



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GEORGIA 30303-8801

CESAD-RBT

12 April 2019

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for Loiza, Puerto Rico, Continuing Authorities Program, Section 14, Emergency Streambank and Shoreline Protection Project

1. References:

a. Memorandum, CESAJ-EN-Q, 4 April 2019, subject as above.

b. Engineering Circular (EC) 1165-2-217, Water Resources Policies and Authorities Review Policy for Civil Works, 20 February 2018.

2. The Review Plan (RP) for the Emergency Streambank and Shoreline Protection Project for Loiza, Puerto Rico, and reference 1.a noted above have been reviewed by South Atlantic Division (SAD). SAD concurs with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The RP is hereby approved in accordance with reference 1.b.

3. SAD concurs with the District's RP recommendation that outlines the requirements for District Quality Control (DQC), Agency Technical Review (ATR), and Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review. The Safety Assurance Review/Type II Independent External Peer Review is not required. Documents to be reviewed include the Plans and Specifications and the Design Documentation Report (DDR).

4. The South Atlantic Division Office shall be the Review Management Organization for this project.

5. The District should take steps to post the approved RP to its website and provide a link to CESAD-RBT. Before posting to the website, the names of Corps/Army employees should be removed. Subsequent significant changes to this RP, such as scope or level of review changes, should they become necessary, will require new written approval from this office.

6. The SAD point of contact is [REDACTED]



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

CESAJ-EN-Q

4 APR 2019

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT), 60 Forsyth Street SW, Room 10M15, Atlanta, GA 30303

SUBJECT: Approval of Review Plan for Loiza, Puerto Rico, Continuing Authorities Program, Section 14, Emergency Streambank and Shoreline Protection Project

1. References.

- a. Engineering Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 Feb 18.
- b. Flood Control Act of 1946, Public Law 79-526, 24 Jul 46.

2. I hereby request approval of the enclosed Review Plan for the Loiza, Puerto Rico, Continuing Authorities Program, Section 14, Emergency Streambank and Shoreline Protection Project, and concurrence with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The recommendation not to perform a Type II IEPR is based on the EC 1165-2-217 Risk Informed Decision Process as presented in the Review Plan. The Review Plan complies with applicable policy, provides for Agency Technical Review, and has been coordinated with the CESAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by CESAD.

3. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

4. If you have any questions regarding the information in this memo, please feel free to contact me or contact [REDACTED].

Encl

PROJECT REVIEW PLAN

For

Design and Implementation Phase Documents

For

Loiza

**Continuing Authorities Program Section 14
Emergency Streambank and Shoreline Protection Project**

Loiza, Puerto Rico

Project P2 number: 455357

Jacksonville District

March 2019



**US Army Corps
of Engineers**®

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1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan defines the scope of review activities for the Loiza, Continuing Authorities Program (CAP) Section 14, Emergency Streambank and Shoreline Protection Project, located in Loiza, Puerto Rico. As discussed below, the review activities consist of a District Quality Control (DQC) effort, an Agency Technical Review (ATR), and a Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review. Also, as discussed below, an Independent External Peer Review (IEPR) is not recommended. The project is in the design phase, and the related documents including Plans and Specifications (P&S) and a Design Documentation Report (DDR) are the implementation documents. Upon approval, this review plan will be included into the Project Management Plan (PMP) for this project as an appendix to the Quality Management Plan (QMP).

b. References

- (1). ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 August 1999
- (2). ER 1110-1-12, Engineering and Design Quality Management, 31 March 2011
- (3). EC 1165-2-217, Review Policy for Civil Works, 20 February 2018
- (4). ER 415-1-11, Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review, 1 January 2013
- (5). SAJ EN QMS 02611, SAJ Quality Control of In-House Products: Civil Works PED, 21 November 2011
- (6). P2 # 455357, Project Management Plan, Loiza, Puerto Rico
- (7). Loiza, Puerto Rico, Final Integrated Feasibility Report and Environmental Assessment, May 2018

c. Requirements

This Review Plan was developed in accordance with EC 1165-2-217, 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 and construction. The EC provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and other work products. The EC outlines five levels of review: DQC, ATR, IEPR, BCOES, and Policy and Legal Review.

