DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-PD

SEP 2 8 2010

MEMORANDUM FOR CHIEF, PLANNING DIVISION, SOUTH ATLANTIC DIVISION

SUBJECT: Comprehensive Everglades Restoration Plan (CERP), Florida, Water Conservation Area (WCA) 3 Decompartmentalization and Sheet Flow Enhancement Project (Decomp) Project Implementation Report (PIR) #1 - Review Plan

1. Reference: EC 1165-2-209, Civil Works Review Policy, 31 January 2010.

2. I hereby request MSC approval of the subject Review Plan (RP) (enclosed) and concurrence with the conclusion that Independent External Peer Review (IEPR) is necessary. The RP concludes that this project would be considered large, likely exceeding $100 million in total cost. Magnitude of the project triggers the requirement for independent external peer review. In addition, the large size and area of influence of the project, the potential for controversy or strongly differing positions, and the characterization of sheetflow also recommend IEPR for this project. The ECO-PCX endorsement is currently in draft and will be provided directly from the ECO-PCX.

3. The SAJ point of contact is James M. Baker, CESAJ Review Coordinator, Planning Division, CESAJ-PD-PW, (904) 232-2698.

Rebecca S. Griffith

Encl

REBECCA S. GRIFFITH, Ph.D, PMP
Chief, Planning Division

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

REPLY TO
ATTENTION OF

CESAD-PDS-P

2 June 2011

MEMORANDUM FOR Commander, Jacksonville District (CESAJ-PD /Rebecca S. Griffith)

SUBJECT: Comprehensive Everglades Restoration Plan (CERP), Florida, Water Conservation Area (WCA) 3 Decompartmentalization and Sheet Flow Enhancement Project (Decomp) Project Implementation Report (PIR) #1 – Review Plan

1. References:

a. Memorandum, CESAJ-PD, 28 September 2011, subject as above.

b. EC 1165-2-209, Civil Works Review Policy, 31 January 2010.

2. In accordance with EC 1165-2-209, Civil Works Review Policy, 31 January 2010, the Review Plan (RP) September 2010, revised March 2011, for CERP, FL, WCA 3 Decomp PIR #1, (enclosure), has been reviewed by this office and is approved.

3. The district should take steps to post the SAD-approved Final Revised RP and a copy of this approval memorandum to the SAJ District public internet website and provide a link to the Ecosystem Planning Center of Expertise (ECOPCX) for their use. Before posting to the web site, the names of Corps/Army employees should be removed.

4. The SAD point of contact for this action is Ms. Karen Dove-Jackson, CESAD-PDS-P, (404) 562-5225.

FOR THE COMMANDER:

Encl

WILBERT V. PAYNES
Chief, Planning and Policy
Community of Practice

REVIEW PLAN

Comprehensive Everglades Restoration Plan (CERP), Florida,
Water Conservation Area (WCA) 3 Decompartmentalization and
Sheet Flow Enhancement Project (Decomp)
Project Implementation Report #1
Miami Canal Backfill and Hydration of North WCA 3

Jacksonville District

MSC Approval Date: June 2, 2011
Last Revision Date: None

US Army Corps
of Engineers ®

REVIEW PLAN

Comprehensive Everglades Restoration Plan (CERP), Florida,
Water Conservation Area (WCA) 3 Decompartmentalization and
Sheet Flow Enhancement Project (Decomp)
Project Implementation Report #1
Miami Canal Backfill and Hydration of North WCA 3

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS 1
2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION 2
3. STUDY INFORMATION 2
4. DISTRICT QUALITY CONTROL (DQC) 7
5. AGENCY TECHNICAL REVIEW (ATR) 8
6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR) 10
7. MODEL CERTIFICATION AND APPROVAL 13
8. REVIEW SCHEDULES AND COSTS 15
9. PUBLIC PARTICIPATION 15
10. REVIEW PLAN APPROVAL AND UPDATES 16
11. REVIEW PLAN POINTS OF CONTACT 16
ATTACHMENT 1: ATR TEAM ROSTER 17
ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS 18
ATTACHMENT 3: REVIEW PLAN REVISIONS 19
ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS 20

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Comprehensive Everglades Restoration Plan (CERP), Florida, Water Conservation Area (WCA) 3 Decompartmentalization and Sheet Flow Enhancement Project (Decomp) Project Implementation Report (PIR) #1.

b. References

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 13 Mar 11
(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
(5) Decomp PMP, http://www.evergladesplan.org/pm/pmp/pmp_12_wca3_decom_p1.aspx
(6) South Atlantic Division and Jacksonville District Quality Management Plans

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, 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 outlines four 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 are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

(1) District Quality Control/Quality Assurance (DQC). All **decision documents** (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC, as provided in EC 1165-2-209, ¶ 8.

