



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
SOUTH ATLANTIC DIVISION  
60 FORSYTH STREET SW, ROOM 10M15  
ATLANTA, GA 30303-8801

CESAD-RBT

28 March 2012

MEMORANDUM FOR COMMANDER, MOBILE DISTRICT (CESAM-EN-HH/  
DOUGLAS C. OTTO, JR.)

SUBJECT: Approval of the Review Plan for Mississippi Coastal Improvements Program (MsCIP)  
Comprehensive Barrier Island Restoration Project, Ship Island, Mississippi

1. References:

a. Memorandum, CESAM-EN-HH, 20 January 2012, Subject: Review Plan - Mississippi Coastal Improvements Program (MsCIP) Comprehensive Barrier Island Restoration Project, Ship Island, Mississippi (Enclosure).

b. EC 1165-2-209, Civil Works Review Policy, 31 January 2010.

2. The Review Plan for the Plans and Specifications and Design Documentation Report for this design and construction of the Comprehensive Barrier Island Restoration Project by reference 1.a has been reviewed by this office. Some minor edits to the Review Plan were coordinated with Justine McDonald of your organization. The enclosed Review Plan, with the coordinated edits incorporated, is approved in accordance with reference 1.b above.

3. We concur with the conclusion of the District Chief of Engineering that Type II Independent External Peer Review (Type II IEPR) is not required for this dredging, material placement and vegetation planting effort. The primary basis for the concurrence that a Type II IEPR is not required is the determination that project failure does not pose a significant threat to human life. Non-substantive changes to this Review Plan do not require further approval.

4. The District should take steps to post the Review Plan to its web site and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed.

6. The SAD point of contact is Mr. James Truelove, CESAD-RBT, 404-562-5121.

FOR THE COMMANDER:

Encl

  
CHRISTOPHER T. SMITH, P.E.  
Chief, Business Technical Division



DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

REPLY TO  
ATTENTION OF

CESAM-EN-HH

14 December 2011

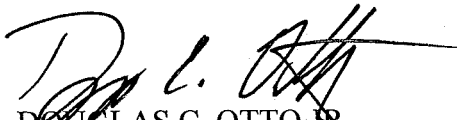
MEMORANDUM FOR CDR, SOUTH ATLANTIC DIVISION ATTN: CESAD-RBT  
(MR. CHRISTOPHER SMITH)

SUBJECT: Review Plan – Mississippi Coastal Improvements Program (MsCIP) Comprehensive  
Barrier Island Restoration Project, Ship Island, Mississippi.

1. A copy of the subject report is enclosed for review and approval.
2. The Review Plan (RP) was prepared in accordance with EC-1165-2-209 and has been by  
approved by the SAM Chief of Engineering.
3. If you have any questions, please call Thomas Smith, Project Manager, at (251) 690-3270 or  
Justin McDonald, Lead MsCIP Project Engineer, at (251) 690-3146.

FOR THE COMMANDER:

Encl

  
DOUGLAS C. OTTO JR.  
Chief, Engineering Division

# **REVIEW PLAN**

## **MISSISSIPPI COASTAL IMPROVEMENTS PROGRAM (MSCIP) - COMPREHENSIVE BARRIER ISLAND RESTORATION PROJECT SHIP ISLAND, MS**

Mobile District

**December 2011**

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.



**US Army Corps  
of Engineers®  
Mobile District**

# **REVIEW PLAN**

## **MISSISSIPPI COASTAL IMPROVEMENTS PROGRAM (MSCIP) - COMPREHENSIVE BARRIER ISLAND RESTORATION PROJECT SHIP ISLAND, MS**

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ATTACHMENT 1    Acronyms and Abbreviations

# **MISSISSIPPI COASTAL IMPROVEMENTS PROGRAM (MSCIP) - COMPREHENSIVE BARRIER ISLAND RESTORATION PROJECT SHIP ISLAND, MS**

