



REPLY TO
ATTENTION OF

PD-FP
DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

05 JUN 2014

CESAD-RBT

MEMORANDUM FOR COMMANDER MOBILE DISTRICT (CESAM-PD-FP/
CURTIS M. FLAKES/BEVERLEY HAYES)

SUBJECT: Approval of the Review Plan for the update of the Apalachicola-Chattahoochee-Flint River Basin Master Water Control Manual, the Project Water Control Manuals and Water Control Plans, the updated Critical Yield Analyses Report, the Water Supply Storage Assessment and the Environmental Impact Statement

1. References:

a. Memorandum, CESAM-PD-FP, 25 February 2014, subject: Review Plan (RP) - Master Water Control Update (WCM), Water Supply Storage Agreement (WSSA), and Environmental Impact Statement (EIS), Apalachicola-Chattahoochee-Flint (ACF) River Basin (Enclosure).

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

2. The Review Plan for the Apalachicola-Chattahoochee-Flint (ACF) River Basin Master Water Control Manual (Master Manual) and its supporting individual project WCMs and Water Control Plans (WCPs), the updated Critical Yield Analyses Report, the WSSA and the EIS submitted by reference 1.a has been reviewed by this office. Some minor edits to the Review Plan were coordinated with Ms. Beverley Hayes of your organization. The enclosed Review Plan, with the coordinated edits incorporated, is approved in accordance with reference 1.b above.

3. We concur with the District's conclusion that a Type I Independent External Peer Review is appropriate for this product development effort. The primary basis for this concurrence is that the proposed update of ACF Master Manual, WCMs, WCPs, Critical Yield Analyses Report, WSSA and EIS is highly controversial, very complex and has a history of public dispute.

4. The District should take steps to post the approved Review Plan to its web site and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed. Subsequent significant changes to this Review Plan, should they become necessary, will require new written approval from this office.

5. The SAD point of contact is Mr. James Truelove, CESAD-RBT, 404-562-5121.

Encl


DONALD L. WALKER
COL, EN
Commanding

REVIEW PLAN

**Master Water Control Manual, Project Water Control Manuals and
Water Control Plans, Updated Critical Yield Analyses Report,
Water Supply Storage Assessment Report
and
Environmental Impact Statement**

Mobile District

**South Atlantic Division Approval Date: 5 June 2014
Last Revision Date: None**



**US Army Corps
of Engineers®**

REVIEW PLAN

Apalachicola-Chattahoochee-Flint River Basin Master Water Control Manual, Project Water Control Manuals and Water Control Plans, Updated Critical Yield Analyses Report, Water Supply Storage Assessment Report and Environmental Impact Statement

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan (RP) describes the scope and level of review for the update of the Apalachicola-Chattahoochee-Flint (ACF) River Basin Master Water Control Manual (Master Manual), and its supporting individual project Water Control Manuals (WCMs) and Water Control Plans (WCPs) and appendices, the updated Critical Yield Analyses Report, the Water Supply Storage Assessment (WSSA) and the draft Environmental Impact Statement (EIS). Accompanying the draft EIS for review will be the draft Fish and Wildlife Coordination Act Report and Biological Opinion. The factors affecting the scope and levels of review are discussed in Paragraph 3.c. The applicability of the levels of review is discussed in Paragraph 4 through 7. This RP is a component of the Apalachicola-Chattahoochee-Flint River Basin Master Water Control Manual Update, Water Supply Storage Assessment Report and Environmental Impact Statement Project Management Plan (PMP).

b. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-214, 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 identifies three types of documents; Decision Document, Implementation Documents, and Other Work Products. Under EC 1165-2-214, the update of the ACF Master Manual, WCMs, WCPs, the updated Critical Yield Analyses Report, WSSA and draft EIS are Other Work Products. The EC outlines four applicable general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents and some Other Work Products may be subject to cost engineering review and certification (per EC 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. For the Other Work Products address in this Review Plan the RMO for the peer review effort described in this Review Plan is the Planning Center of Expertise for Water Management and Reallocation Studies (WMRS-PCX).

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates and contingencies.

The following paragraphs generally discuss the DQC, ATR, IEPRs and Policy and Legal Compliance Reviews. Additional information concerning these reviews is available in EC 1165-2-214.:

a. District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It will be managed by the U.S. Army Corps of Engineers (Corps), Mobile District and will try to utilize in-house staff with the expertise to review the proposed work and who have not previously been involved with the study on any level. DQC may require staffing from Corps entities other than SAM because of the specialized expertise required and most of the SAM staff with expertise have, at some time, been involved with the ACF WCM update. The Project Delivery Team (PDT) is responsible for the integrity of the report(s), technical appendices and the recommendations.