(2) Agency Technical Review (ATR). ATR is mandatory for all **decision documents** (including supporting data, analyses, environmental compliance documents, etc.), as provided in EC 1165-2-209, ¶ 9.

(3) Independent External Peer Review (IEPR). IEPR may be required for **decision documents** under certain circumstances, as provided in EC 1165-2-209, ¶ 10.

(a) Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies, as provided in EC 1165-2-209, ¶ 11.

(b) Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design 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 as provided in EC 1165-2-209, ¶ 12.

(4) Policy and Legal Compliance Review. All **decision documents** will be reviewed throughout the study process for their compliance with law and policy, as provided in EC 1165-2-209, ¶ 14.

(5) Cost Engineering Review and Certification. All **decision documents** shall be coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District. The DX, or in some circumstances regional cost personnel that are pre-certified by the DX, will conduct the cost ATR. The DX will provide certification of the final total project cost.

(6) Model Certification/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.

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. The RMO for the peer review effort described in this Review Plan is the National Ecosystem Restoration Planning Center of Expertise (ECO-PCX).

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to conduct ATR of cost estimates, construction schedules and contingencies. As the project is single-purpose, ecosystem restoration, RMO coordination with other centers of expertise is not contemplated at this time. As well, life safety is not anticipated to be an issue. Accordingly, there is no apparent need, at this time, to coordinate with the Risk Management Center.

3. STUDY INFORMATION

a. Decision Document. The Comprehensive Everglades Restoration Plan (CERP), Florida Water Conservation Area (WCA) 3 Decompartmentalization and Sheet Flow Enhancement Project (Decomp) Project Implementation Report (PIR) #1 will address the decompartmentalization of WCA 3A by backfill of the Miami Canal and the rehydration of north WCA 3, possibly using pump station(s) and spreader channels. In the future, a second Decomp PIR would be developed to address the barriers between WCA 3A and WCA 3B. It is anticipated, at this time, that additional Congressional authorization would be required. The PIR will include an integrated Environmental Impact Statement (EIS).

b. Study/Project Description.

i. **General Site Description**. WCA 3 is a large, shallow, managed water detention site that is located in western Broward and Miami-Dade Counties and is a short drive west from the major population centers of Ft. Lauderdale and Miami on Florida's southeastern coast. It lies south of Lake Okeechobee and the Everglades Agricultural Area, and north of Everglades National Park (ENP). Big Cypress National Preserve is to the west. It consists of approximately 915 square miles (585,600 acres). The project is divided into two distinct areas, WCA 3A and WCA 3B, by the L-67A and L-67C levee and canal system. See Figures 1 and 2. Additional

project information may be accessed at:
http://www.evergladesplan.org/pm/projects/proj_12_wca3_1.aspx.

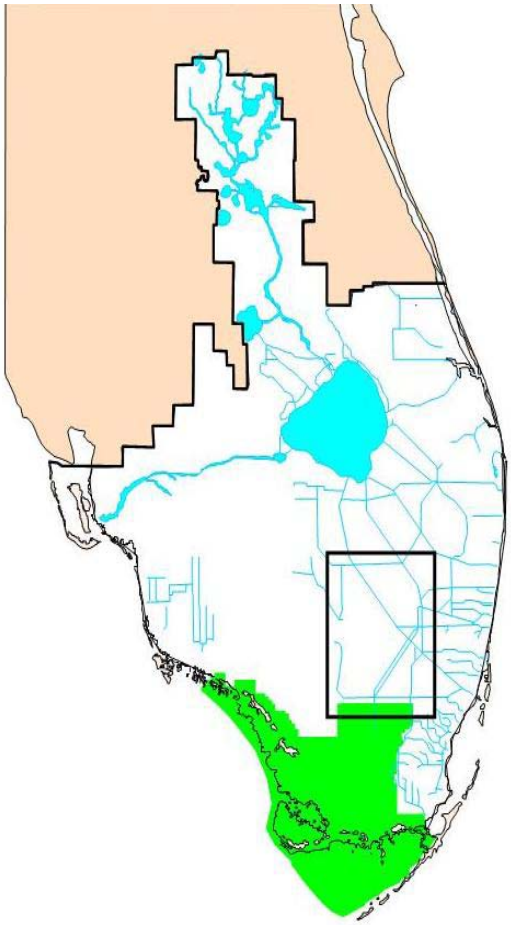

Figure 1. South Florida.

