



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

CESAD-RBT

MEMORANDUM FOR Commander, Jacksonville District, 701 San Marco Boulevard,  
Jacksonville, Florida 32207

SUBJECT: Approval of the Review Plan for the C-23/C-24 Stormwater Treatment Area (STA)  
Project, Indian River Lagoon, South St. Lucie County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, 27 FEB 2020, 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 enclosed Review Plan (RP) for the construction of the C-23/C-24 STA submitted by the  
Jacksonville District via reference 1.a. noted above has been reviewed by South Atlantic  
Division (SAD). The RP is hereby approved in accordance with reference 1.b.

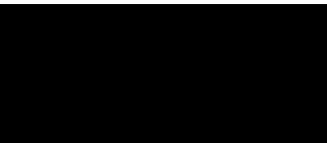
3. The South Atlantic Division Office shall be the Review Management Organization (RMO) for  
this project.

4. 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 and the  
conclusion that a Safety Assurance Review/Type II Independent External Peer Review is not  
required.

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], CESAD-RBT, [REDACTED].

Encl



Major General, USA  
Commanding



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT  
701 SAN MARCO BOULEVARD  
JACKSONVILLE, FLORIDA 32207-8175

27 FEB 2020

CESAJ-EN-Q

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

SUBJECT: Approval of Review Plan for the C-23/C-24 Stormwater Treatment Area (STA) Project, Indian River Lagoon, South St. Lucie County, Florida

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 C-23/C-24 STA Project, Indian River Lagoon, South St. Lucie County, Florida 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 SAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by SAD.

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

4. Point of contact is [REDACTED], Engineering Review Manager, [REDACTED]  
[REDACTED]

Encl.

Colonel, EN  
Commanding

# **PROJECT REVIEW PLAN**

**For**

## **Preconstruction, Engineering and Design Phase Implementation Documents**

**For**

### **C-23/C-24 Stormwater Treatment Area Project Indian River Lagoon – South St. Lucie County, FL**

**Project P2 number: 114470**

**Jacksonville District**

**January 2020**



**US Army Corps  
of Engineers®**

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## **1. PURPOSE AND REQUIREMENTS**

### **a. Purpose**

This Review Plan (RP) for the C-23/C-24 Stormwater Treatment Area (STA) Project, a component of the Indian River Lagoon (IRL) – South Project, St. Lucie County, Florida, will help ensure a quality engineering project is developed by the U.S. Army Corps of Engineers (USACE) in accordance with EC 1165-2-217, “Review Policy for Civil Works.” As part of the Project Management Plan (PMP), this RP establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products and lays out a value added process and describes the scope of review for the current phase of work. The EC outlines five general levels of review: District Quality Control/Quality Assurance (DQC/QA), Agency Technical Review (ATR), Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review, Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. This RP will be provided to the Project Delivery Team (PDT), and the DQC, ATR, and BCOES Teams. The technical review efforts addressed in this RP, DQC and ATR, are to augment and complement the policy review processes. The District Chief of Engineering has assessed that the life safety risk of this project is not significant; therefore, a Type II IEPR/Safety Assurance Review (SAR) will not be required, see Paragraph 6. Any levels of review not performed in accordance with EC 1165-2-217 will require documentation in the RP of the risk-informed decision not to undertake that level of review.

### **b. References**

- (1). ER 1110-2-1150, “Engineering and Design for Civil Works Projects,” dated 31 August 1999
- (2). ER 1110-1-12, “Engineering and Design Quality Management,” dated 31 March 2011
- (3). EC 1165-2-217, “Review Policy for Civil Works,” dated 20 February 2018
- (4). CECW-CE Memorandum, “Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery,” dated 5 April 2019
- (5). ER 415-1-11, “Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review,” dated 1 January 2013
- (6). 02611-SAJ EN Quality Control of In-House Products: Civil Works, dated 4 December 2017
- (7). Enterprise Standard (ES)-08025, Government Construction Quality Assurance Plan and Project/Contract Supplements
- (8). Enterprise Standard (ES)-08026, Three Phase Quality Control System
- (9). Project Management Plan dated January 2019 for Indian River Lagoon – South, P2 #114470

### **c. Requirements**

This RP 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 USACE decision, implementation, and operations and maintenance documents and other work products.

