



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

19 JAN 2017

CESAD-RBT

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for the Preconstruction, Engineering and Design Phase Implementation Documents for the Biscayne Bay Coastal Wetlands, Phase 1 L-31E Flow-way, Contract 4, Miami-Dade County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, 5 December 2016, subject: Approval of Review Plan for Preconstruction, Engineering and Design Phase Implementation Documents for Biscayne Bay Coastal Wetlands, Phase 1 L-31E Flow-way, Contract 4, Miami-Dade County, Florida (Encl).

b. EC 1165-2-214, Civil Works Review, 15 December 2012.

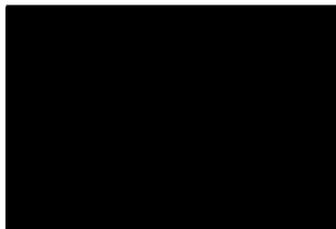
2. The enclosed subject Review Plan (RP) submitted by the Jacksonville District via reference 1.a has been reviewed by this office and is hereby approved in accordance with reference 1.b above.

3. We concur with the determination of the District Chief of Engineering and conclusion in the RP that a Type II Independent External Peer Review (IEPR) is not required on the Design Documentation Report and Plans and Specification. The primary basis for our concurrence is that the failure or loss of these pumping stations and culverts in this design effort will not pose a significant threat to human life.

4. The District should take steps to post the RP 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. 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.

5. The SAD point of contact is [REDACTED].

Encl





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

REPLY TO
ATTENTION OF

CESAJ-EN-Q

05 DEC 2016

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

SUBJECT: Approval of Review Plan for Preconstruction, Engineering, and Design Phase Implementation Documents for Biscayne Bay Coastal Wetlands, Phase 1 L-31E Flow-way, Contract 4, Miami-Dade County, Florida

1. References:

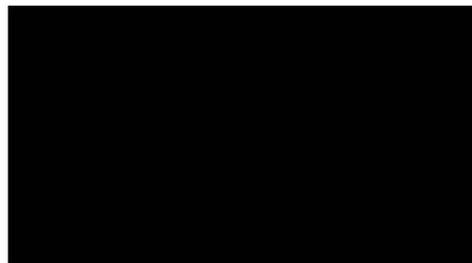
- a. EC 1165-2-214, Civil Works Review, 15 Dec 12
- b. WRRDA 2014, PL 113-121, 10 Jun 14 (Project Authorization)

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The determination that Type II IEPR is not required is based on the EC 1165-2-214 Risk Informed Decision Process as presented in the Review Plan. Documents to be reviewed include the plans, specifications, and design documentation report. 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 letter, please feel free to contact me or you may contact [REDACTED]

Encl



PROJECT REVIEW PLAN

For

Preconstruction, Engineering and Design Phase Implementation Documents

For

Comprehensive Everglades Restoration Program Biscayne Bay Coastal Wetlands Phase I L-31E Flow-way, Contract 4

Miami-Dade County, Florida

Project P2 Number: 113846

Jacksonville District

Date of Review Plan Approval: 17 January 2017

Date of Last Review Plan Revision: 15 March 2019



**US Army Corps
of Engineers®**

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ATTACHMENT B - Partial List of Acronyms and Abbreviations

ATTACHMENT C - ATR Report Outline and Completion of Agency Technical Review Form

1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan defines the scope and level of review activities for the Biscayne Bay Coastal Wetlands (BBCW) L-31E Flow-way Contract 4 components, Miami-Dade County, Florida. 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 Pre-Construction, Engineering and Design (PED) phase. The implementation documents to be reviewed are Plans and Specifications (P&S) and a Design Documentation Report (DDR). 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, Civil Works Review, 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”, 4 December 2017
- (6). Project Management Plan, Biscayne Bay Coastal Wetlands Phase 1 Project, P2 Number 114520

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, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). 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 a 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 Major Subordinate Command (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 SAD 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 SAJ’s Review Plan public 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. SAJ will assist SAD with management of the ATR and development of the charge to reviewers.

