



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

CESAD-PDP

6 July 2019

MEMORANDUM FOR Commander, Jacksonville District, 701 San Marco Blvd,
Jacksonville, Florida 32207-8175

SUBJECT: Approval of Review Plan and Type I IEPR Decision for Rio Grande de Arecibo
Flood Control Project, Puerto Rico, Validation Report

1. References:

a. Memorandum, CESAJ-PD, 12 June 2019, subject: Rio Grande de Arecibo Flood
Control Project, Puerto Rico, Continuing Construction Validation Report Review Plan
Submittal for Major Subordinate Command Approval.

b. Memorandum, CESPDP-PDP (FRM-PCX), 3 June 2019, subject: Review Plan
Endorsement for the Rio Grande de Arecibo Flood Control Project, Puerto Rico, Validation
Report.

c. Memorandum, CECW-P, 7 June 2018, subject: Revised Delegation of Authority in
Section 2034(a)(5)(A) of the Water Resources Development Act of 2007 (WRDA 2007), as
amended (33 U.S.C. 2343).

2. Jacksonville District prepared the review plan for the Rio Grande de Arecibo Flood Control
Project Validation Report consistent with EC 1165-2-217. The District coordinated the review
plan with the Flood Risk Management Planning Center of Expertise (FRM-PCX), which is a
lead office to execute this review plan. For further information, contact FRM-PCX at (415)
503-6852.

3. I approve this review plan (enclosed) and concur with the level and scope of review
identified and supported in the review plan, including the decision to not perform Type I IEPR.
The study will not significantly benefit from Type I IEPR because the study scope is extremely
limited.

4. The point of contact for this action is Acting Chief, Planning and Policy Division,
404-562-5226.

Encl
as

Brigadier General,
USA Commanding

REVIEW PLAN

June 2019

Project Names: *Rio Grande de Arecibo, Puerto Rico*

P2 Numbers: *Rio Grande de Arecibo - 012335*

Decision Document Type: *Validation Report*

Project Type: *Flood Risk Management*

District: *Jacksonville District*

District Contact: *Planning Technical Lead, 904-232-1061*

Major Subordinate Command (MSC): *South Atlantic Division*

MSC Contact: *Senior Plan Formulator, 404-562-5226*

Review Management Organization (RMO): *Flood Risk Management National Planning Center of Expertise*

RMO Contact: *Deputy Director, 415-503-6852*

Key Review Plan Dates

Date of RMO Endorsement of Review Plan:	<i>3 Jun 19</i>
Date of MSC Approval of Review Plan:	<i>Pending</i>
Date of IEPR Exclusion Approval:	<i>N/A</i>
Has the Review Plan changed since PCX Endorsement?	<i>N/A</i>
Date of Last Review Plan Revision:	<i>None</i>
Date of Review Plan Web Posting:	<i>Pending</i>
Date of Congressional Notifications:	<i>Pending</i>

Milestone Schedule

	Scheduled	Actual	Complete
District Quality Control (DQC)	<i>17 Dec 19</i>	<i>28 Jan 2019</i>	<i>Yes</i>
Initiate ATR/MSC/HQ Review:	<i>22 Feb 19</i>	<i>22 Mar 2019</i>	<i>No</i>
Initiate NEPA/Public Review	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Final Report Transmittal:	<i>24 Jun 19</i>	<i>(enter date)</i>	<i>No</i>
Chief's Report or Director's Report:	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>