**d. Review Plan Approval and Updates**

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

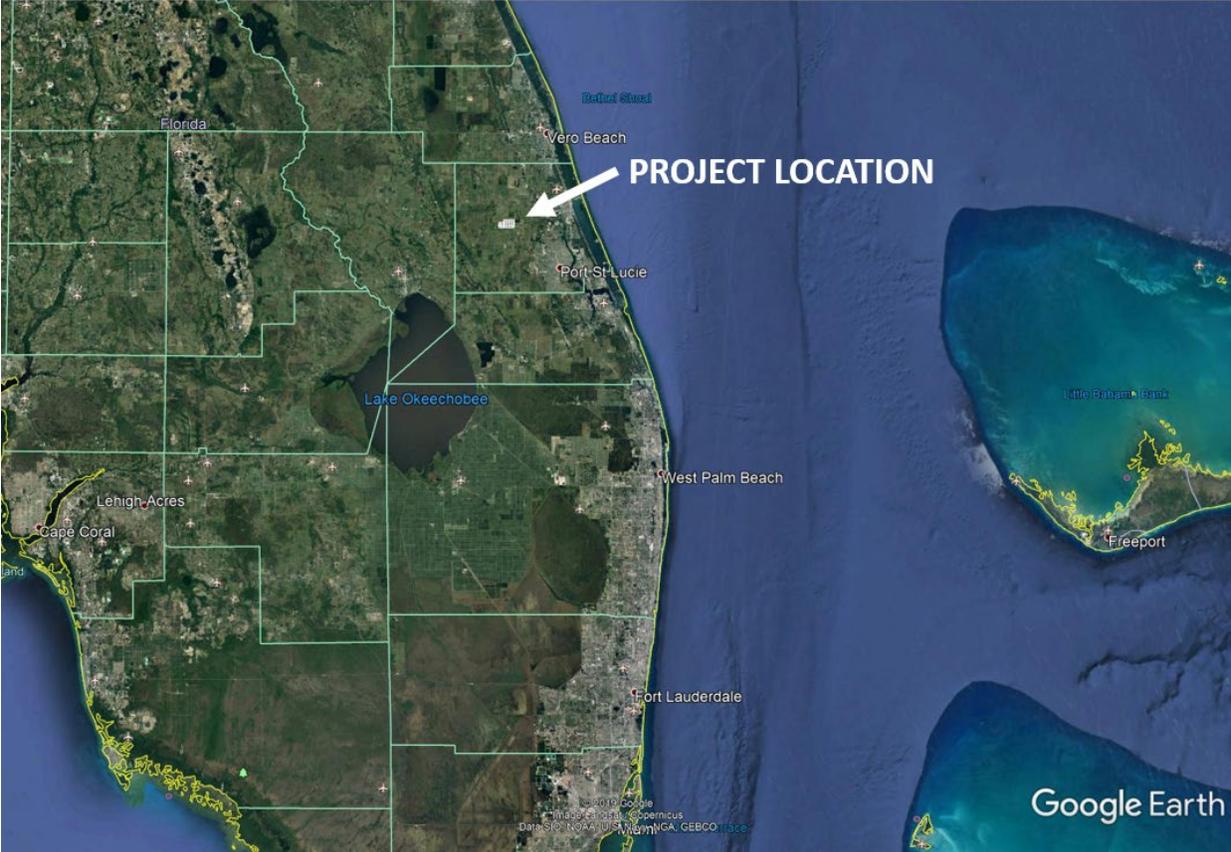
**e. Review Management Organization (RMO)**

SAD is designated as the Review Management Organization (RMO). The RMO, in cooperation with 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 Location and Name**

The C-23/C-24 STA Project is located in western St. Lucie County, Florida (Figures 1 and 2) and is about 2,600 acres. This project is a component of the IRL – South Project of the Comprehensive Everglades Restoration Plan (CERP). The C-23/C-24 STA is integrally linked with the C-24 North Reservoir. The following figures show the location and a simplified schematic (Figure 3) of the C-23/C-24 STA Project prior to detailed design of the intermediate plans & specifications (P&S).



