



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

CESAD-DE

31 October 2019

MEMORANDUM FOR Commander, Jacksonville District, (CESAJ-PM/██████████),
701 San Marcos Boulevard, Jacksonville, Florida 32207-8175

Subject: Approval of Revised Review Plan and Type I Independent External Peer Review
Exclusion for the C-43 West Basin Storage Reservoir Validation Study

1. References:

a. Memorandum, CESAJ-PW, 26 Jul 19, subject: Caloosahatchee River (C-43) West Basin Storage Reservoir Validation Report, Approval of Final Review Plan and Type 1 Independent External Peer Review Exclusion.

b. Memorandum, CEMVD-PD (ECO-PCX), 18 Jul 19, subject: Caloosahatchee River (C-43) West Basin Storage Reservoir Validation Study, Review Plan Endorsement.

c. Engineer Circular 1165-2-217, Review Policy for Civil Works, 20 Feb 18.

2. The enclosed Review Plan for the C-43 West Basin Storage Reservoir Validation Study has been prepared consistent with EC 1165-2-217, and the Review Plan and request for IEPR exclusion have been coordinated with the Ecosystem Restoration Planning Center of Expertise (ECO-PCX), which is the lead office to execute this plan (reference 1.b). The Final Review Plan includes minor, non-substantive revisions made after PCX endorsement following initial review in the South Atlantic Division. The Review Plan does not include Type 1 Independent External Peer Review.

3. I hereby approve this Review Plan and the request for exclusion from Type 1 Independent External Peer Review, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution due to significant changes in the study, study scope, or level of review will require new written approval from this office. The District shall post the approved Review Plan and a copy of this approval memorandum to the District public internet website and provide a link to the ECO-PCX for their use. Before posting to the website, the names of Corps employees should be removed.

4. The point of contact for this action is Mike Magley at (404) 562-5206 or ██████████@usace.army.mil.

Encl

████████████████████
████████████████████
Brigadier General, USA
Commanding

REVIEW PLAN

September 2019

Project Name: Caloosahatchee River (C-43) West Basin Storage Reservoir

P2 Number: 114458

Decision Document Type: Validation Report

Project Type: Ecosystem Restoration

District: Jacksonville District

District Contact: Planning Technical Lead, (904) 232-3756

Major Subordinate Command (MSC): South Atlantic Division

MSC Contact: Chief of Planning and Policy, (404) 562-5226

Review Management Organization (RMO): National Ecosystem Planning Center of Expertise

RMO Contact: ECO-PCX Account Mgr. (651) 290-5259; Operating Director (309) 794-5286

Key Review Plan Dates

Date of RMO Endorsement of Review Plan:	July 18, 2019
Date of MSC Approval of Review Plan:	<i>Pending</i>
Date of IEPR Exclusion Approval:	<i>Pending</i>
Has the Review Plan changed since PCX Endorsement:	Yes (Non-Substantive Changes)
Date of Last Review Plan Revision:	None
Date of Review Plan Web Posting:	Pending
Date of Congressional Notifications:	Pending

Milestone Schedule

	Scheduled	Actual	Complete
Alternatives Milestone:	N/A	N/A	N/A
Tentatively Selected Plan:	N/A	N/A	N/A
Release Draft Report to Public:	N/A	N/A	N/A
Agency Decision Milestone:	N/A	N/A	N/A
Final Report Transmittal to SAD:	25 Oct 2019	N/A	No
Senior Leaders Briefing:	N/A	N/A	N/A
SAD Transmit Report to HQ	1 Nov 2019	N/A	No
ASA Submit VR to Congress:	5 March 2020	N/A	No

PROJECT FACT SHEET

Project Name: Caloosahatchee River (C-43) West Basin Storage Reservoir Project

Purpose of Validation Report: The Validation Report documents the project progress, costs expended to date, proposed plan for future construction activities, and presents an updated cost estimate for the project. The latest estimate of project costs exceeds the maximum project cost limit pursuant to Section 902 of the Water Resources Development Act (WRDA) of 1986, as amended.

Location: The project is located in Hendry County, Florida (Figure 1). The area within the Caloosahatchee Estuary system beneficially affected by the project encompasses approximately 71,000 acres in the Caloosahatchee River, San Carlos Bay, and a portion of Pine Island Sound, although in all likelihood the area beneficially affected by project implementation will be much larger, including portions of Pine Island Sound, Estero Bay, and the Gulf of Mexico. The project footprint covers approximately 10,700 acres.