DQC will include all project products, including the National Environmental Policy Act documentation. The first line of quality assurance is the PDT's regular quality checks and reviews that will occur throughout the developmental process. Quality assessment will also occur as a routine management practice by a DQC team that is uninvolved with production of the project outputs. Every effort will be made to ensure DQC team consistency, and by extension consistency of the reviews and caliber of the products. Quality assurance will also include documentation of the periodic reviews.

b. Agency Technical Review (ATR). ATR is an in-depth review that will be managed by the RMO. The RMO will assemble a qualified independent team from outside the Mobile District who have not have been involved with the document production process. The ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; 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 Leader will be from outside SAD. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR Team reviews the various work products and assures that all the parts fit together in a coherent whole.

c. Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied in cases where the risk and magnitude of the proposed project warrant examination by a qualified team outside of the Corps. Type I IEPR is managed by an outside eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying applicable planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

d. Safety Assurance Review (SAR). SARs are sometimes called Type II IEPRs. All projects addressing flooding or storm damage reduction that present a significant threat to human life shall undergo a safety assurance review of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare.

e. Policy and Legal Compliance Review. Documents will be reviewed throughout the development process for their compliance with law and policy. If policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, Mobile District will seek issue resolution support from the MSC and HQUSACE. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The Mobile District Office of Counsel is responsible for the legal review of each document and when appropriate signing a certification of legal sufficiency.