Project Fact Sheet

May 2019

Project Name: *Rio Grande de Arecibo, Puerto Rico, Project*

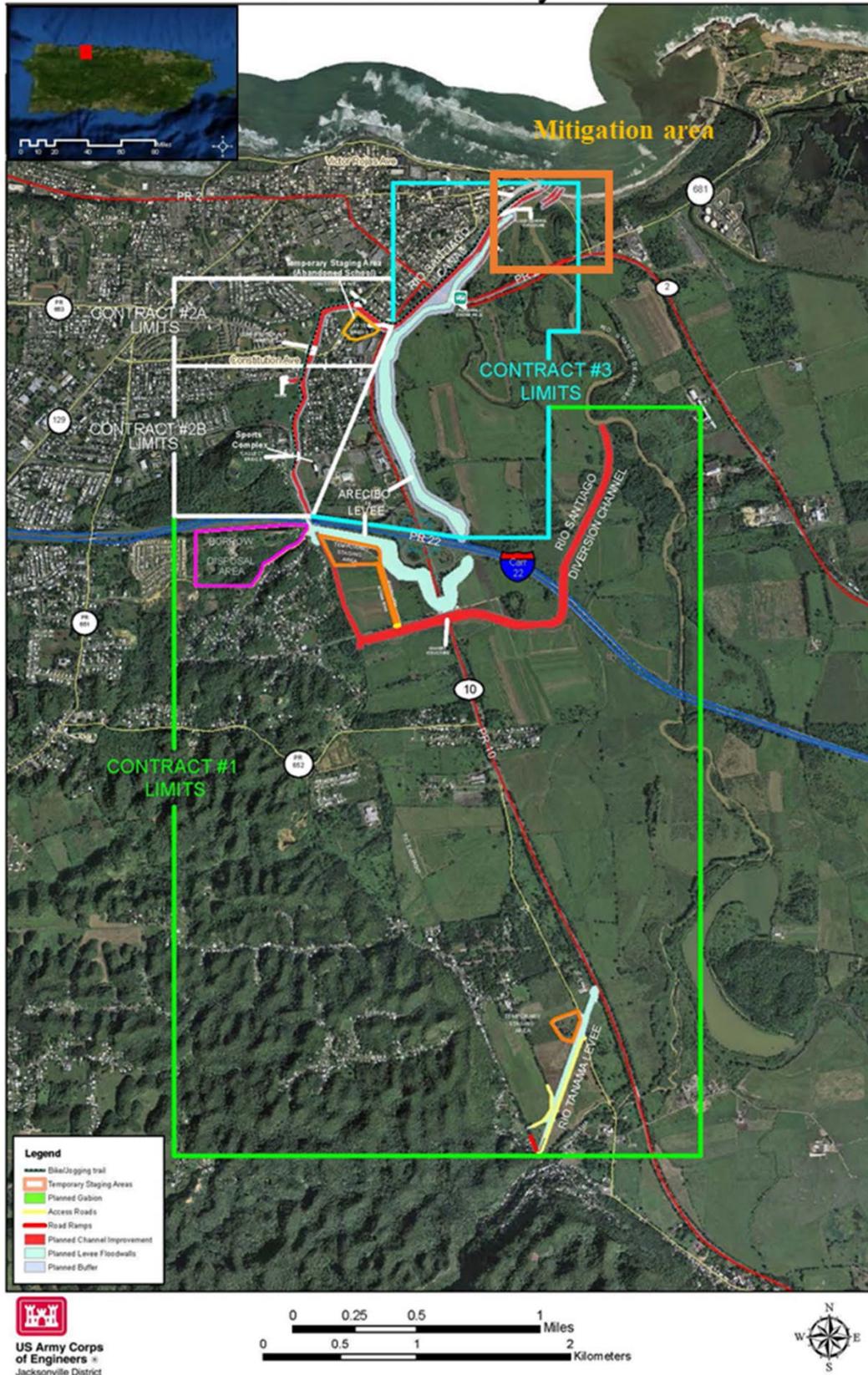
Purpose of Validation Reports: *The Rio Grande de Arecibo project construction had been suspended because the project cost was very close to exceeding the 902 limit when the Bipartisan Budget Act (BBA) of 2018 was passed. The BBA provides an opportunity to complete construction of the Rio Grande de Arecibo Flood Control Project. At the time the BBA was passed the team was seeking an increase in the 902 limit via a Limited Reevaluation Report. Since the 902 limit was waived by the BBA, the team changed direction and initiated preparation of a validation report to document construction strategies that could be implemented using the full funds allocated under the BBA. The purpose of the report is to update total project costs and economic analysis (level 1) to FY19 cost levels and to show the costs of the features being recommended for continued construction and to verify environmental compliance and engineering feasibility based on the authorized Rio Grande de Arecibo Feasibility Report and Environmental Impact Statement (FR/EIS) (1994). The Rio Grande de Arecibo Validation Report is not considered a project study because it seeks to validate an existing project, there is no reformulation, new engineering or new environmental compliance as part of the effort.*