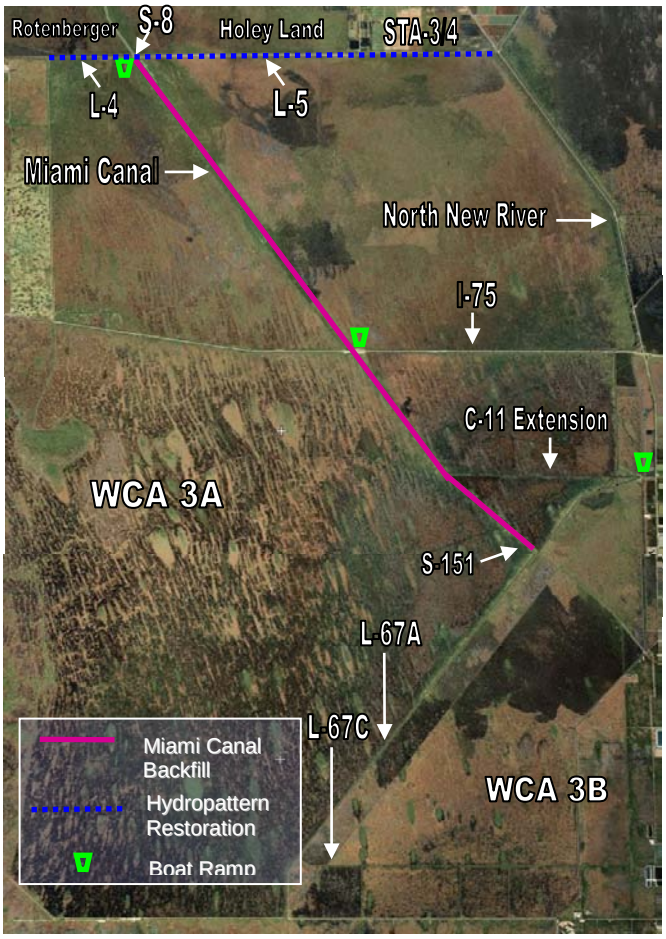

Figure 2. Decomp Study Area Map.

ii. **Project Scope**. The purpose of Decomp is to restore natural landscape patterns and native flora and fauna in WCA 3 (and eventually Everglades National Park). It is a major component of the Central and Southern Florida Project Comprehensive Review Study, which was approved in WRDA 2000 as the Comprehensive Everglades Restoration Plan (CERP). It is the first of an anticipated three Project Implementation Reports (PIRs) to address the approved Decomp plan. Decomp PIR 1 project consists of two primary components from CERP: Miami Canal (MC) backfill and a hydropattern restoration feature (HRF) along the northern boundary of WCA 3A.

iii. **Problems and Opportunities**. The primary consequence of water management actions in the Decomp study area (WCA 3 and the northern part of ENP) is unnatural hydrology. This change in hydrology has led to degradation of the historic slough, tree island, and sawgrass mosaic that previously characterized much of the study area, as well as the marl prairies that exist in the southern portion of the area. While historic landscape patterns have been generally lost, different portions of the study area have been impacted differently (e.g., northern WCA 3A is

over-drained while southern WCA 3A is holding water). The changes in the landscape pattern have had adverse impacts on wildlife.

The decompartmentalization of WCA 3A affords the opportunity to physically restore a significant expanse of what was historically prime Everglades landscape to a much more natural, self-sustaining and highly functional ecosystem. The chance to remove major artificial barriers to sheet flow within the project area comes close to re-creating topographically, the habitat that existed previously. This will lay the essential groundwork for all future CERP projects that will be carrying additional water flows into a less compartmentalized and more expansive system. This also opens up future opportunities with other Decomp projects to hydrologically connect with current ENP habitats.

iv. **Authority.** The Water Resources Development Act (WRDA) of 2000 (PL 106-541) was enacted in December 2000. Title VI of WRDA 2000 approved CERP, provided authorization of an initial suite of projects and included a number of other provisions, including outreach and periodic reports to Congress. Section 601(b)(2)(C) Initial Projects, item (viii) of WRDA 2000 provides the Federal authority for completion of the elements of the Decompartmentalization Project Part 1, which state:
(viii) Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within Water Conservation Area 3, at a total cost of $26,946,000, with an estimated Federal cost of $13,473,000 and an estimated non-Federal cost of $13,473,000.

