



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

17 May 2019

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for the Preconstruction, Engineering, and Design (PED) Phase Implementation Documents for the San Juan Harbor Channel Deepening and Widening Project, San Juan, Puerto Rico

1. References:

a. Memorandum, CESAJ-EN-Q, 9 May 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 PED documents for the San Juan Harbor Channel Deepening and Widening 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 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].

[REDACTED]
Director of Programs



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

59 MAY 2019

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 Preconstruction, Engineering, and Design Phase Implementation Documents of the San Juan Harbor Channel Deepening and Widening Project, San Juan, Puerto Rico

1. References.

- a. Engineering Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 Feb 18.
- b. Energy and Water Development Appropriations Act of 2006, Public Law 109-103, 19 Nov 05.

2. I hereby request approval of the enclosed Review Plan for the Preconstruction, Engineering, and Design Phase Implementation Documents of San Juan Harbor Channel Deepening and Widening 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

[REDACTED]
COL, EN
Commanding

PROJECT REVIEW PLAN

For

Preconstruction, Engineering and Design Phase Implementation Documents

For

San Juan Harbor Channel Deepening and Widening Project

**San Juan, Puerto Rico
Project P2 Number: 443841**

**Jacksonville District
April 2019**



**US Army Corps
of Engineers®**

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, JACKSONVILLE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.

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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 San Juan Harbor Channel Deepening and Widening Project, San Juan, 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 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, San Juan Harbor, Puerto Rico, P2 Number 443841
- (7). Final Integrated Feasibility Report and Environmental Assessment, San Juan Harbor Navigation Improvements Study, August 2018
- (8). Chief of Engineers Report, San Juan Harbor, Puerto Rico, 23 August 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, 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 or their designee 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 Commander's approval memorandum, will be posted on the SAJ's Review Plan public webpage. The latest Review Plan will be provided to the 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 Location

San Juan Harbor is located on the northeast coast of Puerto Rico (Figure 1) and is the island's primary deep-draft harbor for the commonwealth and a transshipment center to many neighboring islands of the Antilles. The majority of the Commonwealth's waterborne cargo and cruise ships pass through San Juan Harbor. In 2015, approximately 78% of the Commonwealth's non-petroleum and non-coal waterborne commerce came through the harbor. Additionally, San Juan Harbor provides the only natural harbor offering all-weather protection to shipping along the entire north coast.



Figure 1: Project Location

b. Project Authorization

Authorization for San Juan Harbor Improvements was provided in the Energy and Water Development Appropriations Act, 2006 (P.L. 109–103) to initiate design of the San Juan Harbor, Puerto Rico Project for commercial navigation.

c. Current Project Description

The existing Federally maintained channels serving San Juan Harbor's major terminals are currently authorized to a depth of -40 feet MLLW for Army Terminal, -39 feet MLLW for Puerto Nuevo, -36 feet MLLW for Graving Dock, -36 feet MLLW for San Antonio Approach, -36 feet MLLW for the San Antonio, -36 feet MLLW for the San Antonio Channel Extension, and -36 feet MLLW for the Cruise Ship Basin East (Figure 2). Currently medium range petroleum

tankers must reduce their cargo capacity by loading lighter than their design draft allows or light load to access terminals at Army Terminal Channel. The existing dimensions of those channels place constraints on deeper-drafting petroleum tankers, which result in reduced efficiency and increased costs.

A feasibility study for navigation improvements to San Juan Harbor completed in 2018 analyzed the beneficial and adverse effects associated with various alternatives that would increase the channel dimensions or apply nonstructural measures and balances the economic, environmental, and engineering considerations.



Figure 2: Project Map

The feasibility report described the recommended plan (Figure 3) as:

- Deepens Cut-6 of the Bar Channel to 46 feet to maintain the existing 2-foot squat and wave allowance.
- Deepens the Anegado Channel, Army Terminal Channel, and Army Terminal Turning Basin to 44 feet to support petroleum product tankers.
- Widens the Army Terminal Channel by 100 feet, effectively increasing the channel width from 350 feet to 450 feet, supporting petroleum tankers and LNG vessels.
- Provides eastern and western flares at the intersection of the Army Terminal Channel and the Army Terminal Turning Basin.