2. PROJECT INFORMATION

a. Project Background

The BBCW Project is part of the Comprehensive Everglades Restoration Plan (CERP), which is helping to restore the quantity, quality, timing and distribution of fresh water in the South Florida ecosystem. The overall project will restore the distribution of freshwater flows to southern Biscayne Bay, including Biscayne National Park, improving salinity distribution near the shoreline. It will enhance ecological health by helping to reestablish productive nearshore habitat, including nursery habitat for shrimp, shellfish, and fish. The project will also provide improved recreational and educational opportunities in Biscayne Bay and adjacent wetlands.

b. Project Authorization

The BBCW Phase 1 Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS) was authorized by Section 601(d) of WRDA 2000, P.L. 106-541. Congress authorized the ecosystem restoration of the BBCW Phase 1 Project as set forth in the Report of the Chief of Engineers, dated May 2, 2012. Congress authorized the BBCW project in Section 7002(5) of the Water Resources Reform and Development Act (WRRDA) of 2014 for construction.

c. Current Project Description

The Selected Plan encompasses a footprint of approximately 3,761 acres and includes features in three of the four sub-components studied: Deering Estate, Cutler Wetlands, and L-31 E Flow Way. The non-Federal Sponsor, South Florida Water Management District (SFWMD), has constructed the Deering Estate components and four culverts in the L-31E Flow-way. SFWMD will complete the design and construction of the Cutler Wetland features.

SAJ is the lead agency for the design and construction of the remaining features in the L-31E Flow-way. This review plan covers the design of S-709, a 40 cfs pump station located north of the C-103 canal on the L-31 E canal. S-709 will pump water from the C-103 canal and discharge to the north into the L-31E canal.

d. Public Participation

SAJ's Corporate Communications Office continually keeps the effected public informed on SAJ projects and activities. Monthly Project Delivery Team meetings are held via conference call. The public is encouraged to participate. The approved Review Plan will be posted on SAJ's Review Plan public webpage. Any comments or questions regarding the Review Plan will be addressed by SAJ.

e. Civil Works Cost Engineering Mandatory Center of Expertise Certification

The cost related documents associated with this contract do not require external peer review or certification. Therefore, no additional review requirements will be executed by the Cost Engineering Mandatory Center of Expertise (MCX) for the implementation documents addressed by this Review Plan.

3. DISTRICT QUALITY CONTROL

DQC activities for DDRs and P&S are stipulated in ER 1110-1-12, Engineering & Design Quality Management and SAJ EN QMS 02611. The project DDR and P&S will be prepared by the Jacksonville District using ER 1110-1-12 procedures and will undergo District Quality Control. SAJ EN QMS 02611 defines DQC as the sum of two reviews, Discipline Quality Control Review (DQCR) and Product Quality Control Review (PQCR). Product Quality Control Review Certification is the DQC Certification and will precede ATR.

4. AGENCY TECHNICAL REVIEW

a. Risk Informed Decision on Appropriate Level of Review

PED phase implementation documents are being prepared and an ATR of the P&S and DDR documents is required.

b. Agency Technical Review Scope.

Agency Technical Review (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.

ATR will be conducted by individuals and organizations that are external to the Jacksonville District. The ATR Team Leader will be a Corps of Engineers employee outside the South Atlantic Division. The required disciplines and experience are described below.

ATR comments will be 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 Review 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 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 10 or more years of experience with Civil Works Projects. The ATR Team Leader can also serve as one of the review disciplines.

Civil Engineering. The team member shall be a registered professional engineer and have 10 or more years of experience with civil/site work projects that included pump station construction, and culvert installation. Related project construction experience is desired.

Hydrology and Hydraulic Engineering. The team member shall be a registered professional engineer with 10 or more years of experience in conducting and evaluating hydrologic and hydraulic analyses for flood risk management projects. Experience with 2D hydraulic modeling, 3D hydrologic and groundwater modeling, and performance of risk assessments is required.

Geotechnical Engineering. The team member shall be a registered professional engineer and have 10 or more years of experience in geotechnical engineering. Experience shall include geotechnical evaluation of flood risk management structures. Experience shall encompass static and dynamic slope stability evaluation; evaluation of the seepage through earthen embankments and under seepage through the foundation of the flood risk management structures, levee embankments, floodwalls, closure structures and other pertinent features; and settlement evaluations.

Structural Engineering. The team member shall be a registered professional engineer and have 10 or more years of experience in structural engineering. Experience shall include the engineering and design of flood risk management project features, such as pump stations, conveyance culverts, and weirs.