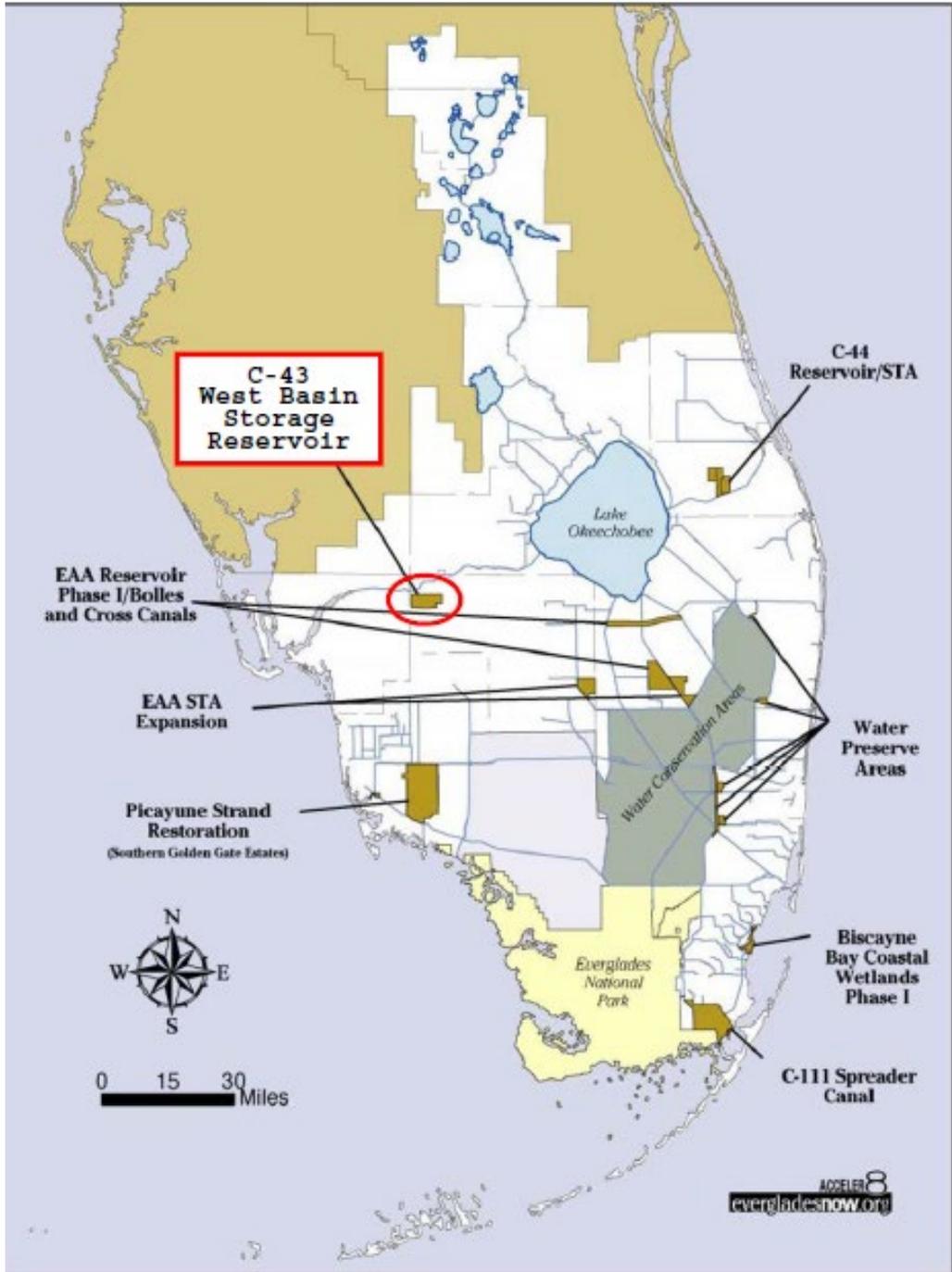


Figure 1. C-43 WBSR Location

Authority: The construction of the Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Caloosahatchee River (C-43) West Basin Storage Reservoir Project at Hendry County, Florida was authorized by Section 7002(5) of the Water Resources Reform and Development Act of 2014, Public Law 113-121.

Sponsor: The South Florida Water Management District (SFWMD) is the non-Federal Sponsor for the implementation of this project as part of the Comprehensive Everglades Restoration Plan (CERP).

