

REVIEW PLAN

Central Everglades Planning Project, Florida Project Implementation Report

Jacksonville District

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**US Army Corps
of Engineers®**

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TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS.....	1
2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION.....	1
3. STUDY INFORMATION.....	1
4. DISTRICT QUALITY CONTROL (DQC).....	11
5. AGENCY TECHNICAL REVIEW (ATR).....	12
6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR).....	15
7. POLICY AND LEGAL COMPLIANCE REVIEW.....	18
8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION.....	18
9. MODEL CERTIFICATION AND APPROVAL.....	18
10. REVIEW SCHEDULES AND COSTS.....	23
11. PUBLIC PARTICIPATION.....	25
12. REVIEW PLAN APPROVAL AND UPDATES.....	26
13. REVIEW PLAN POINTS OF CONTACT.....	26
ATTACHMENT 1: TEAM ROSTERS.....	28
ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS.....	30
ATTACHMENT 3: REVIEW PLAN REVISIONS.....	32
ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS.....	33

1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Central Everglades Planning Project (CEPP), Florida, Project Implementation Report (PIR).

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, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, Change 2, 11 Mar 2011
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Project Management Plan (PMP) for the Central Everglades Planning Project study
- (6) Enterprise Standard (ES)-08101, Software Validation for the Hydrology, Hydraulics, and Coastal Community of Practice, 01 Jun 2011

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, decision documents are subject to safety assurance review, cost engineering review and certification (per EC 1165-2-209), and planning models are subject to certification/approval (per EC 1105-2-412). Guidance on quality assurance for engineering models is contained in ER 1110-2- 1150, Engineering and Design for Civil Works Projects.

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 Center of Expertise (ECO-PCX).

The ECO-PCX 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, construction schedules, and contingencies. The ECO-PCX will also coordinate review and endorsement of this review plan with the Risk Management Center (RMC) because of potential for life safety issues, associated with levees and with the Planning Center of Expertise for Flood Risk Management (FRM-PCX).

3. STUDY INFORMATION

a. **Decision Document.** The decision document is the PIR with an Environmental Impact Statement (EIS) for the CEPP. The CEPP focuses on developing the next phase, or third generation, of CERP projects for the central Everglades region and is a national pilot project in the Corps' streamlined planning process. A Project Implementation Report (PIR) will be developed for the CEPP and will

require approval by the Chief of Engineers and Congressional authorization. The PIR will also include an integrated Environmental Impact Statement (EIS).

b. Study/Project Description.

The Everglades ecosystem encompasses a system of diverse wetland landscapes that are hydrologically and ecologically connected across more than 200 miles from north to south and across 18,000 square miles of southern Florida. In 2000, the U.S. Congress authorized the Federal government, in partnership with the State of Florida, to embark upon a multi-decade, multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) to further protect and restore the remaining Everglades ecosystem while providing for other water-related needs of the region. The CERP was approved in Section 601(b)(1)(A) of the Water Resources Development Act (WRDA) of 2000. The authorization states:

(b) Comprehensive Everglades Restoration Plan. –

(1) Approval. –

(A) IN GENERAL. – Except as modified by this section, the Plan is approved as a framework for modifications and operational changes to the Central and Southern Florida Project that are needed to restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, and the improvement of the environment of the South Florida ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized.

Specific authorization for the CEPP will be sought under Section 601(d) as a future CERP project:

(d) AUTHORIZATION OF FUTURE PROJECTS.—

(1) IN GENERAL.—Except for a project authorized by subsection (b) or (c), any project included in the Plan shall require a specific authorization by Congress.

(2) SUBMISSION OF REPORT.—Before seeking congressional authorization for a project under paragraph (1), the Secretary shall submit to Congress—

(A) a description of the project; and

(B) a project implementation report for the project prepared in accordance with subsections (f) and (h).