Conditions are listed under Section 601(b)(2)(D):
(i) Project Implementation Reports. – Before implementation of a project described in any of clauses (i) through (x) of subparagraph (c), the Secretary shall review and approve for the project a project implementation report prepared in accordance with subsections (f) and (h).
(ii) Submission of Report. The Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environmental and Public Works of the Senate the project implementation report required by subsections (f) and (h) for each project under this paragraph (including all relevant data and information on all costs).
(iii) Funding Contingent on Approval. No appropriation shall be made to construct any project under this paragraph if the project implementation report for the project has not been approved by resolution adopted by the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environmental Public Works of the Senate.

As stated above, the WRDA 2000 allows the Secretary of the Army to review and approve the PIRs and implement those projects initially authorized in WRDA 2000 Sec 601(b)(2)(C) if project costs remain within the authorized maximum project costs, as defined by Section 902 of the WRDA of 1986 (16 U.S.C. 410r-8). If the project costs exceed the authorized amounts (Section 902, WRDA 1986 limits to 20% above authorized amount), review and approval of the PIR for project implementation will require additional Congressional Authorization.

v. **Project Delivery Team**. The project delivery team (PDT) is comprised of those individuals directly involved in the development of the decision document. The document will undergo full review regardless of whether portions were generated by the sponsor. Disciplines are listed below.

	ORGANIZATION								
Discipline	USACE	SFWMD	ENP	DEP	FWS	USGS	Miccosuke e Tribe	FDACS	FWCC
Project Manager	x	x							
Planning Technical Lead	x								
Biologist	x				x			x	x
Ecologist	x	x	x						
Archeologist	x								
Economist	x								
Engineering Technical Lead	x								
Civil Engineering Technician	x								
Civil Engineer	x								
Cost Estimating	x								
Hydraulic Engineer	x	x	x						
Geotechnical Engineer	x					x			
Real Estate Specialist	x								
Water Quality Specialist				x					
Liaison	x						x		

USACE: U. S. Army Corps of Engineers, **SFWMD**: South Florida Water Management District, **ENP**: Everglades National Park, **DEP**: Florida Department of Environmental Protection, **FWS**: Fish and Wildlife Service, **USGS**: United States Geological Survey, **FDACS**: Florida Department of Agricultural and Consumer Services, **FWCC**: Florida Wildlife Conservation Commission.

vi. **Vertical Team**. The Vertical Team includes District management, District Support Team (DST) and Review Integration Team (RIT) staff as well as members of the Planning Community of Practice (PCoP).

Organization	Discipline
USACE - CESAJ	Planning and Engineering
CESAD	Chief, Plan Formulation
CECW-SAD	RIT Manager
CECW-PC	Office of Water Project Review Manager
CEMVD	Ecosystem Restoration PCX (ECO-PCX) Director
CEMVD	ECO-PCX Deputy Director
CEMVD	ECO-PCX Technical Director
CEMVR-PM-F	ECO-PCX Action District

c. Factors Affecting the Scope and Level of Review. This section discusses factors pertinent to the risk informed decisions on the appropriate scope and level of review. The discussion is intended to be detailed enough to assess the level and focus of review to support the PDT, PCX, and vertical team decisions on the appropriate level of review and types of expertise represented on the various review teams. The following is a discussion of pertinent risk factors:

i. **Significant threat to human life. –** Project failure is unlikely to result in risk to human life or health. Alternatives currently under evaluation consist of backfilling/plugging the Miami Canal, potential spreader canal along the northern boundary of WCA 3, and 1-2 pump stations. Failure will most likely result in ineffective sheet flow and short circuiting back to the Miami Canal.

The Decomp project alternatives include modifications to existing levees, specifically the L-4 and L-5 levees at the northern boundary of WCA-3A. These levee systems have both an internal levee on the southern side of the L-4/L-5 canals, as well as an external levee on the northern side of the L-4/L-5 canals. All modifications proposed with the DECOMP alternatives are to the internal levees only. Modifications to these internal levees are not anticipated to impact the level of service for flood protection and do not present an increased risk to human health and safety, neither downstream nor upstream from the project area.