d. Review Plan Approval and Updates

The South Atlantic Division (SAD) Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input as to the appropriate scope and level of review. Like the PMP, the Review Plan is a living document and may change as the project progresses. The Jacksonville District (SAJ) is responsible for keeping the Review Plan up-to-date. Minor changes to the review plan since the last MSC Commander approval will be documented in Attachment A. 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, will be posted on the SAJ's webpage. The latest Review Plan will be provided to SAD.

e. Review Management Organization

SAD is designated as the Review Management Organization (RMO). The RMO, in cooperation of the vertical team, will approve the ATR team members selected by the SAJ. SAJ will assist SAD with management of the ATR and will develop the charge to reviewers.

2. PROJECT INFORMATION

a. Project Location

The project vicinity is located in the Municipality of Loiza, Puerto Rico. Loiza is an economically disadvantaged community located on Puerto Rico’s northern Atlantic Coast, approximately 16 miles east of San Juan, as shown in Figures 1 and 2.

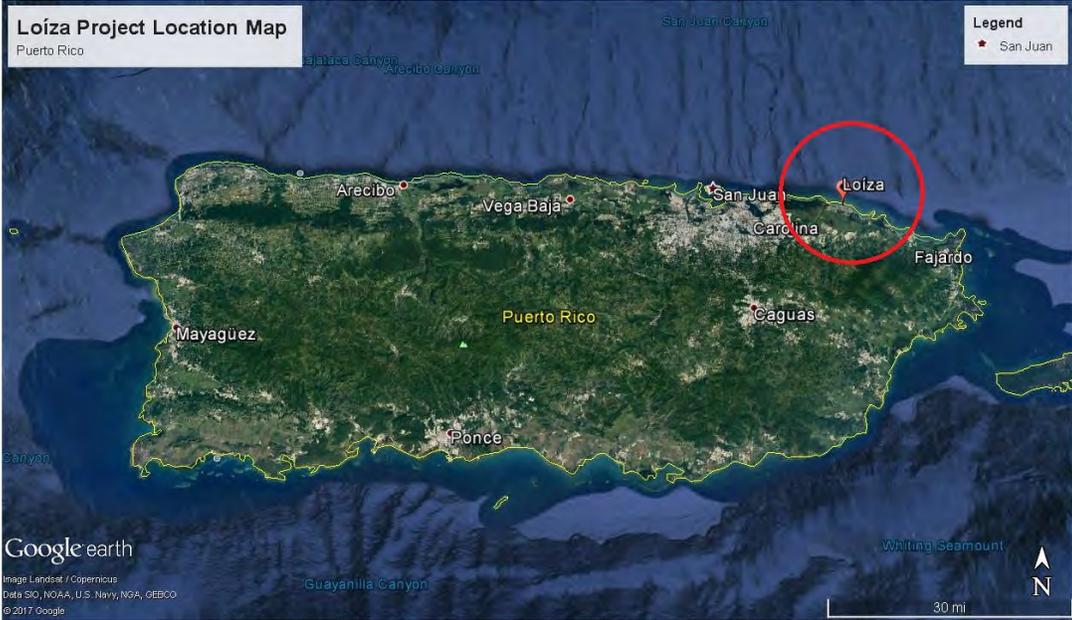


Figure 1: Project Location Map



Figure 2: Project Map

b. Project Authorization

A study was conducted under the authority of Section 14 of the Flood Control Act of 1946, as amended, which authorizes the study, design, and construction of small projects for streambank and shoreline erosion protection of public works and non-profit public services. The study area includes approximately 1,050 feet of shoreline within the Municipality of Loiza, which fronts a public school (A), a community center (B), and a public roadway (C), as shown in Figure 2. Section 14 is designed to implement projects to protect public facilities and facilities owned by non-profit organizations used to provide public services that are open to all on equal terms. These facilities must have been properly maintained but be in imminent threat of damage or failure by natural erosion processes on streambanks and shorelines and be essential and important enough to merit Federal participation in their protection.