Sections 601(f) and (h) provide a requirement to prepare a Project Implementation Report which is applicable to the CEPP:

(f) EVALUATION OF PROJECTS.—

(1) IN GENERAL.—Before implementation of a project authorized by subsection (c) or (d) or any of clauses (i) through (x) of subsection (b)(2)(C), the Secretary, in cooperation with the non-Federal sponsor, shall complete, after notice and opportunity for public comment and in accordance with subsection (h), a project implementation report for the project.

(2) PROJECT JUSTIFICATION.— (In summary, this section states that the project must be cost-effective and justified by the environmental benefits derived by the South Florida ecosystem).

(h) ASSURANCE OF PROJECT BENEFITS. —

(In summary, this section requires the CERP to be implemented in a manner that is protective of the South Florida Ecosystem and other water-related needs of the region, including water supply and flood protection.

CERP involves modification of the existing network of drainage canals and levees that make up the Central and Southern Florida Flood Control Project (C&SF). Since 2000, much progress has been made. Construction has begun on the first generation of CERP project modifications already authorized by Congress. Project Implementation Reports (PIRs) have also been completed, or are nearing completion, for the second generation of CERP projects for Congressional authorization. The next step for implementation of CERP is to redirect a portion of water that is currently discharged to the east and west coast estuaries from Lake Okeechobee and restore water flow to the south, allowing for restoration of natural habitat conditions and water flow in the central Everglades and re-connecting the ecosystem from Lake Okeechobee to Everglades National Park (ENP) and Florida Bay.

The Central Everglades Planning Project (CEPP) focuses on developing the next phase, or third generation, of CERP projects for the central Everglades region and it is being conducted as a national pilot project in the Corps' streamlined planning process (*USACE Recommendations for Transforming the Current Pre-Authorization Study Process*, January 2011).

The CEPP will develop the initial increment of the project features that provide for storage, treatment and conveyance south of Lake Okeechobee, decompartmentalization by removal of canals and levees within Water Conservation Area 3 (WCA 3), and seepage management to retain water within the natural system.

The study area for the CEPP encompasses a portion of the greater Everglades system including Lake Okeechobee, the Northern Estuaries (St. Lucie River and Indian River Lagoon, and the Caloosahatchee River and Estuary), the Everglades Agricultural Area, the Water Conservation Areas, Everglades National Park (ENP), Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast Area (also referred to as the Atlantic Coastal Ridge) (Figure 1).

Lake Okeechobee

Lake Okeechobee is a large, roughly circular lake with a surface area of approximately 730 square miles. It is a broad, shallow lake that lies 30 miles west from the Atlantic coast and 60 miles east of the Gulf of Mexico in the central peninsula of Florida. It serves as the principal water supply reservoir for southern

Florida, and is also used for navigation, flood control and recreation. The lake is impounded by a system of encircling levees and has 6 outlets: the St. Lucie Canal eastward to the Atlantic Ocean; the Caloosahatchee Canal and River westward to the Gulf of Mexico; and four agricultural canals – the West Palm Beach, Hillsboro, North New River and Miami.

Northern Estuaries

The Northern Estuaries are composed of two different systems that receive discharges from Lake Okeechobee. The eastern portion is composed of the St. Lucie River which feeds into the St. Lucie Estuary, part of a larger system known as the Indian River Lagoon. It has been designated an Estuary of National Significance and is part of the U.S. Environmental Protection Agency-sponsored National Estuary program. The western portion is composed of the Caloosahatchee River, and the Caloosahatchee Estuary.

Everglades Agricultural Area

The Everglades Agricultural Area (EAA) is approximately 1,100 square miles in size and is located immediately south of Lake Okeechobee. Much of this rich, fertile land is devoted to sugarcane production, and is crossed by a network of canals that are strictly maintained to manage water supply and flood protection.