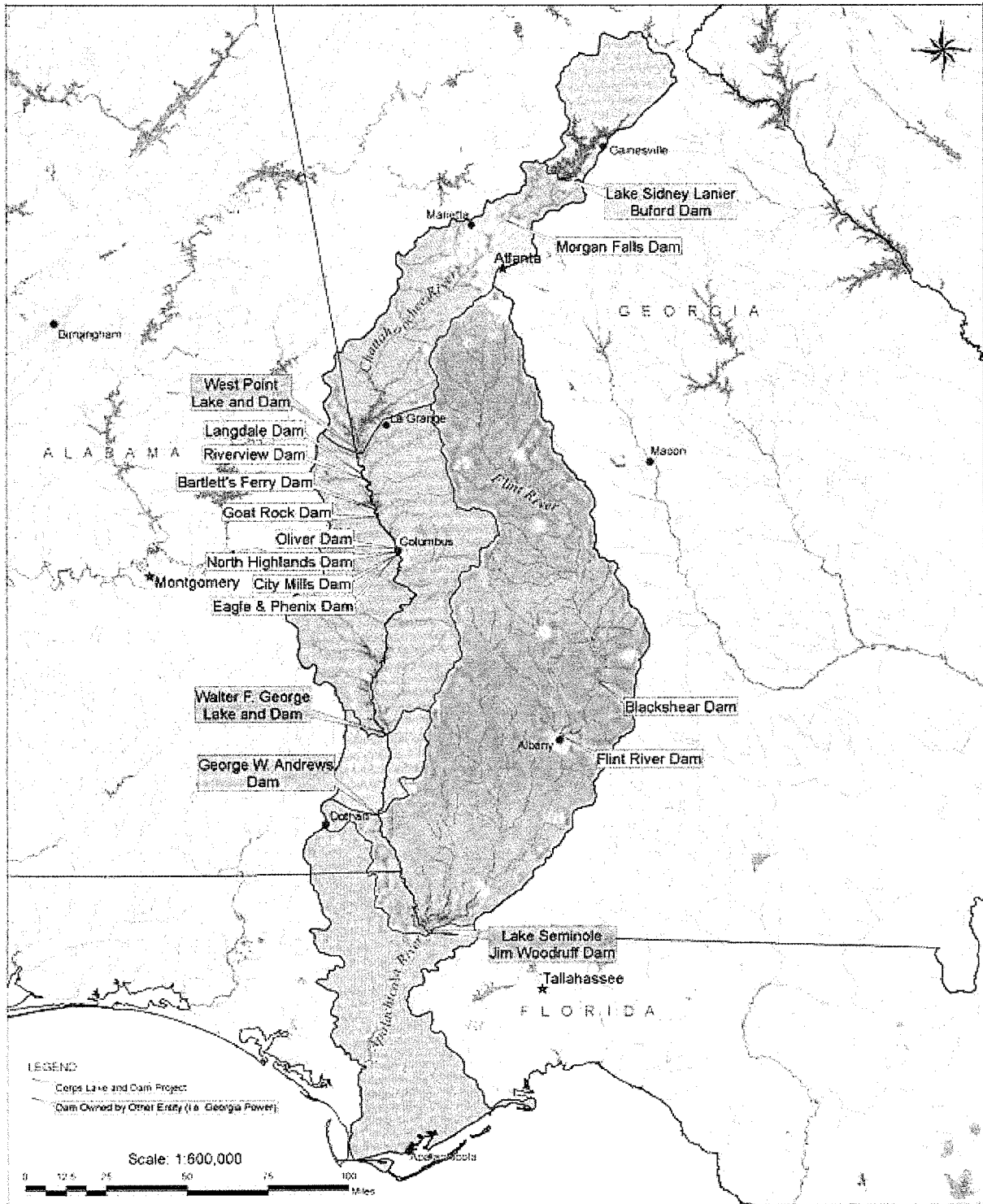
3. STUDY/PROJECT INFORMATION

a. Documents. This document production process will result in an updated Critical Yield Analyses Report, an ACF Master Water Control Manual and individual project WCMs and WCPs that will provide operational guidelines to determine daily operations throughout the ACF System. These documents will be addressed in National Environmental Policy Act (NEPA) documentation, which will include a WSSA as an appendix. It has been determined that an EIS is the appropriate level of NEPA documentation.

Because the WSSA Report is not a reallocation per se, it is inappropriate to make a decision regarding whether a reallocation will take place until the public has had the opportunity to review and comment on the analysis and a tentatively selected plan.

b. Study/Project Description. The Corps has authority to operate five Federal projects within the ACF River System: Buford Dam (Lake Sidney Lanier), West Point Dam, Walter F. George Lock and Dam, George W. Andrews Lock and Dam, and Jim Woodruff Lock and Dam (Lake Seminole). All are reservoir projects with the exception of George W. Andrews Lock and Dam. The development of the ACF River System was authorized in Section 2 of the Rivers and Harbors Act of 1945 and as amended by the Rivers and Harbors Act of 1946. These Acts authorized the Federal projects within the system with the exception of West Point Dam, which was authorized by the Flood Control Act of 1962. The ACF River Basin drains areas of northern, western and middle Georgia, southeastern Alabama and northwest Florida. The basin encompasses about 19,800 square miles. Approximately 14,500 square miles of the basin are in Georgia, 2,800 square miles are in Alabama, and 2,500 square miles are in Florida. The main tributaries of the basin are the Chattahoochee River, which drains about 8,800 square miles and the Flint River, which drains 8,500 square miles. About 2,500 square miles are tributary directly to the Apalachicola River.

Apalachicola Bay is located at the southern terminus of the river basin on the Gulf of Mexico. The ACF River Basin is located in 10 counties in Alabama, eight counties in Florida and 59 counties in Georgia. Principal cities in the basin are Atlanta, Columbus and Albany, Georgia; Phenix City, Eufaula and Dothan, Alabama; and Blountstown, Wewahitchka and Apalachicola, Florida. In addition to the Federal projects



Apalachicola-Chattahoochee-Flint River Basin

in the basin, there are eight privately-owned dams on the Chattahoochee River located between West Point Dam and Columbus, Georgia, and two locally-owned dams on the Flint River.

The current ACF Basin Master WCM that was completed in February 1958 has individual project Water Control Manuals that contain WCPs for the Jim Woodruff Lock and Dam (Appendix A) and Buford Dam (Appendix B). These two projects were operational at that time. The WCM WCPs for the remaining Federal projects in the basin were developed as the projects became operational or as water control operations were modified to accommodate changing conditions within the system: Walter F. George Lock and Dam (Appendix C, April 1965, Rev. February 1993), George W. Andrews Lock and Dam (Appendix D, April 1965, Rev. February 1978, Rev. November 1996), and West Point Dam (Appendix E, June 1975, Rev. June 1984, Rev. August 1984). Environmental Impact Statements for each of the individual reservoir projects in the basin were prepared in the 1970s: Buford Dam December 1974, Jim Woodruff Lock and Dam April 1976, West Point Dam May 1977, and Walter F. George Lock and Dam January 1980. An EIS for continued operation and maintenance of the navigation channel was completed in April 1976.

In March 1989, the Mobile District began preparation of a Post Authorization Change Notification Report – known as the PAC Report – and Environmental Assessment (EA) to address reservoir storage space reallocation from hydropower to municipal and industrial water supply within Lake Sidney Lanier. A draft ACF Basin Master Manual was included as an appendix in the draft PAC Report, which was completed and distributed for public review in October 1989. This draft Master Manual, which described then existing system operations, was never finalized due to litigation filed by the State of Alabama on June 28, 1990, objecting to the proposed water supply reallocations and to recommended changes to water control operations in the basin. The lawsuit was also directed toward similar proposals in the ACT River Basin.