c. Project Description

Coastal erosion is causing a receding shoreline that is threatening the permanent loss of public facilities. Increased erosion beneath unprotected, aging infrastructure has resulted in weakened foundations and loose construction debris, creating public safety hazards. The most threatened of the structures includes a public school, a public community center, and a public road (Calle Punta Del Atlantico). The resulting damages and safety concerns forced the municipality to temporarily relocate the school operations to a safer inland location. However, this temporary location is not adequate, and the municipality would like to return operations to the school site. In addition, recent partial erosion beneath Calle Punta Del Atlantico has rendered it impassible and limited access to the residences and cut off a public thoroughfare. Despite local efforts to slow the erosion by placing loose rock and concrete along the shoreline, the overall pattern has been continued erosion. Also noted through examining historic aerial photography, is the seasonal migration of beach erosion, likely a direct reflection of the

seasonal shift in wave patterns. Normal cyclical ocean conditions cause the shoreline to protrude to the east in the summer and to the west in the winter. However, sand is still lost from the system in the project area, resulting in gradually smaller protrusions and larger beach loss over time. Thus, the problem is not ultimately the loss of beach (requiring shore protection), but rather unprotected infrastructure (requiring coastal protection).

The current design of the project includes construction of a stone revetment along approximately 1,000 feet of shoreline.

d. Public Participation

The SAJ Corporate Communications Office continually keeps the public informed on SAJ projects and activities. A summary from every public meeting, if any are necessary, will be provided to the review team. The approved Review Plan will be posted on the SAJ webpage. Any comments or questions regarding the Review Plan will be addressed by the SAJ.

e. In-Kind-Contributions by Project Sponsor

There are no in-kind sponsor contributions related to the P&S and DDR that will affect this review plan or related reviews.

f. Civil Works Cost Engineering Mandatory Center of Expertise Review and Certification

The cost related documents associated with the P&S and DDR and the associated contract do not require external peer review or certification by the Cost Engineering Mandatory Center of Expertise (MCX).

3. DISTRICT QUALITY CONTROL

a. Requirements

All implementation documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo a DQC. A DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. DQC will be performed on P&S and DDR in accordance with SAJ's Engineering Division Quality Management System (EN QMS). The EN QMS defines DQC as the sum of two reviews, Discipline Quality Check and Review (DQCR) and Product Quality Control Review (PQCR).

b. Documentation

DQCRs occur during the design development process and are carried out as a routine management practice by each discipline. Checklists are utilized by each discipline to facilitate the review and to document the DQCR review comments. Certification of the DQCR is signed by the Branch Chief certifying that the DQCR on all design analyses and products have been completed in accordance with the EN QMS process prior to release from the Branch.

The PQCR shall ensure consistency and effective coordination across all disciplines and shall assure the overall coherence and integrity of the products. Review comments and responses for this review will be documented in DrCheckssm. The PQCR shall be QC certified by the Engineering Technical Lead (ETL), all applicable Section and Branch Chiefs, and the Division Chief. This PQCR certification signifies that all DQCR Certifications are complete, as well as the PQCR.

4. AGENCY TECHNICAL REVIEW

a. Risk Informed Decision on Appropriate Level of Review

Design and Implementation (DI) phase implementation documents are being prepared and an ATR of the P&S and DDR documents will be required.

b. Agency Technical Review Scope.

ATR is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-217 and ER 1110-1-12. An ATR will be performed on the P&S and DDR pre-final submittals.

A site visit will not be scheduled for the ATR Team. If necessary, additional data and photos of the project site required by the ATR team will be gathered by PDT members during plan-in-hand site visits. This information will be disseminated to the ATR Team by the PDT.

ATR will be conducted by individuals and organizations that are external to the Jacksonville District. The ATR Team Leader will be a USACE employee outside the SAD. The required disciplines and experience are described below.