Water Conservation Areas

The Water Conservation Areas are situated south and east of the EAA and comprise an area of approximately 1,350 square miles, and are about 40 miles in width and 100 miles in length from Lake Okeechobee to Florida Bay. The Water Conservation Areas provide for floodwater retention, public water supply, and also serve as the headwaters of Everglades National Park. The Water Conservation Areas are divided into three major sections: WCA 1 (Loxahatchee National Wildlife Refuge), WCA 2, and the largest of the Water Conservation Areas, WCA 3.

Everglades National Park

Everglades National Park (ENP) is located to the south of the Water Conservation Areas, and is the third largest National Park in the continental U.S. The ENP covers approximately 2,353 square miles and is extremely low and flat, with total elevation changes of only 6 feet from Tamiami Trail south to Florida Bay. Established in 1947, ENP possesses a unique landscape comprised of sawgrass sloughs, tropical hardwood hammocks, offshore coral reefs, mangrove forest, and lakes, ponds and bays.

Southern Estuaries

Biscayne Bay, a shallow tidal sound, approaches 300 square miles in size. Although the northern and central portions have been greatly affected by development and human encroachment, the southern portion of the Bay includes Biscayne National Park with Card and Barnes Sounds having been designated part of the Florida Keys National Marine Sanctuary. Florida Bay comprises a large portion of Everglades National Park, and is a shallow estuarine system with an average depth of less than three feet. Florida Bay is the main receiving water of the greater Everglades system and is heavily influenced by changes in the timing, distribution and quantity of freshwater flows into the estuaries.

Lower East Coast Area

The Atlantic Coastal Ridge is generally referred to as the Lower East Coast (LEC) Area, is nearly completely urbanized, and encompasses Palm Beach, Broward and Miami-Dade Counties. The LEC is the most densely populated area in Florida, and includes the population centers of West Palm Beach, Fort Lauderdale and Miami. Water levels in this area are tightly controlled near the shoreline to prevent overdrainage and manage saltwater intrusion, and the entire area is dependent upon operation of the C&SF system for flood control and water supply.