In addition to the proposed modifications to the L-4 and L-5 levee systems, the project alternatives also propose degrading of the discontinuous spoil mounds along the Miami Canal within WCA-3A and construction of spreader canal systems within the interior marsh of WCA-3A, parallel to the northern boundary of WCA-3A, extending both east and west of the existing S-8 pump station. The Miami Canal spoil mounds currently serve no flood control purpose and their removal will not impact the flood control performance of WCA-3A. The construction of a spreader canal system, dependant on the final project design and

the extent of project backfill of the northern Miami Canal, may also decrease tailwater conditions at the S-8 pump stations and potentially result in improved flood control performance.

The lands immediately north of the DECOMP WCA-3A project area are the Holey Land Wildlife Management Area, Rotenberger Wildlife Management Area, and Stormwater Treatment Area 3/4, each jointly managed by the Project Sponsor (SFWMD) and the Florida Fish and Wildlife Conservation Commission. The presence of these recreation and water quality treatment areas adjacent to the project results in a low level of risk to human life in the event of a breach to the remaining external L-4 and L-5 levee systems, which will be unmodified by the DECOMP project.

Safety assurances and formal determination of the level of life safety risk will be conducted in accordance with USACE regulations and coordinated with the District and MSC Levee Safety Program Managers, and the Risk Management Center. The final risk assessment will be presented in detail in the PIR and will be reviewed as part of the PIR Type I IEPR.

ii. **Total project cost >$45M**. – The project will be in excess of $100 million in total cost.

iii. **Requested by affected State Governor**. – Not requested.

iv. **Request by head of a reviewing Federal Agency**, if determined likely to have an adverse impact on environmental, cultural, or other resources under his/her jurisdiction (after implementation of proposed mitigation plans). – Not requested

v. **Significant public dispute as to size, nature or effects.** – The potential for controversy regarding project implementation is high because of interagency and stakeholder interest.

vi. **Significant public dispute as to the economic or environmental cost or benefit.** – There is potential for public dispute.

vii. **Plan based on novel methods, presents complex challenges for interpretation, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.** – Characterization of sheet flow has been more challenging for predicting stage and depth. This PIR is expected to make stronger predictions for sheet flow.

viii. **Any other circumstances where the Chief of Engineers determines IEPR is warranted.** – None have been identified.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The local sponsor is providing significant assistance in conducting the study. In-kind contributions will be treated the same as government-prepared materials, with respect to technical review.

4. DISTRICT QUALITY CONTROL (DQC)

Internal District control of product quality will be accomplished by PDT and supervisory reviews of interim and final products. The home district quality management plan addresses the conduct and documentation of this fundamental level of review. DQC documentation will be via memorandum for record, maintained in the project file, and made available to ATR and IEPR Teams.

5. AGENCY TECHNICAL REVIEW (ATR)

a. Products to Undergo ATR. ATR will be, or has been, performed, at a minimum, on all products subjected to review outside of the Jacksonville District, including FSM materials, AFB materials, Draft PIR and Final PIR.

b. Required ATR Team Expertise. Skilled and experienced personnel who have not been associated with the development of the study products perform the ATR. ATR team members may be employees of U.S. Army Corps of Engineer Districts, other Federal agencies, state or local government agencies, universities, private contractors or other institutions. The key factor is extensive, expert knowledge in their field of expertise. The ATR team has been identified by the ECO-PCX and is comprised of individuals from all the technical disciplines that were significant in the preparation of the report. ATR team members are listed in Attachment 1. Technical disciplines determined to be appropriate for this review include: Plan Formulation, Economics, Environmental Restoration Analysis, Environmental Regulatory Compliance (e.g., NEPA documentation preparation), Engineering Design, Cost Estimating, Hydrology and Hydraulics (H&H), H&H Modeling, Water Control, Geotechnical Engineering, and Real Estate.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in large scale component based ecosystem restoration.
Economics	The economics reviewer should be a senior economist with significant experience evaluating ecosystem restoration project benefits and costs. With experience in identifying incidental benefits (preferably flood risk management and water supply).
Environmental Resources/NEPA Compliance	Environmental Resources reviewer should be a senior biologist/ecologist/environmental engineer, preferably with significant experience in ecosystem restoration and familiarity with freshwater, coastal and estuarine systems. Should be able to review for NEPA compliance (including cultural resources coordination) and quality and applicability of ecosystem benefits evaluations.
Hydrology, Hydraulic Engineering and Modeling	The reviewer should be a senior hydraulic engineer with significant experience in the field of hydrology and hydraulics,

	including a general knowledge of South Florida hydrology and water management. The reviewer should have significant experience with the application of integrated surface water and groundwater models, including the capability to review typical data output from hydrologic models. Prior experience with some of the hydrologic modeling tools selected for project application, including the SFWMM, RSM Glades-LECSA, RMA-2, and HEC-RAS, is preferred but not required.
Geotechnical Engineering	Experience in geotechnical aspects of water storage and conveyance features, with familiarity of south Florida geology.
Civil Engineering	Experience in engineering/construction management for water storage and conveyance and sediment control.
Cost Engineering	Approved by the Cost DX
Real Estate	Senior real estate specialist experienced in contributing to large civil works projects.