ATR comments are documented in the DrCheckssm model review documentation database. DrCheckssm is a module in the ProjNetsm suite of tools developed and operated at ERDC-CERL (www.projnet.org). At the conclusion of ATR, the ATR Team Leader will prepare an ATR Review Report that summarizes the review. An outline for an ATR Report is in Attachment C. The report will include at a minimum the Charge to Reviewers, ATR Certification Form from EC 1165-2-217, and the DrCheckssm printout of the comments.

c. ATR Disciplines.

As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); subject matter experts (SME) certified in CERCAP; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills and abilities; and experience levels.

ATR Team Leader. The ATR Team Leader shall have experience with coastal projects and have performed ATR Team Leader duties on past ATR teams. ATR Team Leader can also serve as a co-duty to one of the review disciplines.

Geotechnical Engineering and Engineering Geology. The team member shall be a registered professional with a minimum of 5 years of experience in geotechnical engineering. Experience shall encompass coastal geologic and geotechnical analyses that are used to support the development of P&S for shoreline revetment projects.

Coastal Engineering. The team member shall be a registered professional engineer with a minimum of 5 years of experience in coastal engineering and experience with shoreline revetment projects.

5. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY REVIEW

The value of a BCOES review is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. BCOES review requirements must be emphasized throughout the planning and design processes for all programs and projects, including during planning and design. This will help to ensure that the Government's contract requirements are clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently and in an environmentally sound manner, and that the construction activities and projects are sufficiently sustainable. Effective BCOES reviews of design and contract documents will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete. A BCOES Review will be conducted for this project. Requirements and further details are stipulated in ER 1110-1-12, ER 415-1-11, and SAJ EN QMS 02611.

6. INDEPENDENT EXTERNAL PEER REVIEW

a. General.

EC 1165-2-217 provides guidance for the implementation of IEPR according to Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Design and Implementation Phases). The EC defines Section 2035 Safety Assurance Review (SAR), Type II Independent External Peer Review (IEPR). The EC also requires Type II IEPR be conducted outside USACE.

b. Type I Independent External Peer Review Determination.

A Type I IEPR is primarily associated with decision documents. A Type I IEPR is not applicable to the implementation documents covered by this Review Plan.

c. Type II Independent External Peer Review Determination (Section 2035).

This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-217). Therefore, a review under Section 2035 is not required. The factors in determining whether a review of design and construction activities of a project are necessary as stated under Section 2035, along with the applicability statements for this Review Plan, are as follows:

- (1) The failure of the project would pose a significant threat to human life.

This project consists of a stone revetment. Failure of the revetment will not directly pose a significant threat to human life.

- (2) The project involves the use of innovative materials or techniques.

This project will utilize methods and procedures commonly used by the USACE on other similar works.

- (3) The project design lacks redundancy.

The concept of redundancy does not apply to stone revetment projects.

(4) The project has unique construction sequencing or a reduced or overlapping design construction schedule.

This project's construction sequence and schedule have been used successfully by the USACE on this and other similar works. Construction schedules do not have unique sequencing and activities are not reduced or overlapped.

Based on the discussion above, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR of the P&S and DDR.

7. POLICY AND LEGAL COMPLIANCE

The SAJ Office of Counsel reviews all contract actions for legal sufficiency in accordance with Engineer Federal Acquisition Regulation Supplement 1.602-2 Responsibilities. The subject implementation documents and supporting environmental documents will be reviewed for legal sufficiency prior to advertisement.

8. MODEL CERTIFICATION AND APPROVAL

The project does not use any models that have not been approved for use by USACE. Information on the existing economic conditions along the coastline for the project was collected during feasibility phase for economic modeling purposes using Beach-*fx*. Storm surge values for the feasibility report were predicted using ADCIRC and STWAVE numerical models. Significant wave height and peak and mean wave period were generated for the feasibility study using the numerical hindcast model WISWAVE.

9. PROJECT DELIVERY TEAM DISCIPLINES

Discipline/Expertise
Geomatics & Survey
Geotechnical Engineering
Geology
Coastal Engineering

10. BUDGET AND SCHEDULE

a. Project Milestones.