*Figure 1: Project Location Overview Map*

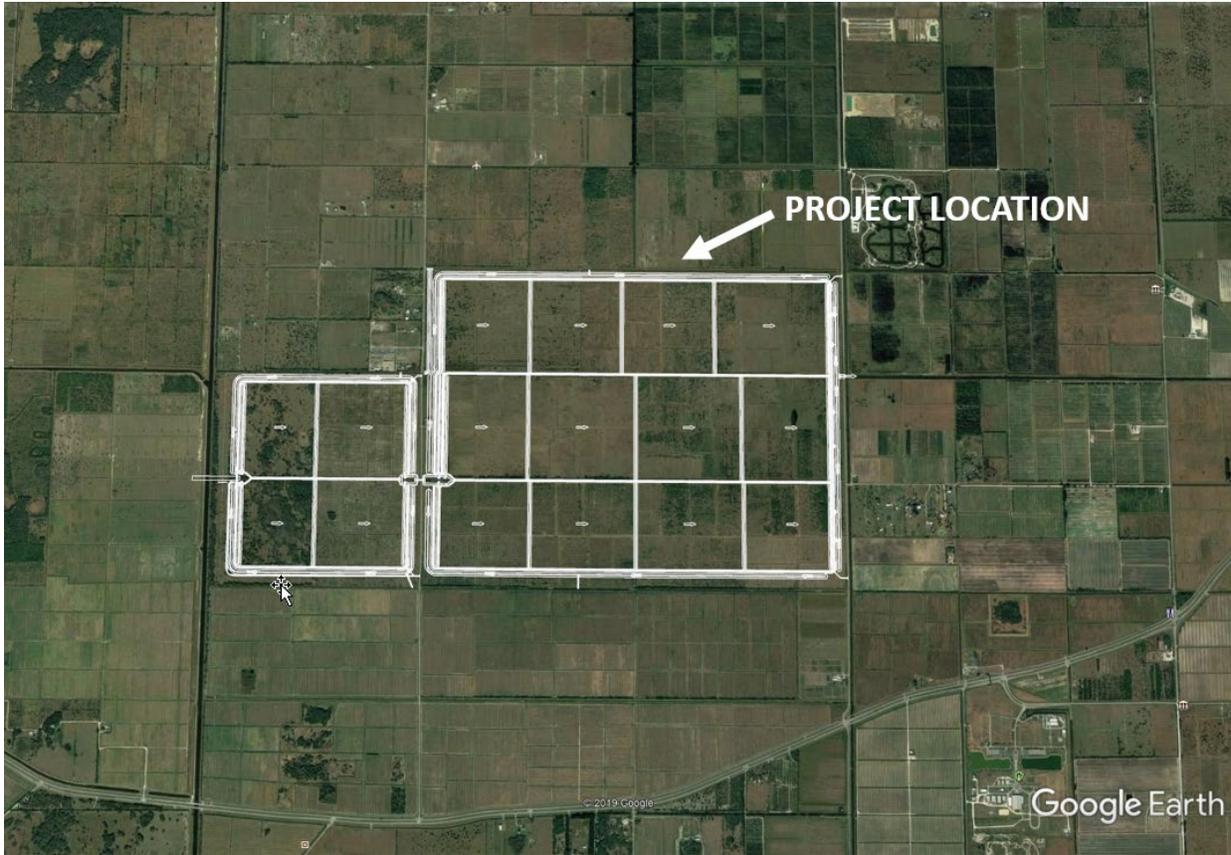


Figure 2: Project Location Map

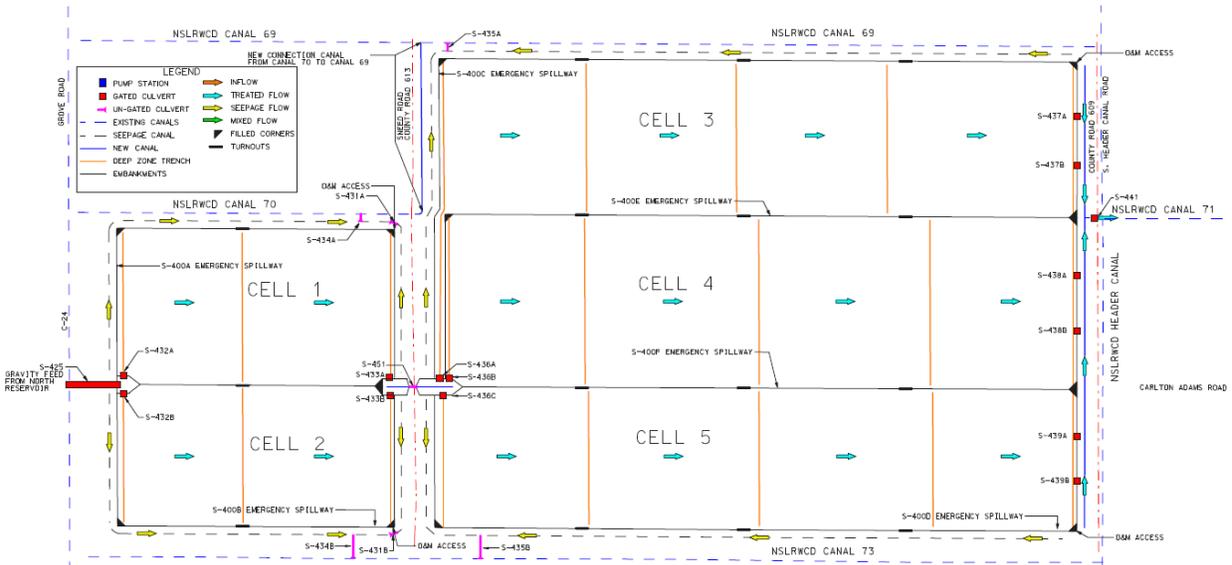


Figure 3: Simplified Project Schematic

**b. Project Authorization**

The IRL-South Project is one of the many projects authorized in the CERP. Congress authorized the IRL-South Project in Section 1001(14) of the Water Resources Development Act (WRDA) of 2007, Public Law (P.L.) 110-114, in accordance with Section 601 of WRDA 2000 and the recommendations of the Chief of Engineer’s Report. The authorized project is located in the counties of Martin, St. Lucie, and Okeechobee, Florida.

**c. Current Project Description**

The intent of the overall IRL-South Project is the restoration, preservation, and protection of the St. Lucie River, St. Lucie Estuary, southern portions of the IRL, and their associated watersheds, while providing for other water related needs of the region. The C-23/C-24 STA Project components include a 2,600-acre STA with a normal operating depth of 2 feet above the maximum highest graded elevation. The STA will be designed to remove 80% of the phosphorus from stormwater entering the C-23/C-24 North and South Reservoirs. The STA is configured with multiple cells to provide several scenarios of flows, depths, and treatment detention times. The STA is divided by County Road 613 with Cells 1 and 2 to the west and Cells 3, 4, and 5 to the east. Flow is from west to east with inflow starting at C-24 and outflow releases made into North St. Lucie River Water Control District (NSLRWCD) Canal 71. Outflow releases will be routed east through Canal 71 and then to Ten Mile Creek.