It is important to note that the St. Louis District with assistance from Jacksonville District (SAJ) is preparing plans and specifications (P&S) for the construction contracts while SAJ is completing the validation report. The effort was presented and supported by South Atlantic Division (SAD). A separate review plan is being completed to document the review requirements for preconstruction engineering and design (PED) and construction. The PED review plan will help ensure a quality-engineering project is developed by the Corps of Engineers (USACE) in accordance with EC 1165-2-217. The PED review plan will be submitted for endorsement to the RMC and will include District Quality/Quality Assurance (DQC), Agency Technical Review (ATR), Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review, Safety Assurance Review (SAR), and Policy and Legal Compliance Review.

Location:

Rio Grande de Arecibo Project: The project area includes the lower Rio Grande de Arecibo coastal floodplain north of the confluence with Rio Tanama, and is concentrated on flood damage reduction in the urban flood prone area of the municipality of Arecibo. See Figure 1.

Rio Grande de Arecibo Post-Authorized Project



Authority:

Rio Grande de Arecibo Project:

The FR/EIS was approved by the Chief of Engineers on April 5, 1994. The Rio Grande de Arecibo Flood Control project was authorized under Section 101(a)(26) of the Water Resources Development Act of 1996:

SEC. 101. PROJECT AUTHORIZATIONS.

(a) PROJECTS WITH CHIEF'S REPORTS.—Except as provided in this subsection, the following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, described in the respective reports designated in this subsection:

(26) RIO GRANDE DE ARECIBO, PUERTO RICO. — The project for flood control, Rio Grande de Arecibo, Puerto Rico: Report of the Chief of Engineers, dated April 5, 1994, at a total cost of \$19,951,000, with an estimated Federal cost of \$10,557,000 and an estimated non-Federal cost of \$9,394,000.

Sponsors:

Rio Grande de Arecibo, Puerto Rico, Project: *The non-Federal sponsor for this project is the Puerto Rico Department of Natural and Environmental Resources (DNER)*

Type of Studies: *Emergency Supplemental Validation Report*

SMART Planning Status: *This effort is an Emergency Supplemental Validation Report to document the information required to support a decision using supplemental appropriations to proceed to project construction as previously approved as part of the Flood Control Project.*

Project Description:

The Rio Santiago flows through the middle of the southeastern part of the urbanized area, and is the main drainage feature for the section of the municipality of Arecibo. The basin covers approximately 487 square kilometers and is one of the largest drainage basins in Puerto Rico. The authorized project would provide flood risk reduction for the 100-year flood event for the municipality of Arecibo and Los Caños area due to overflows from Rio Grande de Arecibo, Rio Tanama and Rio Santiago. The authorized project includes the construction of 5,640 meters of levees, 15 meters of concrete floodwall, 300 meters of cellular floodwall, 3,400 meters of channel improvements, 2,900 meters of channel diversion, one drainage structure, one rock jetty, 7.2 acres of mangrove restoration, and the replacement of five highway bridges. The Supplemental Appropriations for Disaster Relief Requirements Act provides an opportunity to continue construction of the Rio de Arecibo Flood Control Project. The Rio de Arecibo Emergency

Supplemental Validation Report is intended to document the updated engineering and environmental conditions, total project costs, and economic analysis in order to support construction of the remaining features of the project. The report will present the overall cost of remaining unconstructed elements of the authorized project and benefits. Should that cost exceed current project funding estimates associated with the BBA, a re-scoped effort will be undertaken to determine if a lesser project plan can provide flood risk reduction consistent with the authorized project.