Type of Study: Validation Report (Cost Post-Authorization Change Report)

SMART Planning Status: N/A

Project Description: The C-43 WBSR is a component of the Comprehensive Everglades Restoration Plan (CERP) and is designed to capture excess Caloosahatchee River (C-43) Basin runoff and regulatory releases from Lake Okeechobee during the wet season and release water from the reservoir during the dry season. The project includes development of one above-ground reservoir with a total storage capacity of approximately 170,000 acre-feet. The project will reduce the extreme salinity changes in the Caloosahatchee Estuary by providing a more consistent flow of water discharging in to the estuary. The project will also provide water supply benefits and some flood attenuation.

Problem Statement: The total project cost increases are forecasted to exceed 20 percent of the total authorized cost as provided in Section 902 of WRDA 1986. This Validation Report (VR) has been prepared to present an increased cost estimate of the authorized project beyond the Section 902 cost limit and to request the authorization for a project first cost of \$997,757,000 (FY20 price levels). The current authorized project 902 limit is \$851 million (FY20 price levels). The increase in costs are primarily due to the following factors:

- Costs based on the original design were commensurate with the aggressive design schedule, resulting in a project plan and cost estimate that had significant shortcomings. The current design effort resulted in project infrastructure more complex than envisioned in the 2008 original design.
- The original design was developed prior to U.S. Army Corps of Engineers (USACE) modified design philosophy to place more emphasis on robustness, resiliency, and redundancy of designs in order to reduce risk.
- Subsequent to the original design, there were lessons learned from the design and construction of other projects including the Site 1 Impoundment and the Indian River Lagoon South Project (C-44) that were applied to the C-43 WBSR.
- Bridges and access roadway costs were captured minimally in the original design and cost estimate.
- Changes in material costs, escalation based on construction schedule changes, labor rates, equipment costs and differences in percentages of applied markups.

Table 1. Fully-funded costs inflated through construction (FY20 price levels)

Maximum cost limited by Section 902	\$ 850,686,000
Authorized cost inflated through construction	\$ 725,366,000
Total project cost estimate	\$1,038,853,000

Federal Interest: The C-43 WBSR project was authorized in WRDA 2014 by Congress.

Risk Identification: There is a risk that the project, as currently designed, could not be completed at a cost less than the existing Section 902 limit and benefits as described in the PIR/EIS would not be achieved. If the project were rescoped to be completed at a cost of equal or less than the Section 902 limit, redesign would be necessary and there would be a significant loss in sunk costs. It is likely that the redesign would result in a significantly smaller project, leading to reduced reservoir storage and therefore a reduced ability to reduce the extreme salinity changes in the Caloosahatchee Estuary by providing a more consistent flow of water released into the estuary.

FACTORS AFFECTING THE LEVELS OF REVIEW

Scope of Review. Because there is no reformulation, the highest level of technical review required will be Agency Technical Review (ATR). Project construction is pending (all contracts have been awarded and notice to proceed has been issued) and this report provides an updated cost estimate for the project. The level of review required was discussed with South Atlantic Division (SAD) and the Ecosystem Restoration Planning Center of Expertise (ECO-PCX). The original PIR/EIS has undergone DQC and ATR reviews. A Type 2 IEPR was performed in 2016. The Cost Center of Expertise (CX) has certified the updated costs that will be presented in the Validation Report.

- Will the study likely be challenging?
No. The purpose of the Validation Report is to present a revised cost estimate and updated analysis of the authorized project. It evaluates the authorized project and the cost increase of the refined detailed design developed during preconstruction, engineering and design (PED) phase and re-affirms that benefits will still be achieved and that the plan is still cost-effective.
- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.

Project Benefit Risks and Uncertainty

At the time of the review plan, there is risk/uncertainty regarding C-43 WBSR benefits as described in the PIR/EIS. The project team acknowledges that there have been changes within the C-43 watershed and throughout the overall C&SF system since the original benefit analysis in the PIR/EIS. However, the analysis of project benefits in the Validation Report assumes benefits are unchanged from the PIR/EIS analysis and uses operational assumptions from the draft Project Operating Manual (POM) from the PIR/EIS.

Prior to project completion, project operations will be re-evaluated and optimized to maximize project benefits. A future POM update will consider project-specific changes once the project operating manual is revised.