The planned design of the STA includes the following major features:

- Perimeter embankments,
- Interior berms,
- Boundary and seepage ungated culverts,
- Cell inflow and outflow gated culverts,
- Canal and road crossing ungated and gated culverts,
- Cell discharge drop structure intakes with vertical weir gated culverts,
- Distribution, collection, and perimeter canals, and
- Temporary pump station (contract option to be executed, if needed).

**d. Public Participation**

The SAJ’s Corporate Communications Office continually keeps the public informed on SAJ projects and activities. There are no controversial concerns, planned activities, public participation meetings, or workshops that could generate issues needing provision to review teams. The project RP will be posted on SAJ’s webpage. Any comments or questions regarding the RP will be addressed by SAJ.

**e. In-Kind-Contributions by Project Sponsor**

There are no required additional in-kind sponsor contributions related to the P&S and design documentation report (DDR) that could affect this RP or related reviews.

**f. Civil Works Cost Engineering Mandatory Center of Expertise (MCX) Review and 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 RP.

### **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 the P&S and DDR in accordance with SAJ's Engineering Division Quality Management System (EN QMS). The EN QMS 02611 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 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 DrChecks<sup>sm</sup>. The PQCR shall be quality control (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**

PED phase implementation documents are being prepared for the C-23/C-24 STA Project. Therefore, an intermediate and final ATR of the P&S and DDR documents for the design will be undertaken.

##### **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 intermediate and pre-final submittals.

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

ATR comments will be documented in the DrChecks<sup>sm</sup> model review documentation database. DrChecks<sup>sm</sup> is a module in the ProjNet<sup>sm</sup> suite of tools developed and operated at ERDC-CERL ([www.projnet.org](http://www.projnet.org)). At the conclusion of the 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 DrChecks<sup>sm</sup> 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 be a professional outside SAD with extensive experience in preparing Civil Works documents and conducting ATRs. The ATR Team Leader shall have 10 or more years of experience with Civil Works projects and have performed ATR Team Leader duties on complex Civil Works projects. The ATR Team Leader can also serve as one of the review disciplines.

Hydrology and Hydraulics (H&H): The H&H team member(s) shall be a registered professional engineer or hydrologist with 10 or more years of experience in conducting and evaluating hydrologic and hydraulic analyses for ecosystem restoration and flood risk management projects. Experience with Hydrologic Engineering Center (HEC) HEC-HMS hydrologic and HEC-RAS (1D/2D) hydraulic modeling is required. Experience with the USACE Levee/Dam Safety Program is required. Experience with MODFLOW groundwater modeling in evaluating seepage impacts from reservoirs / above ground impoundments is required (this requirement could potentially be addressed by the Geotechnical team member, if qualified). Experience in evaluating wind-wave analyses of reservoirs / above ground impounds using modeling platforms like STWAVE or similar is preferred.

Geotechnical: The Geotechnical team member shall be a registered professional engineer and have 10 or more years of experience in geotechnical engineering. Team member shall be experienced in dam and/or levee design, post-construction evaluation, and rehabilitation. Experience shall include geotechnical evaluation of flood risk management structures. Experience shall encompass design and selection of appropriate analyses for embankments, filter drains, and structure foundations. Experience with the USACE Levee/Dam Safety Program is required.

Structural: The Structural team member shall be a registered professional engineer and have 10 or more years of experience in structural engineering. Team member shall be experienced in structures associated with dam and/or levee design such as culverts. Experience shall include structural evaluation of flood risk management structures. Experience shall encompass design and selection of appropriate analyses for culverts.

Mechanical: The Mechanical team member shall be a registered professional engineer and have 10 or more years of experience in mechanical engineering. Team member shall be experienced in structures associated with dam and/or levee design such as culverts.

Electrical: The Electrical team member shall be a registered professional engineer and have 10 or more years of experience in electrical engineering. Team member shall be experienced in structures associated with dam and/or levee design such as culverts.