Problem Statement:

The project is authorized, and construction has been suspended for the past several years while Corps of Engineers was seeking a Water Resources Development Act of 1986, Section 902 increase. A Limited Reevaluation Report (LRR) approved in 1998, confirmed no significant changes to the authorized project and that it was still economically justified to address the significant flooding impacts in the Municipality of Arecibo. In 2004, a supplemental Environmental Assessment for the borrow area was circulated and a Finding of No Significant Impacts (FONSI) was signed. The construction of Contract 1 (the Arecibo and Tanama levees and the Rio Santiago diversion channel) was initiated in 2005, completed in 2011, and turned over to the Sponsor for continued operation and maintenance in 2012. Plans and Specifications for Contract 2A are complete for the design of three bridges and part of Rio Santiago channel. The Sponsor initiated land acquisition for Contract 2A in FY 2008. Construction of the remaining features of the Rio Grande de Arecibo Project hasn't been executed due to lack of funding. See Figure 1 for the Project contracts.

The scope of the Validation Report is not expected to require any project reformulation and will focus on three primary factors: economic justification, environmental acceptability and technical feasibility, while validating that the previously approved project features continue to be appropriate to meet the project's needs.

Federal Interest:

This project is a previously authorized Federal Flood Control Project that established Federal interest. The basin problems of flood risk still persist today. The project was under construction and there is still Federal participation. There is continued Federal interest to complete the authorized project to reduce flood risk within the basin.

Risk Identification:

The risks associated with this project includes potential implementation risks (cost and schedule), outcome risks and residual risks. There are two broad outcome risks associated with projects that include levees and reducing the threat of flooding in an area: 1) increased flood hazards associated with levee failures, this outcome is highly unlikely (very low probability), and 2) increased development in the floodplain, while this is certainly not the intent of this project, it is always a risk of any FRM project. The team is not aware of any other outcome risks specific to this project. The project will utilize the same design and construction techniques that were promoted in the original project report. The project will not be justified by life safety nor does it involve significant threat to human life/safety assurance. Failure of the project would not pose a

significant threat to human life. The project will reduce the existing potential for life/safety issues during flood events. However, the project is justified primarily by the reduction in damages associated with recurring flooding of structures within the project impact footprint.

A Safety Assurance Review (SAR), also known as a Type II Independent External Peer Review (IEPR), may be required for implementation documents and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. A risk-informed decision, as described in EC 1165-2-217, is made as to whether a SAR is appropriate. SARs are managed outside the USACE and shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

The District Chief of Engineering has made a risk-informed decision that this project poses a significant threat to human life (public safety) in the event of levee and bridge failure. Therefore, during PED, a SAR will be performed for each of the contracts and a SAR will be performed during construction.

1. FACTORS AFFECTING THE LEVELS OF REVIEW

Scope of Review. Due to the fact that the Rio Grande de Arecibo Validation Report is not a project study, the highest level of technical review required will be Agency Technical Review (ATR). The project is currently in the construction phase and this report focuses on the validation of the unconstructed elements of the authorized project. There is no reformulation, no new engineering, or no new environmental compliance and therefore does not require a Type 1 IEPR. The project is currently under construction and this report only focuses on implementation strategies to complete construction. The level of review required was discussed with South Atlantic Division (SAD), the Risk Management Center (RMC), and the Flood Risk Management Planning Center of Expertise (FRM-PCX). It is important to note the District Quality Control and District Legal reviews have been completed and certified along with the cost certification from the Cost Center of Expertise (CX) by Walla Walla District.

