IEPR (SAR)" on November 3, 2012. New Orleans District received MVD's concurrence memo on December 5, 2012. Therefore, no review by the RMC will be required due to safety issues on this project.

7. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL (BCOE) REVIEW

BCOE review ensures the biddability, constructability, operability, and environmental aspects of a project are considered during design, and that a high degree of review is integrated into the construction procurement documents for all projects. Biddability, constructability, operability, and the environment must be emphasized throughout the planning and design process to ensure efficient construction that is environmentally sound, to minimize cost and time growth, to avoid unnecessary changes and claims, as well as to ensure safe efficient operations by the user. ER 415-1-11 establishes protocols for carrying forth BCOE review. BCOE reviewers are those involved in the planning and bidding of a construction contract, and construction of the project.

a. Documentation of BCOE. Dr. Checks will be used to document all BCOE comments, responses, and associated resolution accomplished throughout the review process.

Products to Undergo BCOE. The 95% level of design P&S developed during PED will undergo BCOE review.

8. POLICY AND LEGAL COMPLIANCE REVIEW

All implementation document products and milestones will be reviewed throughout the PED process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC, ATR, and BCOE augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, BCOE, and IEPR (if required).

- **a. Planning Models.** No planning models will be used for the implementation documents.
- **b.** Engineering Models. No engineering models are anticipated to be used in the development of the implementation documents.

10. REVIEW SCHEDULES AND COSTS

a. Review Schedule and Cost. For each review product and throughout the period of design, DQC will be performed at the 95% level of design. According to the Project Management Plan, dated 01Nov2012, DQC is scheduled to be completed in June 2013. ATR will begin immediately after DQC is completed. Initial estimates to carry out Review Plan tasks include:

-	MVN DQC:	\$5 <i>,</i> 000	
	ATD.		

- ATR: \$55,000

11. PUBLIC PARTICIPATION

Several public meetings were held during the feasibility phase and PDT members often met with stakeholders to discuss the project. Key features such as continued public beach access reflect concerns raised during these meetings. Continued interaction with the public is necessary to ensure a

transparent PED process. It is recommended that the project follow a stakeholder update process that other LCA projects are utilizing whereby important project updates are presented to stakeholders as they are developed. Informal meetings with interested parties should occur as they are requested. Any significant and relevant public comments received during the PED process as well as the final comments and responses to the IEPR conducted during the feasibility phase will be provided to the review teams prior to beginning their reviews.

12. REVIEW PLAN APPROVAL AND UPDATES

The Mississippi Valley Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Bill Hicks MVN Project Manager (504) 862-1945, Billy.J.Hicks@usace.army.mil
- RMO contact MVD-RBT (ATTN W. Bradley)

ATR Team (TBD)				
Section	First Name	Last Name	Phone	Email

RMO Team (TBD)				
Section	First Name	Last Name	Phone	Email

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Plans and Specifications for the Louisiana Coastal Area Barataria Basin Barrier Shoreline Ecosystem Restoration Caminada Headland Component Project, in Lafourche and Jefferson Parishes, Louisiana. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE	
Name	Date
ATR Team Leader	
<u>Office Symbol/Company</u>	
SIGNATURE	
<u>Name</u>	Date
Project Manager	
<u>Office Symbol</u>	
SIGNATURE	
<u>Name</u>	Date
Architect Engineer Project Manager ¹	
Company, location	
SIGNATURE	
<u>Name</u>	Date
Review Management Office Representative	
Office Symbol	

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: <u>Describe the major technical concerns and</u> <u>their resolution</u>.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

<u>Name</u> Chief, Engineering Division <u>Office Symbol</u> Date

SIGNATURE

<u>Name</u> Chief, Planning Division <u>Office Symbol</u> Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

AAHU: Average annualized habitat units AM&M: Adaptive Management and Monitoring ATR: Agency Technical Review **BBBS:** Barataria Basin Barrier Shoreline BCOE: BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW cfs: Cubic feet per second CPRAB: Louisiana Coastal Protection and Restoration Authority Board DDR: Design documentation report **DQC: District Quality Control EC: Engineering Circular ER: Engineering Regulation IEPR:** Independent External Peer Review LCA: Louisiana Coastal Area LERRDs: lands, easements, relocations, right-of-ways and dredged or excavated material disposal areas mcy: million cubic yards MR&T Mississippi River and Tributaries flood control system MVD: Mississippi Valley Division NAVD88: North American Vertical Datum of 1988 NEPA: National Environmental Policy Act **NER: National Environmental Restoration** O&M: Operation and maintenance OMRR&R: Operation, maintenance, repair, replacement and rehabilitation **P&S:** Plans and specifications PED: Preconstruction engineering and design QCRL: Quality Control Review Leader **RMC: Risk Management Center RMO: Review Management Organization** SET: USACE Scientific and Engineering Technology Initiative **USACE: US Army Corps of Engineers**

WRDA 2007: Water Resources Development Act of 2007