There are also changes to the overall C&SF system and CERP implementation, in comparison to what was assumed or in place at the time of the Final PIR. The PIR was formulated based upon the Water Supply/Environmental Lake Okeechobee regulation schedule. That schedule has since been superseded by the Lake Okeechobee Regulation Schedule and will ultimately be replaced by LOSOM which is currently in development. These regulation schedules will alter the amount of water released into the Caloosahatchee River at the S-77 structure in the wet and dry seasons, potentially changing the overall benefits of the project. Also, the individual project components of CERP planned for implementation and the rest of the C&SF system have changed

significantly since the PIR/EIS. The PIR/EIS also made many assumptions about land use development and water supply which could impact rainfall-runoff and water supply needs within the basin.

Risk to Project Implementation

There is a risk that the project, as currently designed, could not be completed at a cost less than the existing Section 902 limit and benefits as described in the PIR/EIS would not be achieved. If the project were rescoped to be completed at a cost of equal or less than the Section 902 limit, redesign would be necessary and there would be a significant loss in sunk costs. It is likely that the redesign would result in a significantly smaller project, leading to reduced reservoir storage and therefore a reduced ability to reduce the extreme salinity changes in the Caloosahatchee Estuary by providing a more consistent flow of water released into the estuary.

It should be noted that there is also a risk of the non-Federal sponsor, SFWMD, not receiving work-in-kind credit for costs above the current Section 902 limit since they are continuing to move forward with design and construction efforts. This risk has been documented through formal correspondence from the SFWMD. However, there is no guarantee that the SFWMD will not stop construction until the authorized cost is increased to preserve the 50/50 cost share. Therefore, this option would potentially lead to a delay in project benefits. In addition, if work proceeds by SFWMD above the current Section 902 limits, there is a risk of lack of monitoring and involvement by USACE field and engineering staff. Construction and Engineering Supervision and Administrative support will not be funded for the entirety of this project, likely at critical project times such as during end of construction and first filling plan.

- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues?
No. This project is justified by ecosystem restoration benefits. The authorized project does include a reservoir that is classified as a high hazard dam. Life safety was evaluated under the PIR and in the Type II IEPR completed in 2016.
- Has the Governor of an affected state requested a peer review by independent experts?
No.
- Will it likely involve significant public dispute as to the project's size, nature, or effects?
No. The 2007 PIR/EIS did not indicate significant public dispute. The non-Federal sponsor has not indicated that any significant public disputes have arisen since the PIR/EIS.
- Is the project/study likely to involve significant public dispute as to the economic or environmental cost or benefit of the project?
Significant public dispute to the economic or environmental costs or benefits is not 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 and project designs will not be 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? As a large reservoir construction project with life safety risk implications, the C-43 project has incorporated the concepts of redundancy, resiliency, and robustness into the project design where these concepts were appropriate. The project does not include unique construction sequencing or a reduced or overlapping design/construction schedule.

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

Yes, the project first cost of \$997,757,000 (FY20 price levels).

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

An Environmental Impact Statement was completed in 2007 for this project. As there are no changes to the scope, it is not anticipated that another Environmental Impact Statement would be required for the Validation Report.

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

The USACE previously determined that the project would not affect historic properties listed or eligible for listing in the National Register of Historic Places, as outlined in the 2010 Chief of Engineer's Report. The Florida State Historic Preservation Officer (SHPO) concurred with the USACE's determination of no effect by letter dated 11 June 2007. The USACE maintains the previous determination of no effect following the completion of this validation study as the area of potential effects and project impacts remain unchanged. The project has been coordinated by the SHPO and complies with the requirements of Section 106 of the National Historic Preservation Act.

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

There have been no major changes to the authorized project footprint, environmental circumstances or considerations, or mitigation requirements since the 2010 Chief of

Engineer's Report. All impacts were discussed in detail in the Final EIS and, as necessary, they are being avoided or minimized to the maximum extent possible as described in the Final EIS.

- 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?