Task	Date
DQCR	March 2019
PQCR/DQC*	April 2019
ATR Review	May 2019
ATR Certification	June 2019
BCOES Review	June-July 2019
BCOES Certification	July 2020

*SAJ EN QMS 02611 defines DQC as the sum of DQCR and PQCR

b. ATR Cost.

Funds will be budgeted to execute ATR and schedule as outlined above. It is envisioned that each reviewer will be afforded 24 hours review plus 8 hours for coordination. The estimated cost range is \$15,000 - \$20,000.

11. REVIEW PLAN POINTS OF CONTACT

Title	Organization	Phone
Review Manager	CESAJ-EN-Q	[REDACTED]
Quality Manager	CESAD-RBT	[REDACTED]

ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT B: PARTIAL LIST OF ACRONYMS AND ABBREVIATIONS

<u>Acronyms</u>	<u>Defined</u>
AFB	Alternatives Formulation Briefing
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability Review
CAP	Continuing Authorities Program
CERCAP	Corps of Engineers Reviewer Certification and Access Program
CY	Cubic Yards
DDR	Design Documentation Report
DI	Design and Implementation Phase
DQC	District Quality Control
DQCR	Discipline Quality Control Review
EA	Environmental Assessment
EC	Engineering Circular
EN QMS	Engineering Division Quality Management System
ER	Engineering Regulation
ERDC-CERL	Engineer Research and Development Center – Construction Engineering Research Laboratory
ESA	Endangered Species Act
ETL	Engineering Technical Lead
EV	Emergent Vegetation
FDEP	Florida Department of Environmental Protection
FONSI	Findings of No Significant Impacts
FSCA	Feasibility and Cost Sharing Agreement
FY	Fiscal Year
GRR	General Reevaluation Report
IEPR	Independent External Peer Review
LPP	Locally Preferred Plan
MCX	Mandatory Center of Expertise
MLLW	Mean Low Low Water
MSC	Major Subordinate Command
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
ODMDS	Ocean Dredged Material Disposal Site
OMB	Office of Management and Budget
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
P&S	Plans and Specifications
PDT	Project Delivery Team

<u>Acronyms</u>	<u>Defined</u>
PM	Project Manager
PMP	Project Management Plan
PPA	Project Partnering Agreement
PQCR	Product Quality Control Review
QA	Quality Assurance
QCP	Quality Control Plan
QMP	Quality Management Plan
QMS	Quality Management System
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
RTS	Regional Technical Specialist
SAD	South Atlantic Division Office
SAJ	South Atlantic Jacksonville District Office
SAR	Safety Assurance Review (also referred as Type II IEPR)
SAV	Submerged Aquatic Vegetation
SME	Subject Matter Expert
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources and Development Act

ATTACHMENT C:

ATR REPORT OUTLINE AND COMPLETION OF AGENCY TECHNICAL REVIEW

**Loiza
Continuing Authorities Program Section 14
Emergency Streambank and Shoreline Erosion Protection Project
Loiza, Puerto Rico**

ATR REPORT OUTLINE:

- 1. Introduction:**
- 2. Project Description:**
- 3. ATR Team Members:**
 - Geotechnical Engineering and Engineering Geology.**
 - Coastal Engineering.**
 - ATR Team Leader.**
- 4. ATR Objective:**
- 5. Documents Reviewed:**
- 6. Findings and Conclusions:**
- 7. Unresolved Issues:**

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Loiza, Continuing Authorities Program Section 14, Emergency Streambank and Shoreline Erosion Protection Project, Loiza, Puerto Rico, including the design documents, plans and specifications, and DDR. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-217 and ER 1110-1-12. 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.

NAME
ATR Team Leader

Date

NAME
Project Manager

Date

NAME
Review Management Office Representative

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: [Describe the major technical concerns and their resolution.](#)

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

NAME
Chief, Engineering Division
SAJ-EN

Date