To address the water resources issues, the Governors of Alabama, Florida and Georgia and the Assistant Secretary of the Army, Civil Works (ASA (CW)) signed a Memorandum of Agreement (MOA) on 3 January 1992, which temporarily set aside the litigation while water negotiations continued among the states and a comprehensive study of the water resources of the ACF and ACT Basins was conducted. The MOA also contained a “live and let live” provision for accommodating increased water needs in the basins while the ACT/ACF Comprehensive Study and water negotiations were underway. Consequently, the Corps has operated the ACF Basin projects in accordance with the draft 1989 Master Manual on an interim basis pending the currently proposed update of the Master Manual and individual projects WCM.

c. Factors Affecting the Scope and Level of Review. The proposed update of ACF Master Water Control Manual and individual project WCMs and WCPs requires an EIS, is highly controversial, very complex, and has a history of public dispute.

The supporting analysis is extremely technically demanding and is expected to undergo intense scrutiny by subject matter experts. The ResSim 3.2 model represents an entire river basin, including 5 individual reservoir projects with multiple water management scenarios and multiple water supply storage options. The project has a +20 year history of litigation, and it is not unreasonable to assume that litigation will be reinitiated in response to a federal final action. There is diversity of interests among stakeholders throughout the basin; it is unlikely that any single water management plan or water storage scenario will be acceptable to all stakeholders. It is important that all project products be

technically sound; the results must be reproducible; and the documentation must be legally sufficient because it is expected that methodologies and results will be challenged. These factors are very likely to pose a risk to this update effort and are relevant to determining the appropriate levels of review.

The total project funding authorization to date is approximately \$8,800,000. It is anticipated that the total project cost will be \$11,000,000. These figures represent project costs beginning in Calendar Year 2008 when ASA(CW) Geren directed that the water control manuals be completed. It includes all analysis and production since that time as well as estimates of what will be required to complete the manuals and WSSA in 2016, assuming that the process continues on its current track and no new requirements are identified.

Reallocation of storage in Lake Lanier may occur if analysis indicates it is appropriate. The WSSA is being conducted to determine how much, if any, of the Lake Lanier conservation pool can be reallocated to storage. However, the State of Georgia has requested that the storage equivalent to 297 millions of gallons per day (mgd) of firm yield be reallocated from Lake Lanier's conservation storage to the state's use. It is unlikely that a reallocation, if granted, will exceed this amount.

Lake Lanier's current Dam Safety Action Classification (DSAC) rating is IV. This is due to leakage in the saddle dike adjacent to Buford Dam. The leak is attributable to the saddle dike soils. The leakage is persistent but increases as the Lake Lanier pool is raised (typically due to flood storage) and as water elevation is maintained at higher levels.

One planning criteria of the project is that levels of flood risk management currently represented by the project will not be affected. This is because the PDT, including representatives of Office of Counsel think that current levels of flood risk management represent Congressional intent. Development in the Atlanta region downstream of Buford Dam has encroached into the Chattahoochee River floodplain and the channel capacity downstream of Buford Dam is limited to 10,000 cubic feet per second. These conditions raise questions regarding a possible shift of the stage damage curve and at what flood elevation damages begin to occur, and the ability to evacuate flood waters. Analysis of the nature and scale necessary to identify the implications of reducing flood storage at Lake Lanier and permanently raising the top of conservation pool guide curve (which would also require in-depth assessment of saddle dike leakage) is outside the scope of this study. The potential threats of reducing flood risk management and impacts to dam safety are of too great consequence to be addressed without detailed study.

The work product methodology, while neither novel nor precedent setting, is very complex. Different stakeholders are proponents of various ways and mechanisms to accomplish the project objective, and can be expected to argue the advantage of their methods. It was Corps decision that an Independent External Peer Review (IEPR) should be conducted on the project due to the history of litigation and level of project controversy.

Based on the factors above and the discussion of DQC, ATR and IEPR, the following table presents a summary of the products addressed by this Review Plan and the product and phase of the product production at which the reviews will be accomplished.

DQC/ATR/IEPR Table:

Product/Document	Product Phase	DQC	ATR	Type I IEPR
ACF Basin Master Manual	Preliminary Draft ACF Master Manual	✓	✓	✓
Individual Project Water Control Manuals (WCMs)	Preliminary Draft WCMs	✓	✓	✓
Water Control Plans (WCPs)	Preliminary Draft WCPs	✓	✓	
Updated Critical Yield Analyses Report	Draft Updated Reservoir Critical Yield Analyses Report	✓	✓	
	Preliminary Draft Updated Reservoir Critical Yield Analyses Report			✓
Water Supply Storage Assessment	Preliminary Draft Water Supply Storage Assessment	✓	✓	✓
Draft Environmental Impact Statement (EIS)	Preliminary Draft Environmental Impact Statement	✓	✓	✓

d. In-Kind Contributions. In-kind contributions are not applicable to this project.