## **1. PURPOSE AND NEED**

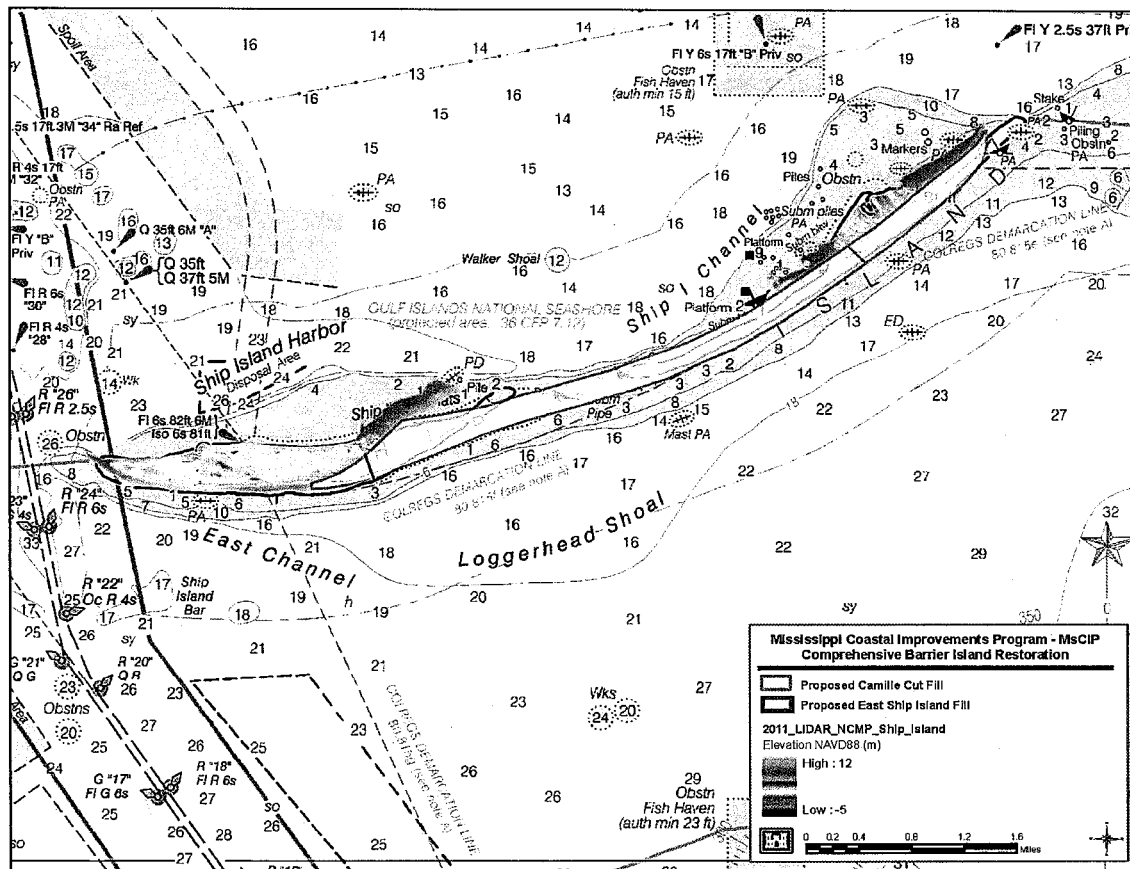
This Review Plan defines the scope and level of review activities for Comprehensive Barrier Island Restoration Project. Review activities consist of District Quality Control (DQC) and Agency Technical Review (ATR). The project is in the Pre-Construction, Engineering and Design (PED) Phase. The related documents are Implementation Documents that consist of Plans and Specifications (P&S) and a Design Documentation Report (DDR). Upon approval, this review plan will be included into the Project Management Plan as an appendix to the Quality Management Plan. The Review Management Organization is the South Atlantic Division.

## **2. DESCRIPTION OF PROJECT**

Hurricane Katrina devastated the Mississippi Gulf Coast on August 29, 2005. Immediately following the storm, the State of Mississippi proposed restoring the barrier islands, particularly Ship Island, to a pre-Hurricane Camille condition with hopes that this would reduce the storm surge of future hurricanes on the mainland. Later modeling efforts by the U.S. Army Corps of Engineers (USACE) indicated, however, that restoration of the barrier islands would have minimal impact on storm surge reduction. Modeling did show, though, that the increase in wave heights would be significant and the ecology and estuary between the barrier islands and the Mississippi mainland would be changed if the barrier islands eroded away. Further analysis of the islands also showed that over 1600 acres of land had been lost between 1917 and 2006 and that the islands would continue to erode and probably be totally lost in the future. Removal of sand from the regional sediment budget due to a combination of severe storm events, proximity to sand sources, and dredging of the Pascagoula navigation channel is believed to be the reason for the continual loss of the islands.