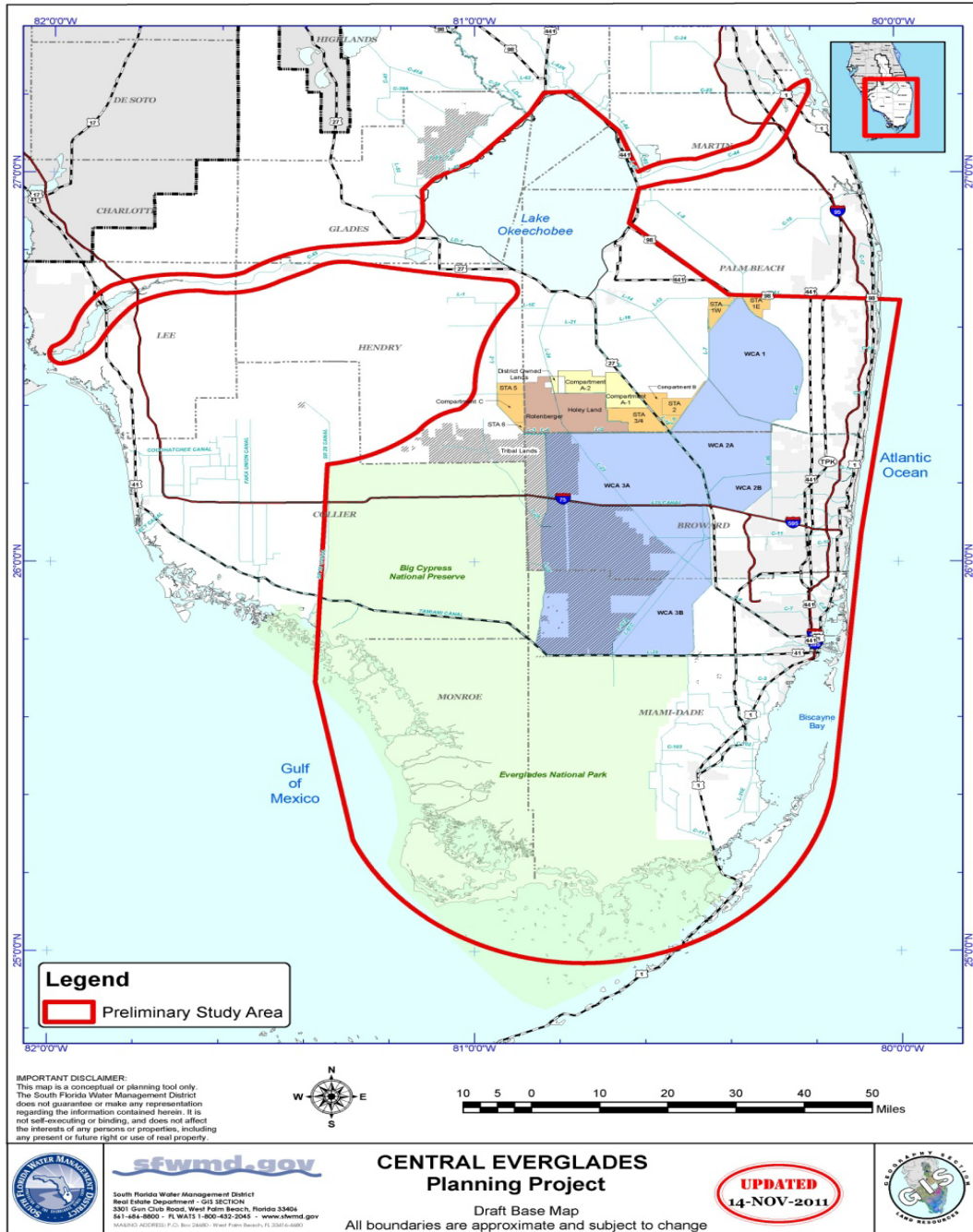


Figure 1. Preliminary Study Area

The purpose of the CEPP is to restore the habitat in the Everglades ecosystem and Florida Bay by improving the quantity, quality, timing and distribution of water flows to the central Everglades (WCA 3 and ENP). The CEPP will be composed of increments of project components that were originally recommended in the 1999 CERP Comprehensive Review Study (Yellow Book).

The scope of the CEPP will include increments of water storage, treatment and conveyance; decompartmentalization and sheetflow enhancement; and seepage management (Figure 2). The following specific features were part of the Yellow Book Plan:

- Everglades Agricultural Storage Reservoirs (G)
- Flow to Northwest and Central Water Conservation Area 3A (II and RR)
- Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement (AA, QQ and SS)
- Dade-Broward Levee/Pennsuco Wetlands (BB)
- L-31N Improvements for Seepage Management and S-356 Structures (V and FF)
- Everglades Rain-Driven Operations (H)