The project's impacts have not significantly changed since the project was congressionally approved and the current study will not include any reformulation, so it is not expected to result in a different impact than the currently authorized project. During the implementation of the 2007 PIR/EIS, the USACE and USFWS completed formal consultation under Section 7 of the Endangered Species Act (ESA) to identify and evaluate possible adverse impacts to the Florida panther, eastern indigo snake, and Audubon's crested caracara as a result of the Caloosahatchee River (C-43) West Basin Storage Reservoir. The PIR/EIS indicated that potential adverse impacts to the Florida panther would include the loss of 10,335 acres of panther habitat which would be compensated for through the protection and restoration of 102,129 acres off-site. Potential adverse impacts to the eastern indigo snake would include the direct loss of 10,264 acres of eastern indigo snake habitat resulting in the incidental take of up to 54 snakes during initial construction and operations. In addition to standard protection measures, initial and subsequent rehydrations of the reservoir will be monitored and reviewed to determine if snakes are re-populating the reservoir during drydown events. Potential adverse impacts to Audubon's crested caracara includes the incidental take of up to two adult pairs of caracara in the form of harassment, as well as up to two caracara nest sites for up to five consecutive breeding seasons. Monitoring and surveys of the birds will be conducted to minimize future impacts. The USACE completed ESA reinitiation of consultation and the U. S. Fish and Wildlife Service provided an amended Biological Opinion in March 2019 to update incidental take for caracara, and modify the terms and conditions for monitoring done by the South Florida Water Management District pursuant to their USACE RD permit as the non-federal partner for reservoir construction. The amended Biological Opinion addressed situational site changes that did not affect the project's impacts or construction schedule. The USACE has also completed informal consultation with the USFWS for the West Indian manatee. A manatee barrier will be placed at the confluence of the Townsend Canal and Caloosahatchee River to minimize potential impacts to the West Indian manatee.

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.) will undergo DQC. This internal review process covers basic science and engineering work products. It will fulfil the project quality requirements of the Project Management Plan.

Agency Technical Review. ATR will be performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. The team will be comprised of certified USACE personnel. The ATR team lead will be from outside the home 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. The decision documents will 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. The Validation report will undergo a cost engineering review.

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.

No models will be run for the C-43 West Basin Storage Reservoir Validation Report.

Policy and Legal Review. The decision document will be reviewed for compliance with applicable laws and policies. 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
Draft Validation Report	DQC	6/25/2019	9/30/2019	\$15,000	No
Draft Validation Report	ATR	10/8/2019	10/25/2019	\$25,000	No
Draft Validation Report Review	Policy and Legal	10/28/2019	11/21/2019	N/A	No
Final Validation Report	Policy and Legal	10/26/2019	11/26/2019	N/A	No

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
DQC Lead	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).
Planning	A senior water resources planner with experience in large scale, component-based ecosystem restoration.
Economics	A senior economist with demonstrated experience evaluating ecosystem restoration 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.
Environmental Resources/NEPA Compliance	A senior biologist/ecologist/environmental engineer, with experience in ecosystem restoration 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.

DQC Team Disciplines	Expertise Required
Climate Preparedness and Resilience	The team member of the should be certified by the Climate Preparedness and Resilience CoP in the Corps of Engineers Review Certification and Access Program (CERCAP) and have knowledge of the use of the Nonstationarity Detection Tool and the Vulnerability Assessment Tool, referenced in ECB 2018-14.
Civil Engineering	The team member should be a registered professional engineer with experience in civil/site work.
Cost Engineering	The team member should be a registered professional with experience in cost engineering.

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, on page 19 (see 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 Agency Technical Review will assess whether the cost analyses are technically correct and comply with guidance, and that documents explain the cost analyses and results in a clear manner. The review is conducted by a Cost Engineer who is 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 discipline and required expertise for this ATR Team.

Table 3: Required ATR Team Expertise

ATR Team Disciplines	Expertise Required
Cost Engineering	An engineer with a minimum 5 years’ experience in performing cost engineering/construction management for all project phases including safety assurance. The team member should be familiar with the construction industry and practices in Florida and/or the southeastern U.S. EC 1165-2-217, page 42 states, “Each PCX must coordinate with the Cost Engineering MCX at the Walla Walla District. In cases where the Cost Engineering MCX identifies the need for Type I IEPR, it will inform the assigned PCX and will assist with establishing the Charge.”
Climate Preparedness and Resilience	At least one member of the Agency Technical Review Team must be certified by the Climate Preparedness and Resilience CoP in the Corps of Engineers Review Certification and Access Program (CERCAP)
Economics	A senior economist certified to conduct ATR with a minimum of 10 years of experience evaluating ecosystem restoration project benefits and costs. Experience 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 is required. Experience in identifying incidental benefits (preferably flood risk management and water supply) is required.

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. In accordance with EC 1165-2-217, Type I IEPR is conducted on project studies. As this validation report is limited to providing a cost update to a congressionally authorized plan, the requirements to conduct a Type I IEPR do not apply. The scope of the validation report does not include reformulating alternatives or changing the previously authorized project purpose.