4. DISTRICT QUALITY CONTROL (DQC)

a. Documentation of DQC. DQC will utilize DrChecks as the forum to record and address all DQC comments. All comments and comment responses will be made available to the Agency Technical Review team.

b. Products to Undergo DQC. As identified in the DQC/ATR/IEPR Table above, all documents will undergo DQC.

c. Required DQC Expertise. The DQC technical review team will be comprised of Mobile District staff members who, to the fullest extent practicable, will not have been associated with producing the documents to be reviewed. It may be necessary to seek DQC team members external to Mobile District because of the specialized expertise needed to review the documents and most staff members qualified to conduct DQC have been associated with the project at some time. The DQC review team will be responsible for performing a technical review of all documents. The DQC review will be completed prior to submitting documents to the WMRS-PCX for ATR and IEPR. Duties of the team include the following:

- 1) Reviewing report contents for compliance with established principles and procedures, using clearly justified and valid assumptions;
- 2) Reviewing methods and procedures used to determine appropriateness, correctness and reasonableness of results;
- 3) Providing ATR review team leader with documentation of comments, issues, and decisions arising out of the DQC review.

5. AGENCY TECHNICAL REVIEW (ATR)

Documents produced as part of this effort will undergo ATR to ensure "...the quality and credibility of the Corps decision documents through an independent review process." The ATR will assess whether the analyses presented are technically correct and comply with published Corps guidance, and that the document explains the analyses and the results in a reasonably clear manner for the public and decision makers. In accordance with policy, the Corps will manage the ATR internally and it will be conducted by individuals and organizations within the Corps that are separate and independent from those in Mobile District that accomplished the work. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. The ATR will be managed by the WMRS-PCX.

a. Products to Undergo ATR. As identified in the DQC/ATR/IEPR Table above, all documents will undergo ATR...

It should be noted that all products may not undergo ATR sequentially or that components of a product may be reviewed before the entire product is complete. It may be necessary to conduct concurrent reviews (for example, MSC review and ATR simultaneously) in order to maintain the production schedule. However, these simultaneous reviews will be minimized to the extent practicable. Components of a product may be reviewed prior to completion of the entire product when the correctness of the element is vital to future work. For example, the ACF Critical Yield Analyses Report update may undergo early ATR because it underpins WSSA calculations and accuracy of the Critical Yield Analyses is necessary to ensure the WSSA is technically sound.

b. Required Team Expertise. Five to ten reviewers are anticipated for ATR because the complexity of analysis and timeliness of review will require more than one subject matter expert in each discipline. The ATR team required a broad level of expertise that spans engineering, planning, economics, water management and biological sciences. At minimum the following disciplines should be represented on the ATR team:

Discipline	Required Expertise
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works documents. The lead should have the necessary skills and experience to lead a virtual team through the ATR process. ATR Team Leader may be a co-duty to one of the review disciplines.
Hydrology & Hydraulics	Team member(s) should have extensive knowledge in the fields of computational modeling of hydrology, hydraulics and water quality in large-river basins. The team member should have an understanding of computer modeling techniques that will be used for this project (HEC-ResSim, and HEC-5Q).
Environmental	Team member(s) should have extensive knowledge of the integration of environmental evaluation and compliance requirements, pursuant to national environmental statutes (NEPA), applicable executive orders, laws and regulations, and other Federal planning requirements, into the planning of Civil Works comprehensive plans and implementation

	projects. A team member should also have the ability to assess statistical methodologies, including correlations, used to measure environmental metrics.
Socioeconomics	The team member(s) should have an understanding of the processes data, methods and assumptions involved in a reallocation study, and of hydrologic data to recognize sufficiency and appropriate utilization in alternative evaluation, including risk assessment. The team member should have an understanding of economic related requirements as depicted in The Water Supply Handbook (Revised IWR Report 96-PS-4, December 1998), EM 1110-2-1619 and ER1105-2-101. The team member should also have a knowledge of Corps accepted benefits and costs utilized in flood risk management analysis, water supply, hydropower and recreation analysis.
Water Management	A senior professional water manager experienced in managing large, complex, multi-purpose reservoir systems with multiple, competing needs including endangered species, cultural resources, water supply, navigation, flood control and recreation.
Plan Formulation	Team member(s) should be familiar with water management and reallocation projects and be experienced in general planning policy and guidance.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and resolutions accomplished throughout the ATR process. Comments should be limited to those required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern including the information deficiency or incorrect application of policy, guidance or procedures;

(2) The basis of concern will be referenced by citation of the appropriate law, policy, guidance, or procedure that has not been properly followed.