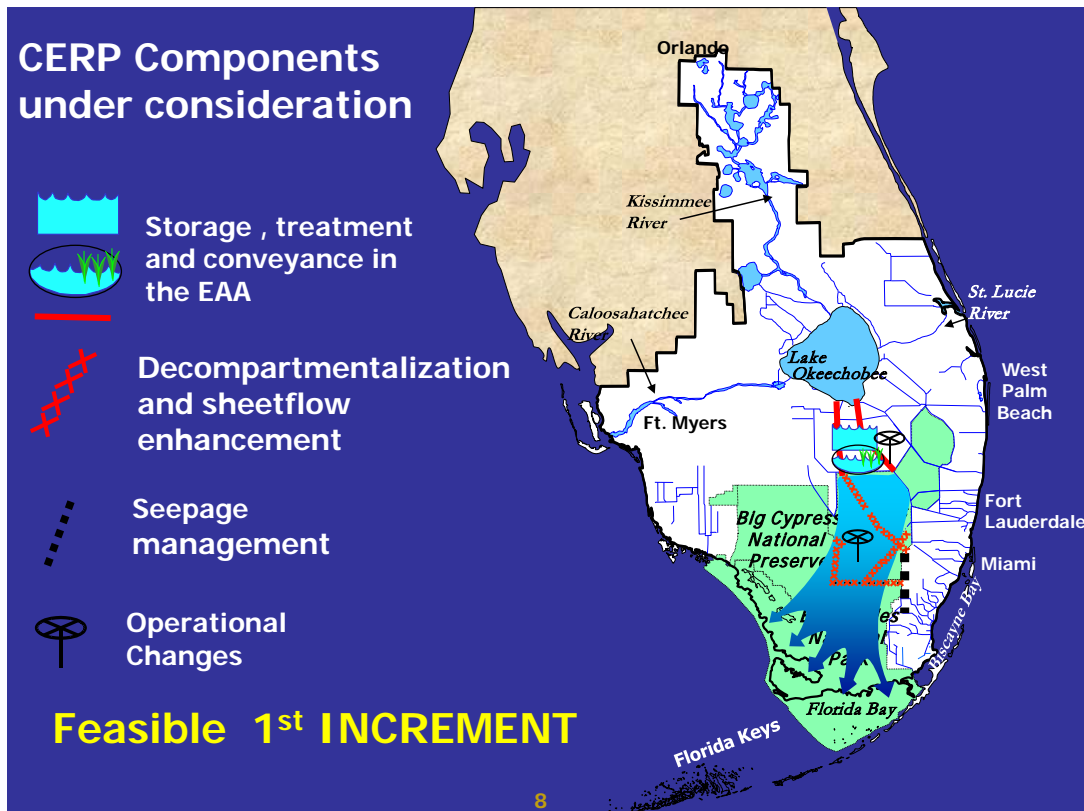


Figure 2, CERP Components under consideration

The following Table 1 summarizes the initial formulation strategy and possible Management Measures that may be formulated for the proposed project. While the specific management

measures and their locations and dimensions have not been established, most will be large. The cost of the project is anticipated to be between \$300 million and \$3 billion.

Table 1 Formulation Strategy

Subject	Effect	Means	Location	Measures
Natural mosaic of wetland and upland habitat	Restore seasonal hydroperiods and freshwater distribution	Improve quantity and distribution of water for natural system	WCA 3 and ENP	Above-ground or in-ground reservoirs, wet or dry flow ways, deep or shallow impoundment.
Soil subsidence, frequency of damaging fires, decline of tree islands	Improve sheetflow patterns and surface water depths	Restore connectivity of system	WCA 3 and ENP	Canal backfilling or plugging, levee removal, bridging.
Prey-based fish concentrations for wading bird nesting and foraging success	Minimize or eliminate unnatural seasonal drawdowns	Reduce water loss out of system	WCA3B and ENP	Seepage Barrier, Hydraulic Ridge (Detention Areas).
Plant and animal diversity and habitat function	Restore natural water level responses	Operational responses to rainfall	WCA 3 and ENP	Operational changes to C&SF System.
Oyster habitat and seagrass populations	Reduce salinity fluctuations and nutrient loading	Reduce freshwater pulses	Northern Estuaries	Reservoirs to store excess water, operational changes to C&SF System.