- Consequences of non-performance on project economics, the environmental and social well-being (public safety and social justice):
There is a risk that the project, as currently designed, could not be completed at a cost less than the existing Section 902 limit and benefits as described in the PIR/EIS would not be achieved. If the project were rescoped to be completed at a cost of equal or less than the Section 902 limit, redesign would be necessary and there would be a significant loss in sunk costs. It is likely that the redesign would result in a significantly smaller project, leading to reduced reservoir storage and therefore a reduced ability to reduce the extreme salinity changes in the Caloosahatchee Estuary by providing a more consistent flow of water released into the estuary. If the Validation Report is not endorsed, the project will reach the section 902 cost limit in FY23.
- Does the product contain influential scientific information or highly influential scientific assessment?
The project will not contain influential scientific information or highly influential scientific assessment.
- Does the decision document meet any of the possible exclusions described in EC 1165-2-217?
As this effort is limited to a reaffirmation of a previously congressionally authorized project, the Type 1 IEPR exclusion guidance does not apply. Additionally, although there are potential life safety risks that could be associated with the project, a Type II IEPR was completed in 2016.

For the reasons stated above, Type I IEPR is not applicable to this study.

(i) Type II IEPR.

Decision on Type II IEPR.

As this validation report is providing a cost update to a congressionally authorized plan, the requirements to conduct an IEPR do not apply. It is important to note that a Type II IEPR (also known as Safety Assurance Review (SAR)) has previously been completed by Gannett Fleming that was awarded and paid for by the non-Federal sponsor, South Florida Water Management District (SFWMD). The review took place on 22 August 2016 and adequately demonstrates and covers the requirements of a Type II IEPR.

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.

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.

The C-43 Validation Report will focus on changes in project design that have contributed to cost increases. This effort will utilize hydrologic modeling previously presented in the 2007 C-43 PIE/EIS. All models used for the 2007 C-43 PIE/EIS were certified or approved at that time, if appropriate, in accordance with appropriate regulations such as EC 1105-2-412. Based on the above information, no additional model certifications or approvals are needed for this validation study.

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).

(i) Policy Review.

The policy review team will be 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. These engagements may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings.

- The input from the Policy Review team will be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR will be distributed to all meeting participants.
- In addition, the team 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 will be documented in an MFR.

(ii) 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

PROJECT DELIVERY TEAM			
Name	Office	Position	Phone Number
	USACE	SAJ-PD Peer Review Manager	(904) 232-1818
	USACE	Planning Technical Lead	(904) 232-3756
	USACE	Project Manager	(904) 232-2805
	USACE	Engineering Technical Lead	(904) 232-1672
	USACE	Hydraulic Engineer	(904) 232-2915
	USACE	Cost Engineer	(904) 232-2207
	USACE	Environmental	(904) 232-3691
	USACE	Economics	(904) 232-3530
	USACE	Cultural Resources	(904) 232-3634

DISTRICT QUALITY CONTROL TEAM			
Name	Office	Position	Phone Number
	CESAJ-PD-ES	Section Chief	(904) 232-2077
	CESAJ-PD-D	Branch Chief	(904) 232-1058
	CESAJ-PD-P	Branch Chief	
	CESAJ-PD-PW	Section Chief	(904) 232-3974
	CESAJ-EN-TC	Section Chief	(904) 232-1043
	CESAJ-OC	Supervisory CW Attorney	(904) 232-1164
	CESAJ-EN-W	Branch Chief	(904) 232-2230
	CESAJ-EN-WM	Section Chief	(904) 232-1159
	CESAJ-EN-WM	Hydraulic Engineer	(904) 232-1975

COST REVIEW AND AGENCY TECHNICAL REVIEW			
Name	Office	Position	Phone Number
	Walla Walla (Cost CX)	Cost Engineer	(509) 527-7585
TBD	TBD	Economist	TBD

VERTICAL TEAM			
Name	Office	Position	Phone Number
	MVP	Eco-PCX Contact	(651) 290-5259
	HQ	Climate Preparedness & Resilience CoP	(202) 761-4163
	SAD	SFER Program Manager	(404) 562-5206
	HQ	RIT	(202)761-4241

POLICY REVIEW TEAM			
Name	Office	Position	Phone Number
	CESAD-PDP	Plan Formulation	(404) 562-5206
	CESAD-PDP	Environmental	(404) 562-5227
	CESAD-RBT	Engineering	(404) 562-5120
	CESAD-RBT	Cost Engineering	(404) 562-5109
	CESAD-CC	Counsel	(404) 562-5017
HQ Policy Reviewer	CECW-OWPR	TBD	TBD