Civil: The Civil team member shall be a registered professional engineer and have 10 or more years of experience in the design, layout, and construction of flood control structures including dams. Team member shall have demonstrated knowledge regarding hydraulic structures, erosion control, earthwork, and concrete placement. Experience with the USACE Levee/Dam Safety Program is desired.

Construction: The Construction team member shall have 10 or more years of experience in the construction of flood control structures including dams and/or levees.

Climate Preparedness: The Climate Preparedness team member shall be certified by the Climate Preparedness and Resilience Community of Practice in CERCAP. Any ATR reviewer from a separate discipline may also serve as the Climate Preparedness reviewer provided the reviewer is certified.

National Environmental Policy Act (NEPA) Compliance: The NEPA Compliance team member shall have 7 or more years of experience in NEPA compliance activities and preparation of Environmental Assessments and Environmental Impact Statements for complex civil/site work projects.

## **5. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY (BCOES) 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 and ER 415-1-11.

## **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 WRDA of 2007 (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 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 managed and conducted outside the Corps of Engineers. In addition, following the expiration of Section 2035 of the WRDA, USACE issued memorandum "Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery" dated 5 April 2019 documenting the continued importance of Type II IEPR on high risk design and construction activities. The District Chief of Engineering, as the Engineer-In-Responsible-Charge, will make a risk-informed decision whether a project would benefit from a Type II IEPR and document the rationale to conduct or not conduct a Type II IEPR in the RP.

### **b. Type I Independent External Peer Review (IEPR) Determination.**

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

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

The District Chief of Engineering, as the Engineer-In-Responsible-Charge, has evaluated the C-23/C-24 STA Project against EC 1165-2-217 and memorandum "Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery" dated 5 April 2019, and has determined a Type II IEPR is not required, based on the results of the Risk-Informed Decision Process for Type II IEPR determination. For this RP, the factors in determining whether a review of design and construction activities of a project are considered necessary are as follows:

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

*This project is an area ecosystem component of the IRL – South Project with a normal operating depth of 2 feet above the maximum highest graded elevation. Failure of the embankment would not pose a significant threat to human life, since the resulting flood wave would quickly disperse to non-hazardous depths. The boundaries surrounding the STA cells have natural barriers and/or storage areas that will contain a flood wave resulting from an embankment failure and channel the released water to the surrounding canal network.*

- (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 works.*

- (3) The project design lacks redundancy.

*This project design does not require the addition of redundant project features or redundancy design considerations beyond those required of professional certification.*

(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 Corps of Engineers on 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. Once approved, SAJ will post the approved RP on the SAJ webpage for viewing by the public.

## 8. MODEL CERTIFICATION AND APPROVAL

The project does not use any engineering models that have not been approved for use by USACE. The following engineering models, software, and tools are anticipated to be used:

<b>Model</b>
Bentley Microstation V8i, Bentley Systems Inc, 2010
Bentley InRoads Microstation V8i, Bentley Systems, Inc.
HEC-UNET v4.0, USACE Hydraulic Engineering Center
HEC-HMS v.4.3
HEC-RAS v.5.0.7
HES-ResSim v.3.1
ICPR
HY-8
AdH
SMS v.11.0
GIS (ESRI ArcMap)
STWAVE Half Plane (Version 4.0)
ACES (Version 4.03)
Bretschneider
GNU Fortran Compiler
Compaq Visual Fortran (Professional Edition 6.1.0)
GeoStudio 2019 Version 10.0.0.17401
STAADPro v8.0
Ram Element Version 10.7

Table 1: Anticipated Engineering Models, Software, and Tools

**9. PROJECT DELIVERY TEAM DISCIPLINES**

<b>Discipline/Expertise</b>
Project ETL
Civil and Structural Engineering
Construction Manager
Geotechnical Engineering and Engineering Geology
Hydrologic and Hydraulic Engineering
Electrical Engineering
Mechanical Engineering
NEPA