- Will the study likely be challenging?
The project is authorized and currently in the construction phase. Construction was however paused as the team sought a Section 902 increase prior to the BBA. The project will utilize the same design with some refinements and optimizations, and construction techniques that were promoted in the original project reports previously coordinated with the public.
- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.

Currently, significant urban flooding occurs within the study areas with each significant storm/precipitation event. The project features proposed in the original study were designed to address the situation. If, at some point after construction, one of the levees fails during an extreme rainfall event, the subsequent flooding would likely be much worse

than it would have been in the without project condition. Though this outcome is highly unlikely (very low probability), the consequences of this outcome could be large and adverse. Therefore, it is a risk that should be acknowledged.

- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues?

The project will not be justified by life safety; however, the District Chief of Engineering has made a risk-informed decision that this project poses a significant threat to human life (public safety) in the event of levee and bridge failure. Therefore, during PED, a SAR will be performed for each of the contracts (Contract2AA and Contract 3). Products that will undergo SAR include the P&S and DDR prepared during the Final Design Phase, as well as construction documents at the mid-point of construction.

- Has the Governor of an affected state requested a peer review by independent experts?
The Governor of Puerto Rico hasn't requested a peer review by independent experts.

- Will the project likely involve significant public dispute as to the project's size, nature, or effects?

No significant public dispute is anticipated based on the previous history of the project.

- Is the project/study likely to involve significant public dispute as to the economic or environmental cost or benefit of the project?

No significant public dispute to the economic or environmental costs or benefits is anticipated.

- Is the information in the decision document or anticipated project design likely to be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?

The information in the study documents demonstrates that the project design is not based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The project will use the same design and construction techniques that were previously proposed and on similar projects.

- Does the project design require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design/construction schedule?

The proposed project design does not require any additional redundancy, resilience, or robustness.

- Is the estimated total cost of the project greater than \$200 million?

No, the estimated project cost of this project does not exceed \$200M.

- Will an Environmental Impact Statement be prepared as part of the study?

The Rio Grande de Arecibo Feasibility Report and Environmental Impact Statement was completed in July 1993 and the Record of Decision (ROD) signed in 1994. The Certification of Consistency with the Puerto Rico Coastal Management Program was received in November 1992 and the Water Quality Certificate from the Puerto Rico Environmental Quality Board (EQB) was received in November 1995. Consultation with the Fish and Wildlife Service (FWS) pursuant to Section 7 of the Endangered Species Act (ESA) was concluded in June 1991. A Supplemental Environmental Assessment for the borrow area was circulated and a Finding of No Significant Impact (FONSI) was signed in 2004.

Updates on the environmental compliance status will be included in the validation report.

- Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources?

The identification and evaluation of historic properties for the Rio Grande de Arecibo project has been conducted in a phased process. Due to the size and scope of the area of potential effects (APE), each Contract has been subject to separate consultation and consideration of project effects to historic properties during PED and based on final designs or modifications of project features. Two archaeological sites, AR38 and AR39, were identified in the Rio Tanama levee project area. Based on archeological testing and in consultation with the Puerto Rico State Historic Preservation Officer (SHPO), the USACE determined that both archaeological sites met the criteria of eligibility for inclusion for the National Register of Historic Places (NRHP). The USACE and the SHPO executed a Memorandum of Agreement (MOA) dated June 15, 2005 to mitigate for the adverse effects to AR38 and AR39 caused by construction of the levee. Archaeological data recovery was conducted between June 16 and July 19, 2005. A final report was prepared and submitted in July 2008 to finalize the MOA. Compliance with Section 106 of the National Historic Preservation Act is complete for the constructed portions of the project; however, cultural resources surveys and coordination with the SHPO is required for all remaining contracts to be issued for the remainder of the project.

- Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures?

The project is not expected to have substantial adverse impacts on fish and wildlife species. Agency consultations will be held and documented for the review process.