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

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. 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 in accordance with the policy issue resolution process described in either 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 considered 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 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;
- Identify and summarize each unresolved issue (if any); 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.

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, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

a. **Decision on IEPR.** The Jacksonville District conclusion is that this project would be considered large, likely exceeding $100 million in total cost. Magnitude of the project triggers the requirement for independent external peer review. In addition, the large size and area of influence of the project, the potential for controversy or strongly differing positions, and the characterization of sheetflow also recommend Type I IEPR for this project. As stated in paragraph 3.c.i., failure of the currently envisioned project will not result in risk to human life or health. It is currently anticipated that a Type II IEPR will not be required. However, this decision will be reviewed as the project progresses and moves toward the Implementation Phase.

Certain aspects of Decomp have proven challenging, such as coordinating with the recreational sports fishermen as they have strong opinions regarding the waterways. Another challenge will be interpreting the ecological benefits of hydrologic changes and linking the hydrology to the biology. The Miccosukee Indians have been invited to be PDT members. There will have to be a concerted effort to talk with the tribe government to government.

There are elements of risk associated with the Decomp Project. The risk and associated cost of rerouting water supply deliveries. The uncertainty of the amount of fill acquired and required to fill the Miami Canal and the State of Florida's Long Term Plan which will require close coordination in the future.

Detailed scope of the IEPR will be determined in advance of the review. Preliminarily, the cost of IEPR is anticipated to be approximately $200K. Significant or relevant public or agency comments received prior to or during IEPR will be provided to the panel of reviewers.

b. **Products to Undergo Type I IEPR.** The Draft Project Implementation Report (DPIR) and technical appendices will be reviewed. The scope of PIR IEPR should include:

i. General review of the revised draft report for completeness and adequate telling of the story.

ii. Completeness and appropriateness of ecosystem restoration analyses.

iii. Completeness and appropriateness of economic analyses.

iv. Completeness and appropriateness of engineering analyses.

v. Safety Assurance (review of final risk assessment)

c. Products to Undergo Type II IEPR. None expected at this time.

d. Required Type I IEPR Panel Expertise. Each panel member should be a professional from academia, a public agency, consulting firm, or similar vocation with a minimum of 10 years demonstrated experience in their area of expertise. Panel members should be familiar with large, complex civil works projects with high public and interagency interests.

IEPR Panel Members/Disciplines	Expertise Required
Planning/Economics	The Planner/Economics Panel Member should be a professional from academia, a public agency or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in evaluating and conducting complex multi-objective public works projects with competing trade-offs. Experience should encompass corridor projects with high public and interagency interests and the corridors are either through or have nearby project impacted sensitive habitats.
Environmental/Ecological Evaluation	The Ecological Evaluations Panel Member should be a scientist from academia, public agency, non-governmental entity, or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in evaluating and conducting ecological evaluations for complex multi-objective public works projects with competing trade-offs. Experience should encompass corridor projects with high public and interagency interests and the corridors are either through or have nearby project impacted sensitive habitats.
Cost Engineering/Construction Management	The Cost Engineering/Construction Management Panel Member should be an Engineer from academia, a public agency, non-governmental entity, or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in performing cost engineering/construction management for all phases of the project, including safety assurance. Active participation in related professional societies is encouraged. Panel member should be familiar with the construction industry and practices used in Florida and/or the Southeastern United States. This discipline may require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline. EC-1165-2-209, Appendix D, paragraph 3.d states, "Each PCX must coordinate with the Cost Engineering Directory of