- Deepens the San Antonio Approach Channel, San Antonio Channel, San Antonio Channel Extension, and Cruise Ship Basin East to the authorized 36 foot depth to resolve inefficiencies for vessels transiting these channels, primarily cruise vessels.
- Includes a 1,050-foot extension east of the San Antonio Channel in order to accommodate the terminal operators' needs for additional depth in this portion of San Juan Harbor.

All dredged material will be placed in the existing Ocean Dredged Material Disposal Site (ODMDS) or beneficially used to fill dredged holes in the Condado Lagoon to restore Submerged Aquatic Vegetation (SAV) habitat. Recent surveys have shown that approximately 2.2 million cubic yards (CY) of material will be excavated during the initial construction of the recommended plan.



Figure 3: Recommended Plan

d. Public Participation

SAJ's Corporate Communications Office continually keeps the effected public informed on SAJ projects and activities. The approved Review Plan will be posted on the SAJ's Review Plan public webpage. Any comments or questions regarding the Review Plan will be addressed by the 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

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 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

PED phase implementation documents are being prepared. Therefore, an ATR of P&S and DDR documents will be undertaken for the pre-final design of the project.

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.

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 SAJ. The ATR Team Leader will be a USACE employee outside the SAD. 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 comment resolution.

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 5 years of experience with navigation projects and have performed ATR Team Leader duties. 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 and shall have a minimum of 5 years of experience in geotechnical engineering and engineering geology. Experience needs to encompass geologic and geotechnical analyses that are used to support the development of P&S for navigation projects where new work material is to be dredged. In addition, experience with underwater material placement for SAV habitat is desirable.

Civil Engineering. The team member shall have a minimum of 10 years of civil/site work project experience that includes dredging and disposal operations and marine construction features. Experience shall include design of at least one new work dredging project.

Environmental Compliance. The team member shall have 5 years of experience in National Environmental Policy Act (NEPA) compliance activities and preparation of Environmental Assessments (EA) and Environmental Impact Statements (EIS) for navigation or shore protection projects. Underwater material placement and SAV habitat construction experience are desired.

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 consists of channel dredging and failure of the navigation channel will not 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 Corps of Engineers on other similar works.

- (3) The project design lacks redundancy.

The concept of redundancy does not apply to channel dredging 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 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

This project will not use any engineering models that have not been approved for use by USACE. The Channel Analysis and Design Evaluation Tool (CADET) was used to determine the optimum dredge depths for the project.

9. PROJECT DELIVERY TEAM DISCIPLINES

| PDT Disciplines |
|----------------------------------|
| Geomatics & Survey |
| Civil Site Design / Construction |
| Geotechnical Engineering |
| Environmental Engineering |
| Geology |

10. BUDGET AND SCHEDULE

a. Project Schedule.

A preliminary project schedule is shown in the table below and will be updated once definitive dates are known.

| Task | Start Date | End Date |
|---------------------|---------------|---------------|
| DQCR | Q2 FY20 | Q2 FY20 |
| PQCR/DQC* | Q2 FY20 | Q2 FY20 |
| ATR Review | Q3 FY20 | Q3 FY20 |
| ATR Certification | Q3 FY20 | Q3 FY20 |
| BCOES Review | Q4 FY20 | Q4 FY20 |
| BCOES Certification | August 2020 | August 2020 |
| Award | November 2020 | November 2020 |

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

b. ATR Cost.

Funds will be budgeted for an ATR as outlined above. It is envisioned that each reviewer will be afforded 40 hours for the review plus 12 hours for coordination. The estimated cost range for the ATR is \$40,000-\$45,000.

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 |
| DQC | District Quality Control |
| DQCR | Discipline Quality Control Review |
| EC | Engineering Circular |
| EA | Environmental Assessment |
| ER | Engineering Regulation |
| 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 |
| PMP | Project Management Plan |

| <u>Acronyms</u> | <u>Defined</u> |
|-----------------|---|
| 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

San Juan Harbor Deepening and Widening

San Juan, Puerto Rico

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.
Geotechnical Engineering and Engineering Geology.
Civil Engineering.
Environmental Compliance.
4. ATR Objective:
5. Documents Reviewed:
6. Findings and Conclusions:
7. Unresolved Issues:

Enclosures:

1. ATR Statement of Technical Review
2. ATR Comments (DrCheckssm)

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) for San Juan Harbor Deepening and Widening, San Juan, 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