- Is the project expected to have, before mitigation measures, more than a negligible adverse impact on an endangered or threatened species or their designated critical habitat?

No, the original EIS did not identify any adverse impacts to threatened or endangered listed species nor critical habitat within the project area. An updated analysis will be conducted during PED.

2. REVIEW EXECUTION PLAN

This section describes each level of review to be conducted. Based upon the factors discussed in Section 1, this study will undergo the following types of reviews:

District Quality Control. All decision documents (including data, analyses, environmental compliance documents, etc.) undergo DQC. This internal review process covers basic science and engineering work products. It fulfills the project quality requirements of the Project Management Plan.

Agency Technical Review. ATR is performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. These teams will be comprised of certified USACE personnel. The ATR team lead will be from outside the home Major Subordinate Command (MSC). If significant life safety issues are involved in a study or project a safety assurance review should be conducted during ATR.

Independent External Peer Review. Type I IEPR may be required for decision documents under certain circumstances. This is the most independent level of review, and is applied in cases that meet criteria where the risk and magnitude of the project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision is made as to whether Type I IEPR is appropriate.

Cost Engineering Review. All decision documents shall be coordinated with the Cost Engineering Mandatory of Expertise (MCX). The MCX will assist in determining the expertise needed on the ATR and IEPR teams. The MCX will provide the Cost Engineering certification. The RMO is responsible for coordinating with the MCX for the reviews. These reviews typically occur as part of ATR.

Model Review and Approval/Certification. EC 1105-2-412 mandates the use of certified or approved models for all planning work to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions.

Policy and Legal Review. All decision documents will be reviewed for compliance with law and policy. ER 1105-2-100, Appendix H provides guidance on policy and legal compliance reviews. These reviews culminate in determinations that report recommendations and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. These reviews are not further detailed in this section of the Review Plan.

Table 1 provides the schedules and costs for reviews. The specific expertise required for the teams are identified in later subsections covering each review. These subsections also identify requirements, special reporting provisions, and sources of more information.

Table 1: Levels of Review

Product(s) to undergo Review	Review Level	Start Date	End Date	Cost	Complete
<i>Validation Report</i>	<i>DQC</i>	<i>14 DEC 2018</i>	<i>10 JAN 2019</i>	<i>\$15,000</i>	<i>No</i>
<i>Validation Report</i>	<i>ATR with concurrent MSC & HQ Review</i>	<i>22 FEB 2019</i>	<i>22 MAR 2019</i>	<i>\$25,000</i>	<i>No</i>

a. DISTRICT QUALITY CONTROL

The home district shall manage DQC and will appoint a DQC Lead to manage the local review (see EC 1165-2-217, section 8.a.1). The DQC Lead should prepare a DQC Plan and provide it to the RMO and MSC prior to starting DQC reviews. Table 2 identifies the required expertise for the DQC team.

Table 2: Required DQC Expertise

DQC Team Disciplines	Expertise Required
<i>DQC Lead</i>	<i>A senior professional with extensive experience preparing Civil Works decision documents and conducting DQC. The lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc.).</i>
<i>Economics</i>	<i>A senior economist with demonstrated experience evaluating flood risk management project benefits and costs. Experience with evaluating the appropriateness of cost effectiveness and incremental cost analysis (CE/ICA), as applied to dollar costs & ecosystem restoration benefits; familiarity with the USACE tool IWR-PLAN. Experience in identifying incidental benefits (preferably flood risk management and water supply) is required.</i>
<i>Environmental Resources/NEPA Compliance</i>	<i>A senior biologist/ecologist/environmental engineer, preferably with experience in flood risk management and familiarity with freshwater, coastal and estuarine systems. They must be able to review for NEPA compliance (including cultural resources coordination) and quality and applicability of ecosystem benefits evaluations.</i>
<i>Civil Engineering</i>	<i>The team member should be a registered professional engineer with experience in civil/site work.</i>
<i>Cost Engineering</i>	<i>The team member should be a registered professional with experience in cost engineering.</i>

Documentation of DQC. Quality Control should be performed continuously throughout the study. A specific certification of DQC completion is required at the draft and final report stages. Documentation of DQC should follow the District Quality Manual and the MSC Quality Management Plan. An example DQC Certification statement is provided in EC 1165-2-217, page 19, Figure F.