	Expertise (DX) at the Walla Walla District. In cases where the Cost Engineering DX identifies the need for Type I IEPR, it will inform the assigned PCX and will assist the PCX with establishing the charge for the external independent peer review." The OEO will be tasked to ensure that the panel member or members will be able to accomplish the charge.
Hydraulic Engineer	Hydraulic Engineering Panel Member should be from academia, public agency or an Architect-Engineer or Consulting Firm with a minimum 10 years demonstrated experience in hydraulic engineering. Active participation in related professional societies is encouraged.
Geotechnical Engineer	The Geotechnical Panel Member should be a Professional Engineer from academia, a public agency, or an Architect-Engineer Consulting Firm with a minimum 10 years demonstrated experience in embankment design (i.e. slope stability, seepage evaluation, settlement analysis, and construction methods) for flood control and water storage, cut/fill operations, construction dewatering, and seepage control. Experience should also include geotechnical evaluation of flood risk management structures. Active participation in related professional societies is encouraged.
Other	Jacksonville District and/or SFWMD Panel Member Nomination (Reserved)

e. **Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.c. above. 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 60 days following 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 USACE response will be made available to the public, including through electronic means on the internet.

7. MODEL CERTIFICATION AND APPROVAL

Planning Models. The planning "model" or methodology employed to evaluate, compare and select plans consists of assigning values to a variety of performance measures and combining the values for each alternative, then assigning a habitat unit value score. A draft list of the proposed performance measures, metrics, and targets is provided below:

a. Inundation Duration in the Ridge and Slough Landscape

The performance measure quantifies the percent period of record of inundation within the project area. The target for this performance measure is indicator region performance within NSM envelopes except where deviations are deemed ecologically beneficial.

b. Sheetflow in the Everglades Ridge and Slough Landscape

The performance measure consists of two metrics: (a) timing of flows, and (b) distribution and continuity of flows. The target for this performance measure is restoration of pre-drainage timing of flows within the project area as simulated by the NSM except where deviations are deemed ecologically beneficial.

c. Hydrologic Surrogate for Soil Oxidation

The performance measure quantifies drought intensity within the project area. Drought intensity is calculated by multiplying depth to water table from ground surface (ft) by duration (days) of belowground water levels to yield a ft-days below land surface summary. The target for this performance measure is to reduce peat exposure to oxidation by using the NSM as a target, except where deviations are deemed ecologically beneficial.

d. Correlation of Flow Magnitude and Direction in the Everglades Ridge and Slough Landscape

The performance measure consists of two metrics: (1) direction of flow, and (2) flow magnitude. For this performance measure a full backfill of the Miami Canal with all spoil mounds removed, represents the restored condition. Flow vectors from the full backfill of the Miami Canal will be the target. Direction of flow will be evaluated within the project area using the cosine similarity index which provides a measure of fit-to-target direction. Magnitude of flow will be evaluated using a coefficient of determination which provides a to measure fit-to-target magnitude.

e. Greater Everglades Aquatic Trophic Levels Small-Sized Freshwater Fish Density

The performance measure predicts small-sized freshwater fish density based on the simulated time since the last dry-down within the project area. The metric applies logistic equations generated from a long-term data set collected in Taylor Slough, Shark River Slough, and Water Conservation Areas 3A and 3B to estimate daily small-sized freshwater fish density. The target is to maximize fish density.

f. Slough Vegetation

The performance measure consists of four metrics: (1) maximum continuous hydroperiods, (2) continuous dry down events, (3) wet season average depth, and (4) dry season average depth.The hydrologic metrics are used to determine suitability for slough vegetation. Two indicator species (*N. odorata*, and *E. elongata*) were selected as representative indicators of slough vegetation . The target for this performance measure is the empirical frequency curves from the NSM that most closely matches the slough vegetation optima.
The DECOMP Ecological and Water Quality sub-team has also proposed the following performance measure to be evaluated using non-model based output (GIS). The metrics and targets have not yet been finalized:

g. Restoring Ecological Connectivity through Removal of Man-Made Barriers to Flow

The performance measure consists of three separate metrics: (1) miles of marsh reconnected, (2) acres of wetland restored, and (3) number and acreage of tree islands reconnected. The first metric quantifies the miles of marsh reconnected ("width of sheetflow) by full removal of levees and by canal backfilling. This metric is quantified in miles, in increments of 0.10 mile. The target is maximum reconnection. The second metric quantifies the acres of wetland restored by full removal of levees and by canal backfilling. This metric is quantified in acres. The target is to maximize the sum of acres restored. The third metric is calculated by levee and canal removal that allow restoration of the shape and topography of bisected tree islands. The target is to maximize the total number of reconnected tree islands and the acres of tree islands recreated.