To help mitigate some of the loss of the islands and prolong their existence, the USACE, State of Mississippi, and National Park Service (NPS) formulated a comprehensive restoration plan to restore the sediment budget of the barrier island chain. The plan, known as the Comprehensive Barrier Island Restoration Plan, was implemented under the USACE Mississippi Coastal Improvements Program (MsCIP) and consists of the placement of approximately 20.7 million cubic yards (c.y.) of sand within the Mississippi Unit of National Park Service's Gulf Island National Seashore. Approximately 15.3 million c.y. will be placed in the breach of Ship Island, referred to as Camille Cut, and approximately 5.4 million c.y. will be placed along the southern shoreline of East Ship Island. The closure of Camille Cut and introduction of sand into the littoral zone at East Ship Island will restore the barrier island sediment budget to a natural state as much as possible given the realities of navigation channel dredging, climate change, and other anthropogenic activities as well as provide significant system-wide ecosystem benefits to Mississippi coastal environment.

The Comprehensive Barrier Island Restoration Project is located at Ship Island, approximately 15 miles southeast of Gulfport, MS. The project consists of placing approximately 15.3 million c.y. of sand in Camille Cut and approximately 5.4 million c.y. along the southern shore of East Ship Island. Approximately 13.9 million and 4.9 million c.y. will remain in place at Camille Cut and East Ship Island, respectively, after placement losses occur. The Camille Cut and East Ship Island placement layout is shown in Figure 1 below.

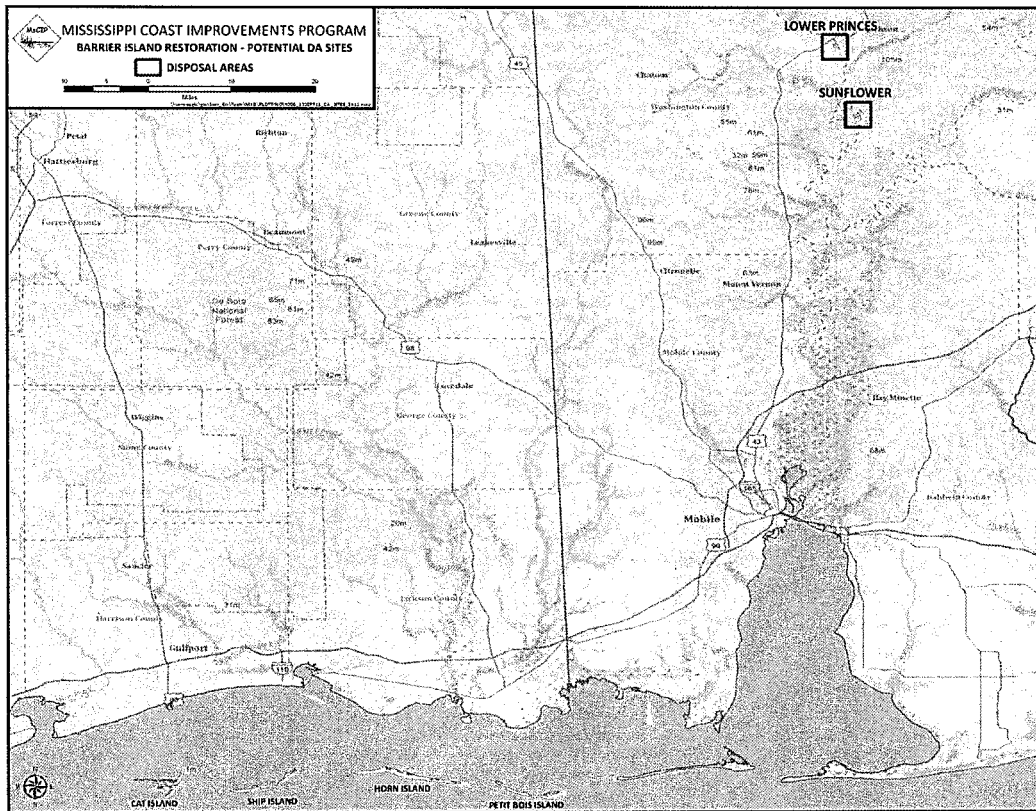


**Figure 1. Camille Cut & East Ship Island Placement Sites**

Sand for the construction of the Comprehensive Barrier Island Restoration Project will be obtained from five separate borrow sources (Ship Island Borrow, DA-10, Petit Bois Borrow, Sunflower DA, and Lower Princess DA). Ship Island Borrow is located approximately 2 miles south of Camille Cut; DA-10 is located between Horn Island and Petit Bois Island, just west of the Pascagoula Navigation Channel; Petit Bois Borrow is located approximately 2 miles south of the west tip of Dauphin Island; and the Sunflower and Lower Princess DAs are located on the Lower Tombigbee River, approximately 78 and 92 miles, respectively, from the mouth of the Mobile River. Approximately 1 million, 5.4 million, 13.3 million, 0.5 million, and 0.5 million c.y. of sand will be removed from the borrow sites, respectively, for the construction of the project. The location of Ship Island Borrow, DA-10, and Petit Bois Borrow are shown in Figure 2. The location of the Sunflower and Lower Princess DAs are shown in Figure 3.