Documentation of completed DQC should be provided to the MSC, RMO and ATR Team leader prior to initiating an ATR. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort. Missing or inadequate DQC documentation can result in delays to the start of other reviews (see EC 1165-2-217, section 9).

b. AGENCY TECHNICAL REVIEW

The ATR will assess whether the analyses are technically correct and comply with guidance, and that documents explain the analyses and results in a clear manner. An RMO manages ATR. The review is conducted by an ATR Team whose members are certified to perform reviews. Lists of certified reviewers are maintained by the various technical Communities of Practice (see EC 1165-2-217, section 9(h)(1)). Table 3 identifies the disciplines and required expertise for this ATR Team.

Table 3: Required ATR Team Expertise

ATR Team Members/Disciplines	Expertise Required
<i>ATR Lead</i>	<i>The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and similar studies and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as the reviewer for a specific discipline.</i>
<i>Economics</i>	<i>An economist that is certified to perform ATR with demonstrated experience evaluating flood risk management project benefits and costs. Experience with evaluating the appropriateness of cost effectiveness and incremental cost analysis (CE/ICA), as applied to dollar costs & ecosystem restoration benefits; familiarity with the USACE tool IWR-PLAN. Experience in identifying incidental benefits (preferably flood risk management and water supply) is required.</i>
<i>Environmental Resources/NEPA Compliance</i>	<i>A senior biologist, ecologist, or environmental engineer certified to perform ATR, with experience in ecosystem restoration and familiarity with freshwater, coastal and estuarine systems. Must be able to review for NEPA compliance (including cultural resources coordination) and quality and applicability of ecosystem benefits evaluations.</i>
<i>Civil Engineering</i>	<i>A senior civil engineer with specialized experience in civil/site work and construction.</i>
<i>Geotechnical Engineering</i>	<i>A geologist with specialized experience in geotechnical engineering is preferred.</i>

Documentation of ATR. DrChecks will be used to document all ATR comments, responses and resolutions. Comments should be limited to those needed to ensure product adequacy. If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team for resolution using the EC 1165-2-217 issue resolution process. Concerns can be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review (see EC 1165-2-217, Section 9), for the draft and final reports, certifying that

review issues have been resolved or elevated. ATR may be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

c. INDEPENDENT EXTERNAL PEER REVIEW

(i) Type I IEPR.

Decision on Type I IEPR. This Validation Report is so limited in scope that it would not significantly benefit from a Type I IEPR and therefore Type I IEPR exclusion is being requested concurrent with approval of this review plan. This Validation Report is being developed only to verify that construction of the remaining features of the project are still environmentally acceptable, economically justified and feasible from an engineering and design standpoint.

(ii) Type II IEPR.

The second kind of IEPR is Type II IEPR. These Safety Assurance Reviews are managed outside of the USACE and are conducted on design and construction for hurricane, storm and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. A Type II IEPR Panel will be convened to review the design and construction activities before construction begins, and until construction activities are completed, and periodically thereafter on a regular schedule.

Decision on Type II IEPR. *Based on the project as currently envisioned, the District chief of engineering, as the Engineer-In-Responsible-Charge, has concluded that a Type II IEPR Safety Assurance Review of this project is not required for this Validation Report. A risk-informed decision concerning the timing and the appropriate level of reviews for the project implementation phase will be prepared and submitted for approval in an updated Review Plan prior to initiation of the design/implementation phase of this project to reassess the need for a Type II IEPR Safety Assurance Review during the project implementation phase.*

d. MODEL CERTIFICATION OR APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are any models and analytical tools used to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of a planning product. The selection and application of the model and the input and output data is the responsibility of the users and is subject to DQC, ATR, and IEPR. Currently the confirmation report is not contemplated to have any additional plan formulation or alternative analysis conducted.