Table 2: PDT Disciplines

## 10. BUDGET AND SCHEDULE

### a. Project Milestones.

Task	Start Date	End Date
Draft Intermediate P&S Complete	01-May-2020	01-May-2020
Intermediate P&S DQCR	01-May-2020	08-Jun-2020
Intermediate P&S PQCR	08-Jun-2020	13-Jul-2020
Intermediate P&S ATR	13-Jul-2020	27-Jul-2020
Evaluate ATR Comments	28-Jul-2020	31-Aug-2020
ATR Review Certification	9-Sept-2020	9-Sept-2020
Intermediate P&S BCOES	13-Jul-2020	17-Aug-2020
Draft Final P&S Complete	20-Nov-2020	20-Nov-2020
Final P&S DQCR	20-Nov-2020	11-Jan-2021
Final P&S PQCR	11-Jan-2021	15-Feb-2021
Final P&S ATR	15-Feb-2021	08-Mar-2021
Evaluate ATR Comments	09-Mar-2021	05-Apr-2021
ATR Review Certification	13-Apr-2021	13-Apr-2021
Final P&S BCOES	05-Apr-2021	24-May-2021
BCOES Certification	24-May-2021	24-May-2021
Contract Advertised	18-June-2021	18-June-2021

Table 3: Project Schedule Milestones

**b. ATR Cost.** Funds will be budgeted to execute ATR and the schedule as outlined above. It is envisioned that each reviewer will be afforded 20 hours review plus 8 hours for coordination. The ATR Team Leader will be funded for 20 hours. The estimated cost range is \$25,000 - \$30,000.

**11. POINTS OF CONTACT**

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

Table 4: Review Plan Point of Contacts

**ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

Table 5: Review Plan Revisions

**ATTACHMENT B: PARTIAL LIST OF ACRONYMS AND ABBREVIATIONS**

<b><u>Acronyms</u></b>	<b><u>Defined</u></b>
AFB	Alternatives Formulation Briefing
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability Review
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
EA	Environmental Assessment
EC	Engineering Circular
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
PED	Preconstruction Engineering and Design
PDT	Project Delivery Team
PM	Project Manager

<b><u>Acronyms</u></b>	<b><u>Defined</u></b>
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 Development Act

Table 6: Abbreviations

**ATTACHMENT C:**  
**C-23/C-24 Stormwater Treatment Area (STA) Project**  
**St. Lucie County, FL**

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

**ATR REPORT OUTLINE:**

- 1. Introduction:**
- 2. Project Description:**
- 3. ATR Team Members:**
  - ATR Team Leader.**
  - Civil Engineering.**
  - Construction Management.**
  - Geotechnical Engineering and Engineering Geology.**
  - Hydrology and Hydraulics.**
  - Structural Engineering.**
  - Mechanical Engineering.**
  - Electrical Engineering.**
  - Climate Preparedness.**
  - NEPA Compliance.**
- 4. ATR Objective:**
- 5. Documents Reviewed:**
- 6. Findings and Conclusions:**
- 7. Unresolved Issues:**

# COMPLETION OF AGENCY TECHNICAL REVIEW

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The Agency Technical Review (ATR) has been completed for the Preconstruction, Engineering and Design Phase Implementation for the C-23/C-24 Stormwater Treatment Area (STA) Project, a component of the Indian River Lagoon (IRL) – South Project, St. Lucie County, Florida, including the design documents, plans and specifications (P&S), and Design Documentation Report (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<sup>sm</sup>.

\_\_\_\_\_  
NAME  
ATR Team Leader

\_\_\_\_\_  
Date

\_\_\_\_\_  
NAME  
Engineering Technical Lead  
CESAJ-EN-QC

\_\_\_\_\_  
Date

\_\_\_\_\_  
Review Management Office Representative  
CESAD-RBT

\_\_\_\_\_  
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.

\_\_\_\_\_  
Chief, Engineering Division  
SAJ-EN

\_\_\_\_\_  
Date