The study sponsor is the South Florida Water Management District. An interagency project delivery team (PDT) has been formed and is comprised of those individuals directly involved in the development of the decision document. Disciplines are listed below:

Table 2 CEPP PDT member disciplines

Discipline	ORGANIZATION								
	USACE	SFWMD	ENP	FDEP	FWS	USGS	Miccosukee Tribe	FDACS	FWCC
Supervisor	x	x							
Project Manager	x	x							
Plan Formulation	x	x							
NEPA	x								
Biologist/Ecologist	x	x	x		x			x	x

Discipline	ORGANIZATION								
	USACE	SFWMD	ENP	FDEP	FWS	USGS	Miccosukee Tribe	FDACS	FWCC
Archaeologist	x								
Economist	x								
Civil Engineer	x								
Cost Engineer	x								
Hydraulic Engineer	x	x							
Geotechnical Engineer	x								
Real Estate Specialist	x								
Water Quality Specialist	x			x					
Office of Counsel	x								
Tribal Liason	x								
Public Involvement	x								

USACE: U. S. Army Corps of Engineers, **SFWMD:** South Florida Water Management District, **ENP:** Everglades National Park, **FDEP:** 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.

A USACE Vertical Team has been established that will review District products and guide the team through development of the PIR. The Vertical Team includes District management, District Support Team (DST) and staff from the Corps South Atlantic Division and Headquarters offices.

c. Pilot Study Process

The CEPP has been approved to participate in the USACE Pilot Study Process. The pilot initiative will provide an opportunity to test principles that have been outlined in the *USACE Recommendations for Transforming the Current Pre-Authorization Study Process* (January 2011) and associated presentation materials. This new process does not follow the typical USACE planning process and will require greater, more interactive and concurrent involvement from the Vertical Team (South Atlantic Division, Headquarters, and Assistant Secretary of the Army's office) at multiple points throughout the study to provide input and decision making. The pilot study will be divided into four phases, each with a key Decision Point and associated In-Progress Reviews. The table below provides general timelines for the four pilot study phases, associated decision points, and duration of each phase based on the January 2011 recommendations. These durations assume that adequate funding is available and reviews are completed expeditiously.

Table 3: Pilot Study Phases

Pilot Study Phase	Decision Point	Duration
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Project Scoping	Decision Point 1 – Federal Interest Determination	3 Months (Month 1-3)
Execution	Decision Point 2 – Alternative Array and Plan Selection	12 Months (Month 4-15)
Review	Decision Point 3 – Confirmation Brief	3 Months (Month 16-18)
Confirmation	Decision Point 4 – Chief’s Report	3 Months (Month 19-21)

d. Factors Affecting the Scope and Level of Review. This section discusses the factors affecting 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 and support the PDT, PCX, and vertical team decisions on the appropriate level of review and types of expertise represented on the various review teams.

- Where the estimated total cost of the project, including mitigation costs, is greater than \$45 million based on a reasonable estimate at the end of the reconnaissance phase.
 - Based upon previous Everglades restoration projects and the complexity of issues in the study area the costs of the recommended actions in CEPP are likely to significantly exceed \$45 million.
- If parts of the study will likely be challenging:
 - Quantification of ecosystem benefits produced by a diverse, interconnected array of management measures, in such a large geographical area is inevitably challenging.
- A preliminary assessment of where the project risks are likely to occur and what the magnitude of those risks might be (e.g., what are the uncertainties and how might they affect the success of the project):
 - As part of the Pilot Study Process, an assessment of Risk and Uncertainty will be developed and will be assembled into a Risk Register document. The Risk Register will include risk assessments of all pertinent issues regarding Plan Formulation and Policy, Environmental, Socioeconomics, Real Estate and Engineering. The Risk Register is being developed in coordination with the Vertical Team and will be available for review by the ECO-PCX and any other reviewers for the duration of the study. The Risk Register will be used to guide the Planning Team through the development of the PIR, and will determine the level of detail for analysis of any policy or technical issues.
- If the project will likely be justified by life safety or if the project likely involves significant threat to human life/safety assurance:
 - The proposed project will involve modifications to the Central and Southern Florida (C&SF) Project for Flood Control and Other Purposes. The C&SF Project established a

perimeter levee through the eastern portion of the Everglades, blocking sheetflow so that lands farther east would be protected from direct Everglades flooding. In accordance with the Programmatic Regulations developed for the CERP, the proposed project cannot reduce the levels of flood risk below those existing in December 2000. Non-performance of the C&SF Project or modifications to the C&SF Project system could result in increased risk to human life by potentially reducing the levels of flood protection the system provides to the LEC Area. Flood risk will function as a constraint for the study and will be considered in alternative formulation and evaluation. Additionally, an analysis will be conducted for the project to ensure that flood risk management will not be diminished.