**Figure 2. Sand Borrow Locations - Ship Island, DA-10, & Petit Bois**



**Figure 3. Sand Borrow Locations - Sunflower & Lower Princess**

### 3. DESCRIPTION OF WORK FOR REVIEW

This project consists of the design and construction of the Comprehensive Barrier Island Restoration Project. The project will be constructed in six phases which includes five separate dredging and placement contracts as well as a planting contract to vegetate the newly placed fill. Products to be reviewed include the plans and specifications (P&S) for each phase and the design documentation report (DDR). The DDR will be a comprehensive document that will capture all of the phases of work. The National Environmental Policy Act (NEPA) coordination and supporting documentation will also be included in the DDR as an appendix. The DDR will be amended, if necessary, as the phases of design and construction progress to accommodate for unforeseeable circumstances that may present themselves (changes in site conditions due to hurricanes, etc.).

### 4. BACKGROUND

The Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan and Integrated Programmatic Environmental Impact Statement (EIS) was developed by the U.S. Army Corps of Engineers in the aftermath of Hurricane Katrina. The objective of the plan was to identify comprehensive improvement projects that would make the Mississippi coast more resilient in the areas of hurricane and storm damage reduction, prevention of saltwater intrusion, preservation of fish and wildlife, and prevention of erosion. The comprehensive plan outlined 12 elements, including both structural and non-structural components, to aid in the recovery of coastal Mississippi. Structural elements included restoring protective beaches and systems, restoring native habitats, and raising an existing levee. Non-structural elements included removing structures from within floodplains or raising structures that are highly vulnerable to storm damage. Implementation of the 12 elements would provide for the restoration of over 3,000 acres of coastal forest and wetlands, approximately 30 miles of beach and dune restoration, and flood-proofing or acquisition of approximately 2,000 tracts within the 100-year floodplain. The restoration of the Mississippi barrier islands, which is the focus of this review plan, was included in this plan.

An Agency Technical Review (ATR) and an Independent External Peer Review (IEPR) were performed on the MsCIP Comprehensive Plan and Programmatic EIS in August 2008 and November 2008, respectively. The ATR was performed by the National Planning Center of Expertise for Coastal Storm Damage Reduction (PCX-CSDR) in accordance with *Peer Review of Decision Documents* (EC-1105-2-408) dated May 31, 2005 and *Review of Decision Documents* (EC-1105-2-410) dated August 22, 2008. Critical documents utilized during the ATR included the Project Management Plan (March 9, 2006), Program Guidance Memorandum (April 28, 2006), Supplemental Policy Guidance Memorandum (December 5, 2007), Policy Compliance Review Memorandum (April 17, 2008), three MsCIP Comprehensive Plans (September 24, 2007; January 18, 2008; August 12, 2008), and the MsCIP Interim Report (May 1, 2006). The ATR team included over 25 technical experts that were selected from a wide range of backgrounds including plan formulation, coastal modeling and design, risk analyses, cost engineering, structural and non-structural design, civil engineering, deep draft navigation, hydrology, geology, geotechnical engineering, spatial analysis, environmental design and restoration, cultural resources, real estate, and economics. Following the review, the team



offered formal certification of the MsCIP Comprehensive Plan and Programmatic EIS. The *Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan and Integrated Programmatic Environmental Impact Statement, Agency Technical Review Quality Control Report* is provided in Attachment 3.

As mentioned previously, an IEPR was also performed for the MsCIP Comprehensive Plan and Integrated Programmatic EIS. The IEPR was prepared by Battelle Memorial Institute on November 7, 2008 in accordance with the following guidance: *Peer Review of Decision Documents* (EC-1105-2-410) dated August 22, 2008; CECW-CP Memorandum dated March 30, 2007; and the Office of Management and Budget's *Final Information Quality Bulletin for Peer Review* released December 16, 2004. Battelle is a non-profit science and technology organization with experience in establishing and administering review panels for USACE. The IEPR was conducted by 7 panel members with expertise in engineering (civil and geotechnical), geology/geomorphology, hydrology, hydraulics, coastal environmental science, water quality/resource management, floodplain management, meteorology/hurricanes, socioeconomics, real estate, risk management, and modeling. The IEPR panel identified 14 final comments which were segmented into rankings of high, medium, and low significance. These comments and further details of the IEPR are provided in the *Final Independent External Peer Review Report for the Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan* shown in Attachment 4.