(3) The significance of the concerns, including the importance of the concern with regard to its potential impact on plan selection, recommended plan components, efficiency, effectiveness, implementation responsibilities, safety, Federal interest or public acceptability; and

(4) Action(s) needed to resolve the concern(s).

Clarification may be sought when addressing incomplete or unclear information to further assess whether specific concerns may exist.

DrChecks ATR documentation will include the text of each ATR comment and the PDT response. Where pertinent, a summary of pertinent discussion points, including vertical team coordination (District, RMO,

MSC and HQUSACE) and the resolution will be included. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution per policy issue resolution process described in ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on the credentials and relevant experience of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of the review and reviewers' findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include verbatim copies of each reviewer's comments or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date. The Statement of Technical Review is attached (reference Attachment 2) as an example.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of the USACE is warranted. A risk-informed decision, as described in EC 1165-2-214, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted.

a. **Decision on IEPR.** As identified in the DQC/ATR/IEPR Table and discussed above, a Type I IEPR will be conducted on the Preliminary Draft Master Water Control Manual, Preliminary Draft individual project Water Control Manuals, Preliminary Draft Water Supply Storage Assessment, Preliminary Draft Environmental Impact Statement and Preliminary Draft Updated Critical Yield Analyses Report due to significant controversy and a high level of complexity.

A Type II IEPR Safety Assurance Review (SAR) will not be part of the review process. This update effort is an operational scheme that does not represent a significant threat to human life. It does not involve the use of innovative materials or novel engineering methods, redundancy, resiliency, or robustness, and since it has no design and construction activities, has no unique construction sequencing or a reduced or overlapping design construction schedule. Therefore, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review for the ACF Basin

Master Manual, the individual project WCMs, the WCPs, the updated Critical Yield Analyses Report, the WSSA, or the Draft EIS.

b. Products to Undergo Type I IEPR. The IEPR will cover the documents listed paragraph 6.a above (also shown in the DQC/ATR/IEPR Table) and will address all the underlying engineering, economics, and environmental work conducted during the process. Due to the nature of the proposed project, it is preferable that IEPR be conducted prior to release of the documents to the public. This is to ensure that technical concerns have been identified and resolved. This may require that concurrent reviews (IEPR and HQUSACE) be executed. If this becomes a requirement, prior agreement for concurrent review will be obtained from HQUSACE.

c. Required Type I IEPR Panel Expertise. Four to ten panel members are anticipated for IEPR because the complexity of analysis and timeliness of review may require more than one subject matter expert in each discipline. The IEPR panel requires a broad level of expertise that spans engineering, planning, economics, water management and biological sciences. At minimum the following disciplines should be represented on the IEPR panel:

Discipline	Required Expertise
Hydrology & Hydraulics	Panel member(s) should have extensive knowledge in the fields of computational modeling of hydrology, hydraulics and water quality in large-river basins. The team member should have an understanding of computer modeling techniques that will be used for this project (HEC-ResSim, and HEC-5Q).
Environmental	The panel member(s) should have extensive knowledge of the integration of environmental evaluation and compliance requirements, pursuant to national environmental statutes (NEPA), applicable executive orders, laws and regulations, and other Federal planning requirements, including the specifics of Endangered Species Act requirements and the Magnusen-Stevens Act. Panel member(s) will be familiar with the types of aquatic ecological resources found in the basin.
Socioeconomics	The panel member(s) should have experience in evaluating resource conditions and impacts related to municipal and industrial water supply as well as operational changes in lakes and river basin systems to hydropower, inland navigation and lake recreation. Panel member(s) will have knowledge of benefits and costs utilized in flood risk management, navigation, water supply, hydropower and recreation analyses.
Water Management	A panel member experienced in planning and/or managing the operations of multi-project river systems for purposes of flood control, hydropower, water supply, water quality, recreation, navigation, and fish and wildlife.

d. **Documentation of Type I IEPR.** DrChecks review software will be used to document all IEPR comments, responses and associated resolutions accomplished throughout the review process and prepare the Review Report.

The IEPR will be coordinated by the WMRS-PCX and managed by an Eligible Outside Organization (OEO) external to the Corps. IEPR panels shall address the adequacy and acceptability of the economic, engineering, and environmental methods, models and analyses used and evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels will be given the flexibility to bring important issues to the attention of decision makers. The IEPR comments should generally include:

(1) The review concern including the information deficiency or incorrect application of policy, guidance or procedures;

(2) The basis of concern will be referenced by citation of the appropriate law, policy, guidance, or procedure that has not been properly followed.

(3) The significance of the concerns, including the importance of the concern with regard to its potential impact on plan selection, recommended plan components, efficiency, effectiveness, implementation responsibilities, safety, Federal interest or public acceptability; and

(4) Action(s) needed to resolve the concern(s).