Table 5: Planning Models. The following models may be used to develop the decision document:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
N/A		

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR. Currently the Validation Report is not contemplated to have any additional plan formulation or alternative analysis conducted. However additional engineering analysis will be conducted during PED to complete the design of the project.

Table 6: Engineering Models. These models may be used to develop the decision document:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
N/A	TBD	

No modeling will be completed during the development of the Validation Report.

e. POLICY AND LEGAL REVIEW

Policy and legal compliance reviews for draft and final planning decision documents are delegated to the MSC (see Director’s Policy Memorandum 2018-05, paragraph 9).

(ii) Policy Review.

The policy review team is identified through the collaboration of the MSC Chief of Planning and Policy and the HQUSACE Chief of the Office of Water Project Review. The team is identified in Attachment 1 of this Review Plan. The makeup of the Policy Review team will be drawn from Headquarters (HQUSACE), the MSC, the Planning Centers of Expertise, and other review resources as needed.

The Policy Review Team will be invited to participate in key meetings during the development of decision documents as well as SMART Planning Milestone meetings. These engagements

may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings plus the milestone events.

The input from the Policy Review team should be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.

In addition, teams may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations should be documented in an MFR.

(iii) Legal Review.

Representatives from the Office of Counsel will be assigned to participate in reviews. Members may participate from the District, MSC and HQUSACE. The MSC Chief of Planning and Policy will coordinate membership and participation with the office chiefs.

- In some cases legal review input may be captured in the MFR for the particular meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.
- Each participating Office of Counsel will determine how to document legal review input.

ATTACHMENT 1: TEAM ROSTERS

RIO GRANDE DE ARECIBO FLOOD CONTROL PROJECT DELIVERY TEAM			
Name	Office	Position	Phone Number
	CESAJ-PM-WN	Project Manager	904.232.1433
	CESAJ-PD-D	Planning, PTL	904.232.1061
	CESAJ-EN-DM	Engineering, ETL	904.232.1050
	CESAJ-EN-TC	Engineering Cost	904.232.2165
	CESAJ-EN-WH	Engineering Hydraulic Design	904.232.2750
	CESAJ-PD-D	Planning, Socioeconomics	904.232.1703
	CESAJ-PD-EC	Planning Environmental	904.232.1897
	CESAJ-PD-ES	Planning Cultural	904.232.1577
	CESAJ-RE-A	Real Estate Acquisition	904.232.1656
	CESAJ-OC	Office of Counsel	904.232.1164

RIO GRANDE DE ARECIBO DISTRICT QUALITY CONTROL TEAM			
Name	Office	Position	Phone Number
	CESAJ-PD	Chief, Planning Division	904.232.1665
	CESAJ-EN	Chief, Engineering Division	904.232.2251
	CESAJ-EN-DL	Chief, Civil Section	904.232.2415
	CESAJ-EN-WH	Engineering Hydraulic Design	904.232.1197
	CESAJ-PD-E	Chief, Environmental	904.232.2336
	CESAJ-PD-D	Chief, Socio-Economics	904.232.1058
	CESAJ-EN-TC	Chief, Cost Engineering	904.232.1043

RIO GRANDE DE ARECIBO POLICY AND LEGAL REVIEW TEAM			
Name	Office	Position	Phone Number
	CESAD-PDH	Review Manager	404.562.5177
	CESAD-EN	Engineering	404 562 5120
	CESAD-OC	Office of Counsel	404 562 5017
	CESAD-RE	Real Estate	404 562 5075
	CESAD-PDP	Environmental	404 562 5225
	CENAD-PD	Socio- Economics	917 359 2819
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