Currently, a supplement to the Mississippi Comprehensive Plan and Integrated Programmatic EIS is being prepared to specifically incorporate the design details of the MsCIP Comprehensive Barrier Island Restoration Project. The preliminary draft of the Supplemental EIS (SEIS) will be included in the Design Documentation Report. The SEIS will be fully vetted for NEPA compliance concurrent with the Design Documentation Report.

## **5. PROJECT DELIVERY TEAM**

The Project Delivery Team (PDT) is comprised of those individuals involved directly in the development of the implementation documents. The individual contact information and disciplines of the District PDT are included in Table 1 of Attachment 1 of this document.

## **6. LEVELS OF REVIEW**

This Review Plan (RP) describes the levels of review and the anticipated review process for the various documents to be produced. This RP is a component of the Project Management Plan (PMP). All levels of review are addressed in this RP: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR).

## 7. DISTRICT QUALITY CONTROL

All documents to be produced will undergo District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. DQC will be managed by SAM in accordance with ER 1110-1-12, Engineering & Design Quality Management, EC 1165-2-209, Civil Works Review Policy, and the District Quality Management Plan. The DQC will include quality checks and reviews, supervisory reviews, PDT reviews, and Biddability, Constructability, Operability and Environment (BCOE) reviews required by ER-1110-1-12. The DQC review will be completed prior to submitting documents for ATR. Documentation of the DQC review as contained in DrChecks will be certified during the ATR that DQC activities were sufficient and documented. The individual contact information and disciplines of the DQC review team are included in Table 2 of Attachment 1 of this document.

## 8. AGENCY TECHNICAL REVIEW

All documents produced as part of this effort will undergo Agency Technical Review (ATR) 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 Corps guidance, and that design P&S and supporting DDR are clear, constructible, environmental sustainable, operable and maintainable. The ATR will also ensure that the P&S, DDR and supporting SEIS are consistent with the approved/authorized plan.

The ATR team will consist of the individuals that represent the significant disciplines involved in the accomplishment of the work. ATR will be managed within the Corps and conducted by senior USACE personnel outside of the Mobile District that are not involved in the day to day production of the project. DrChecks review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process. The documents to be reviewed are the P&S and DDR. The PDT will evaluate comments in DrChecks and revise materials as necessary. The ATR leader will be from outside the MSC, and must complete a statement of technical review for all final products and final documents. By signing the ATR certification, the district leadership certifies policy compliance of the document and also that the DQC activities were sufficient and documented. The individual contact information and disciplines of the ATR team are included in Table 3 of Attachment 1 of this document.

**Disciplines Required for Review.** At a minimum, the following disciplines should be represented on the ATR team:

<b>Discipline</b>	<b>Required Expertise</b>
ATR Lead	Team member should have minimum expertise such as having led prior ATRs, etc. The ATR lead may also have been a senior ATR reviewer on a similar type project within the past 5 years. ATR Lead can also serve as one of the review disciplines in addition to team leader duties.
Coastal Hydraulics	Team member(s) should have a minimum of 5 years experience in beach/breach fill design considerations.
Civil Engineer (Operations/Construction)	Team member should have a minimum of 5 years experience with administration of contracts for dredging and beach/breach fill construction.
Geotechnical Engineer/Geologist	Team member should have a minimum of 5 years experience to include geotechnical evaluation of boring logs and test data relative to beach fill design projects.
Environmental Specialist	Team member(s) should have a minimum of 5 years experience with environmental evaluation and compliance requirements, pursuant to national environmental statutes (NEPA), section 404 of the Clean Water Act (CWA), applicable executive orders and other Federal planning requirements. Familiarity with beach/breach fill projects is also beneficial.

## 9. INDEPENDENT EXTERNAL PEER REVIEW

Independent External Peer Review (IEPR) is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of the USACE is warranted. This project is in the implementation phase; thus, the Type I IEPR is not required.

Based on criteria contained in EC 1165-2-209, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review (SAR). The Federal action is not justified by life safety, and project failure would not pose a significant threat to human life. Innovative materials or novel engineering methods will not be used. Redundancy, resiliency, or robustness are not required for design. Also, the project has no unique construction sequencing, or a reduced or overlapping design construction schedule.