Review panels will be instructed to not make a recommendation on whether a particular alternative should be implemented, because it is the responsibility of the ASA(CW) to approve or disapprove the Water Supply Storage Assessment Report and the Commander, South Atlantic Division (as the major subordinate command) to approve or disapprove the ACF WCM.

The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 120 days from the notice to proceed, but in any event will be delivered no more than 60 days after the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and the USACE response will be made available to the public, including through electronic means on the Internet.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. The reviews culminate in determinations that the recommendations in the reports 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. DQC and ATR augment and complement the policy review processes by address compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, Mobile District will seek issue resolution support from SAD and HQUSACE in accordance with the procedures outlined in Appendix H, Policy Compliance Review and Approval of

Decision Documents, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The Mobile District Office of Counsel is responsible for the legal review of each decision document and, if required, for signing a certification of legal sufficiency.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

The WSSA will evaluate the cost of water supply alternatives. The cost identified by the water supply alternatives will be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team and in the development of the review charges(s). The DX will also provide the Cost Engineering DX certification (if required). The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND 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, for the purposes of the EC, are defined as any models and analytical tools that planners use 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 the planning product. 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 (if required).

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 and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever 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.

a. Planning Models. No planning models are anticipated to be used in the development of the documents addressed in this Review Plan.

The U.S. Fish and Wildlife Service have developed and recommended a Reservoir Fisheries performance metric and a Shoal Bass performance metric. These metrics have been submitted to the Corps fisheries subject matter expert to ensure they are based on sound science and function as intended. If it is determined that the metrics are adequate for use, a recommendation will be made by the National Ecosystem Planning Center of Expertise to the Headquarters Model Review Team to approve these tools for a single time use.

a. Engineering Models. The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC ResSim 3.2	<i>The Hydrologic Engineering Center's Reservoir Simulation Model is used to model reservoir operations at one or more reservoirs for a variety of operational goals and constraints. The software simulates reservoir operations for flood management, low flow augmentation and water supply for planning studies, detailed reservoir regulation plan investigations, and real-time decision support. HEC-ResSim can represent both large and small scale reservoirs and reservoir systems through a network of elements (junctions, routing reaches, diversion, and reservoirs) that the user builds. The software can simulate single events or a full period-or-record using available time-steps. HEC-ResSim is a decision support tool that meets the needs of modelers performing reservoir project studies as well as meeting the needs of reservoir regulators during real-time events</i>	<i>HH&C CoP Preferred Model</i>
HEC5-Q	<i>The Hydrologic Engineer Center's System Water Quality Modeling module is used to analyze water quality conditions in a complex reservoir system for a given set of operational conditions. The model accepts user-specified water quality needs system-wide to analyze water temperature and up to 6 other water quality constituents to assess the effects on water quality of proposed reservoir-stream system operations.</i>	<i>HH&C CoP Preferred Model</i>

10. REVIEW SCHEDULES AND COSTS

The ACF WCM and supporting documents are not planning studies, but are undergoing DQC, ATR and IEPR due to its highly sensitive, technically complex and controversial nature. The WSSA Report is based upon a fully federally funded Water Supply Storage Assessment. As such, these do not include certain study benchmarks and there is no non-Federal cost share partner.

a. Review Schedule: Endorsement for concurrent MSC review and ATR and concurrent IEPR and HQUSACE reviews have been requested. A decision on concurrent reviews of the draft documents has not been made.

The schedule shown here is draft, and is subject to approval by the vertical chain.

Milestone	Review	Schedule Dates
Draft Updated Reservoir Critical Yield Analyses Report	DQC	February 2014
Draft Updated Reservoir Critical Yield Analyses Report	ATR	March 2014
Preliminary Draft ACF Basin Master Manual	DQC	September-November 2014
Preliminary Draft Water Supply Storage Assessment	DQC	September-November 2014
Preliminary Draft Environmental Impact Statement	DQC	September-November 2014
Draft ACF Basin Master WCM	ATR	December 2015-February 2015
Draft Water Supply Storage Assessment	ATR	December 2015-February 2015
Draft Environmental Impact Statement	ATR	December 2015-February 2015
Draft ACF Basin Master WCM	SAD	December 2015-February 2015
Draft Water Supply Storage Assessment	SAD	December 2015-February 2015
Draft Environmental Impact Statement	SAD	December 2015-February 2015
Draft ACF Basin Master WCM	HQ	March-May2015
Draft Water Supply Storage Assessment	HQ	March-May2015
Draft Environmental Impact Statement	HQ	March-May2015
Draft ACF Basin Master WCM	IEPR	March-May 2015
Draft Water Supply Storage Assessment	IEPR	March-May 2015
Draft Environmental Impact Statement	IEPR	March-May 2015
Draft Reservoir Critical Yield Analyses	IEPR	March-May2015
Draft Environmental Impact Statement	HQ*	July 2015
Draft Water Supply Storage Assessment	HQ*	July 2015
Draft ACF Basin Master WCM	HQ*	July 2015

*This is a second Headquarters level review included at the direction of the vertical team.

b. Review Cost: DQC is estimated to cost approximately \$50,000. ATR is estimated to cost approximately \$120,000. IEPR is estimated to cost approximately \$400,000. All reviews will be 100 percent federally funded.

c. Model Certification/Approval Schedule and Cost. All models to be used are certified or approved for use.