Mechanical Engineering. The team member shall be a registered professional engineer and have 10 or more years of experience in mechanical engineering. Experience shall include the engineering and design of pump stations and culverts with vertical lift gates.

Electrical Engineering. The team member shall be a registered professional engineer and have 10 or more years of experience in electrical engineering. Experience shall include the engineering and design of pump stations, motor controls, Ethernet based control systems, security and fire alarm systems, and electric motor vertical lift gates.

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 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 implementation guidance for both 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 Pre-construction, Engineering and Design and Construction 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.

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 this Review Plan's applicability statements, are as follows:

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

This project will construct a pump station for ecosystem restoration, not flood mitigation. Failure of these features will not pose a threat to human life.

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

This project will utilize methods and procedures used by the Corps of Engineers on other similar construction projects.

- (3) The project design lacks redundancy.

The project features are not complex in nature and do not employ the concept of redundancy.

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

This project's construction does not have unique sequencing or a reduced or overlapping design. The installation sequence and schedule has been used successfully by the Corps of Engineers on other similar projects.

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

This ecosystem restoration project will not use any engineering models that have not been approved for use by USACE.

9. PROJECT DELIVERY TEAM DISCIPLINES

PDT Disciplines
Geotechnical Engineering
Hydraulic and Hydrologic Engineering
Structural Engineering
Civil Engineering
Mechanical Engineering
Electrical Engineering
Cost Engineering

10. BUDGET AND SCHEDULE

a. Project Schedule.

The project schedule for Pump Station S-709 is shown in the table below.

Milestone	Task	Start Date	End Date
	P&S complete	1-Aug-2017	1-Aug-2017
	DQCR	1-Aug-2017	16-Aug-2017
	PQCR *	01-Aug-2017**	20-Nov-2018
	ATR Review	11-Mar-2019	2-May-2019
	ATR Certification	2-May-2019	2-May-2019
	BCOES	2-May-2019	25-Jun-2019
CW320	BCOES Certification	25-Jun-2019	25-Jun-2019

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

** S-709 was placed on hold due to funding in 2017. PQCR review comments were incorporated and backchecked in 2018.

b. ATR Cost.

Funds will be budgeted for an ATR as outlined above. It is envisioned that each reviewer will be afforded 36 hours for the review plus 16 hours for coordination. The estimated cost range for the ATR is \$40,000-\$50,000.

ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
15 March 2019	Updated References, Project Information, and Project Schedule Sections with the current project information and references. Various grammatical/formatting corrections were also made through the document based on recent feedback from SAD on similar review plans.	1(b.), 2, and 10(a.)

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
DQC	District Quality Control
DQCR	Discipline Quality Control Review
EC	Engineering Circular
EA	Environmental Assessment
ER	Engineering Regulation
EA	Environmental Assessment
ERDC-CERL	Engineer Research and Development Center – Construction Engineering Research Laboratory
ESA	Endangered Species Act
ETL	Engineering Technical Lead
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
PED	Preconstruction Engineering and Design
PDT	Project Delivery Team
PM	Project Manager

<u>Acronyms</u>	<u>Defined</u>
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
SAJ	South Atlantic Jacksonville District Office
SAD	South Atlantic Division Office
SAR	Safety Assurance Review (also referred as Type II IEPR)
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

Comprehensive Everglades Restoration, Biscayne Bay Coastal Wetlands - Phase I L-31E Flow-way, Contract 4

Miami-Dade County, Florida

Review of Plans and Specifications (P&S), Design Documentation Report (DDR)

ATR REPORT OUTLINE (Unneeded items, such as ATR Team Member Disciplines that are not identified as needed in the Review Plan, shall be deleted from the ATR Report.)

1. Introduction:

2. Project Description:

3. ATR Team Members:

ATR Team Leader.

Hydrology and Hydraulic Engineering.

Geotechnical Engineering.

Structural Engineering.

Civil Engineering.

Mechanical Engineering.

Electrical Engineering.

4. ATR Objective:

5. Documents Reviewed:

6. Findings and Conclusions:

7. Unresolved Issues:

Enclosures:

1. ATR Statement of Technical Review
2. ATR Comments (DrChecks)
3. Project Review Plan
4. Charge to Reviewers
5. Certification of District Quality Control Review

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) for the –Biscayne Bay Coastal Wetlands Phase I, L-31E Flow-way, Contract 4, 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 DrChecks.

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