## 10. REVIEW MANAGEMENT ORGANIZATION

It is the responsibility of the Review Management Organization (RMO) to develop and prepare a “charge” to the reviewer. SAD is the RMO for this project, and SAM will assist with development of the “charge”. The purpose of agency reviews throughout the project life cycle, including ATR, policy compliance and legal reviews, generally, is to ensure that the appropriate problems and opportunities are addressed as well as assure that accurate cost, scheduling, and associated risks are presented.

## 11. POLICY AND LEGAL COMPLIANCE

The National Environmental Policy Act (NEPA) compliance is required for the construction of this project. This includes consideration of no adverse impacts to the environment. NEPA documentation will be prepared and coordinated prior to preparation of P&S. DQC and ATR 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.

## 12. MODEL CERTIFICATION AND APPROVAL

The models being used for this project have been approved for use. These models include: STWAVE, ADCIRC, CH3D and GENSIS.

## 13. REVIEW SCHEDULE AND COSTS

The total cost for DQC review and ATR is estimated to be approximately \$180,000. The documents to be reviewed and scheduled dates for reviews are as follows:

Milestone	Review	Schedule Dates
100% Unreviewed P&S,DDR and SEIS: Phases 1 – 6	DQC	Phase 1 – April 27, 2012 Phase 2 – August 31, 2012 * Phase 3 – August 31, 2012 * Phase 4 – January 3, 2013 Phase 5 – April 25, 2013 Phase 6 – August 29, 2013
Final P&S, DDR and SEIS: Phases 1 – 6	ATR	Phase 1 – June 8, 2012 Phase 2 – October 11, 2012 * Phase 3 – October 11, 2012 * Phase 4 – February 14, 2013 Phase 5 – June 6, 2013 Phase 6 – October 10, 2013

Milestone	Review	Schedule Dates
Construction Contract Award: Phases 1 – 6		Phase 1 – July 9, 2012 Phase 2 – December 28, 2012 * Phase 3 – December 28, 2012 * Phase 4 – March 15, 2013 Phase 5 – August 20, 2013 Phase 6 – December 24, 2013

\* Phases 2 and 3 will be designed and constructed concurrently. This is possible because the work being performed under Phases 2 and 3 are at different locations.

#### 14. PUBLIC PARTICIPATION

The review plan will be made accessible to the public through the Mobile District website link <http://www.sam.usace.army.mil/>. Public review of the review plan can begin as soon as it is approved by the Division Commander and posted by the Mobile District. Comments made by the public will be available to the review team. Public and interagency review for the EA will be conducted in accordance with NEPA, as outlined in ER 1105-2-100.

#### 15. MAJOR SUBORDINATE COMMAND (MSC) APPROVAL

The MSC (Division Commander) is responsible for approving the review plan as prepared by the Mobile District. Approval is provided by the MSC Commander. The Commander's approval should reflect team input as to the appropriate scope and level of review for the implementation document. Like the PMP, the review plan is a living document and may change as the project progresses. Changes in the review plan should be approved by following the process used for initially approving the plan. In all cases the MSC will review decisions on the level of review and any changes made in updates to the project.

## ATTACHMENT 1 - ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
BCOE	Biddability, Constructability, Operability and Environment	O&M	Operation and maintenance
CAP	Continuing Authorities Program	OMB	Office and Management and Budget
CSDR	Coastal Storm Damage Reduction	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DPR	Detailed Project Report	OEO	Outside Eligible Organization
DQC	District Quality Control/Quality Assurance	OSE	Other Social Effects
DX	Directory of Expertise	PCX	Planning Center of Expertise
EA	Environmental Assessment	PDT	Project Delivery Team
EC	Engineer Circular	PAC	Post Authorization Change
EIS	Environmental Impact Statement	PMP	Project Management Plan
EO	Executive Order	PL	Public Law
ER	Ecosystem Restoration	QMP	Quality Management Plan
FDR	Flood Damage Reduction	QA	Quality Assurance
FEMA	Federal Emergency Management Agency	QC	Quality Control
FRM	Flood Risk Management	RED	Regional Economic Development
FSM	Feasibility Scoping Meeting	RMC	Risk Management Center
GRR	General Reevaluation Report	RMO	Review Management Organization
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RTS	Regional Technical Specialist
IEPR	Independent External Peer Review	SAR	Safety Assurance Review
ITR	Independent Technical Review	SEIS	Supplemental Environmental Impact Statement
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act