11. PUBLIC PARTICIPATION

The RP will be made available via the Mobile District's website (<http://www.sam.usace.army.mil/>). Public comments accepted anytime after the RP is posted. Public comments on the RP will be compiled every four months, and addressed as appropriate.

Project reviewers will be provided with copies of all comments and public concerns prior to beginning their reviews. It is not expected that the public will be asked to nominate potential peer reviewers, however that decision will be left to the OEO. The Review Report will be part of the final project decision document package, which will be made available to the public via the Mobile District website. All draft documents to be evaluated as part of this effort and the review reports, including IEPR

comments responses where appropriate, will be made available to the public. The public will have access to documentation via the Internet and libraries throughout the ACF Basin.

12. REVIEW PLAN APPROVAL AND UPDATES

The South Atlantic Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

Questions and comments on this review plan should be directed to:

Project Manager

Telephone: (251) 694-4637

South Atlantic Division

Telephone: (404) 562-5128

PCX/ATR Lead

Telephone: (918) 669-4921

ATTACHMENT 1: TEAM ROSTER

Product Delivery Team (PDT)

Executive Office

Public Affairs

Engineering Division

Hydraulics and Hydrology
Water Management
A-E Contracting
PAE

Operations Division

Natural Resources
Hydropower
Navigation
ACF Project
West Point Lake
Walter F. George Lake
George W. Andrews Lake
Lake Lanier
Lake Seminole

Planning Division

Environmental
Environmental
Socio-Economics
Cultural Resources
Plan Formulation/
Project Manager

Real Estate Division

Office of Counsel

Lead Counsel
Assisting Counsel

SAD (MSC) Team Members:

Office of Counsel

Lead Counsel

Engineering Division

Water Management

Planning Division

Environmental

ATR Team Members:

ATR Lead

Engineering Division

Water Management

Operations Division

Natural Resources

Hydropower

Navigation

Planning Division

Environmental

Socio-Economics

Cultural Resources

Plan Formulation

Southwestern Division (RMO) Team Members:

Water Management and Reallocation Studies Planning Center of Expertise

HQUSACE Team Members:

Regional Integration Team

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Name

Project Manager

Office Symbol

Date

SIGNATURE

Name

Architect Engineer Project Manager¹

Company, location

Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

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.

SIGNATURE

Name

Chief, Engineering Division

Office Symbol

Date

SIGNATURE

Name

Chief, Planning Division

Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
20 June 2011	Updated Review Plan Approval	

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
ACF	Apalachicola-Chattahoochee-Flint River	NER	National Ecosystem Restoration
AFB	Alternative Formulation Briefing	NEPA	National Environmental Policy Act
ASA(CW)	Assistant Secretary of the Army for Civil Works	O&M	Operation and maintenance
ATR	Agency Technical Review	OMB	Office and Management and Budget
CSDR	Coastal Storm Damage Reduction	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DPR	Detailed Project Report	OEO	Outside Eligible Organization
DQC	District Quality Control/Quality Assurance	OSE	Other Social Effects
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
EIS	Environmental Impact Statement	PAC	Post Authorization Change
EO	Executive Order	PMP	Project Management Plan
ER	Ecosystem Restoration	PL	Public Law
FDR	Flood Damage Reduction	QMP	Quality Management Plan
FEMA	Federal Emergency Management Agency	QA	Quality Assurance
FRM	Flood Risk Management	QC	Quality Control
FSM	Feasibility Scoping Meeting	RED	Regional Economic Development
GRR	General Reevaluation Report	RMC	Risk Management Center
Home District/MS	The District or MSC responsible for the preparation of the decision document	RMO	Review Management Organization
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RTS	Regional Technical Specialist
IEPR	Independent External Peer Review	SAR	Safety Assurance Review
ITR	Independent Technical Review	USACE	U.S. Army Corps of Engineers
LRR	Limited Reevaluation Report	WSSA	Water Supply Storage Assessment
MCX	Mandatory Center of Expertise	WCM	Water Control Manual
MSC	Major Subordinate Command	WRDA	Water Resources Development Act
NED	National Economic Development		