This is a comprehensive list of performance measures, to date, that may be used to evaluate, compare and select a plan. For the final subset, full details of the methodology will be provided to the ECO-PCX for review and approval for individual use. PCX model review is currently projected to take 6 weeks: 4 weeks for initial review comments, one week for SAJ responses, and one week for PCX final report and final issue resolution. At the discretion of the PCX, model review may be incorporated into the IEPR process, described in a below section. Model review is projected for 2012. Schedule and cost is provided in Section 9, below.

h. Physical Model. In addition to the above planning model methodology, a physical model was employed to shed light on the feasibility and effectiveness of modifying flow through existing levee/canal systems to achieve sheet flow and related ecosystem benefits. Lessons learned may be applicable to this phase of study and certainly will be for future phases. Data and experience gained from the field test will be incorporated into a project operating manual for the future full-scale WCA 3 Decomp and Sheet Flow Enhancement Project. IEPR will be performed for the physical model application in the context of review of the planning report. The Final EA, Finding of No Significant Impact, and Design Test Documentation Report (DTDR) for the Physical Model of the WCA 3 Decompartmentalization and Sheet Flow Enhancement Project are available online at http://tinyurl.com/yhjz4be.

Engineering Models. Four engineering models are proposed for the Decomp project. Model certification status updates are provided below for the Hydrology and Hydraulics (H&H) models which are currently proposed to support Decomp PIR #1:

i. Regional Model, SFWMM (2x2): SET Certified (Allowed for Use)

ii. Sub-regional Model, RSM Glades-LECSA: SET review will be requested by SFWMD following completion of model development efforts;

iii. Project-scale Miami Canal Model, RMA-2: SET Certified (CoP Preferred);

iv. Canal and Structure Modifications Model, HEC-RAS: SET Certified (CoP Preferred)

8. REVIEW SCHEDULES AND COSTS

a. Consolidated Schedule.

ATR of FSM Materials	Completed Apr 2008
Physical Model ATR	Completed Jun 2009
Planning Model Certification/Approval	Sep 2012
ATR of AFB Materials	Jan 2012
ATR of Integrated Draft Report and EIS	Sep 2012
IEPR of Integrated Draft Report and EIS	Jan 2013
Public and Agency review of Integrated Draft Report and EIS	Jan 2013
ATR of Final Report	Jun 2013
Publication of Final Integrated Final Report and EIS	Dec 2013

b. Consolidated Preliminary Cost Estimate.

- Physical Model ATR - Completed
- Planning Model Certification - $100K
- Remaining 3 ATRs - $160K
- PIR IEPR - $200K

9. PUBLIC PARTICIPATION

a) Significant and relevant public comments from public scoping processes will be included in report versions subjected to ATR and IEPR.

b) Public comments received during review of the Draft PIR and EIS, and at any public meetings held during the public review period will be included in the Final PIR/EIS. They will not be available during the ATR and IEPR review periods.

c) Public review of the Draft PIR/EIS will begin after the completion of the ATR process and the Corps of Engineers' policy guidance memo, and following a successful CWRB. The period will last 45 days as required by law.

d) The public review of necessary State or Federal permits will also take place during this period.

e) Upon completion of the review period, comments will be consolidated in a matrix and addressed, if needed. A comment resolution meeting will take place if needed to decide upon the best resolution of comments. A summary of the comments and resolutions will be included in the document.

10. 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. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. 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.

11. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Jacksonville District Review Manager, 904-232-2698
- Jacksonville District Project Manager, 904-232-1794
- South Atlantic Division Point of Contact, 404-562-5206
- Ecosystem Restoration Center of Expertise (ECO-PCX), 309-794-5448

ATTACHMENT 1: ATR TEAM ROSTER

Discipline/Expertise	**Name**	**District/Division**
Eco-PCX ATR Manager		MVD
District ATR Coordinator		Jacksonville/SAD
Agency Technical Review Team		
FPIR		
ATR Lead/Eco Rest Plan Formulation		Sacramento/SPD
Environmental Compliance		Sacramento/SPD
Restoration Biologist		San Francisco/SPD
Real Estate		Savannah/SAD
Civil Design		Sacramento/SPD
Geotechnical		Sacramento/SPD
Hydrology and Hydraulics		San Francisco/SPD
Cost Engineering		Walla Walla/NWD

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION 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 1165-2-209. 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[sm].

SIGNATURE _____ Date _____
Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager[1]
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
Office Symbol

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 _____ Date _____
Name
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____
Name
Chief, Planning Division
Office Symbol

[1] Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

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