- The analysis of alternatives will utilize hydrologic models that simulate the climatological period of record from 1965-2005, which encompass a complete range of climatological conditions including some very active hurricane years. The project team is expecting to apply the same models for analysis of the levels of service for flood protection as used for plan formulation analysis of alternatives (RSM-GL See Table 7) to quantify the potential extent of hydrologic effects and for determination of lands required for project (takings analysis). This period of record approach is consistent with the CERP draft Programmatic Regulations' Guidance Memorandum 3 (Savings Clause Requirements). The CEPP assessment of the levels of service for flood protection will include analysis of primary/ secondary canal stages and analysis of a representative sample of Lower East Coast (LEC) reference locations east of the East Coast Protection (ECP) levee for the final array of alternatives (including the Tentatively Selected Plan (TSP)) in order to demonstrate potential impacts to the levels of service for flood protection within the period of record. During screening of CEPP management measures, a more limited assessment of adjacent canal stages and seepage losses across the ECP levee is planned, conditionally dependent on successful testing/demonstration that this approach provides a suitable surrogate to the CEPP levels of service for flood protection assessment methodology based on review of early RSM-GL modeling results. If needed, water levels will be monitored during CEPP implementation in select areas of potential impact.
- If there is a request by the Governor of an affected state for a peer review by independent experts:
 - No such request has been made nor is such a request anticipated.
- If there is request to conduct IEPR from a head of a Federal or state agency charged with reviewing the project:
 - No such request has been made nor is such a request anticipated.
- If the project/study is likely to involve significant public dispute as to the size, nature, or effects of the project:
 - There is potential for controversy or strongly differing positions regarding the size, nature, or effects of the project. The proposed project includes the major central measures to implement ecosystem restoration within the vital part of the Everglades system.

- If the project/study is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project:
 - An economic analysis and analysis of environmental effects will be conducted as part of the PIR development to ensure that a cost effective alternative is selected. The PIR will describe the alternatives that were analyzed and criteria used to evaluate, compare and select a Recommended Plan.
- If the information in the decision document or anticipated project design is likely to be based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices:
 - Planning models employed to predict ecosystem benefits may be considered novel, or at least unique in application to CERP components. Alternative designs are expected to be neither novel nor precedent setting. The report addresses alternatives that will likely include above-ground storage areas, seepage management barriers, canal improvements, etc. - measures that are commonplace for the USACE and do not change the scope or function of the authorized project.
- If the project design is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule:
 - Project features will likely include those basic measures to achieve the project objectives of ecosystem restoration. Most proposed measures, such as canal backfill, canal plugs, and spreader channels, are not likely to include secondary or back-up systems. Pump stations and most other mechanical equipment may contain secondary or backup systems. These systems would ensure that maintenance could be performed on the equipment without temporarily reducing ecosystem restoration benefits. Unique construction sequencing is not expected; however, implementation of seepage management components may be necessary before operation of any project features that increase water flows in certain areas.

e. 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)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the Jacksonville District and the home MSC.

- a. **Documentation of DQC.** District Quality Control of draft and final report quality will be accomplished by DQC team reviews in Dr. Checks.
- b. **Products to Undergo DQC.** At a minimum, the Draft and Final Project Implementation Reports and EIS, with technical appendices, will be submitted to DQC prior to the formal ATR. DQC of interim products, in a “continuous” process, will be documented at least by memorandum. Continuous DQC will generally be of limited scope and managed by the office generating the work product.
- c. **Required DQC Expertise.** Experienced Jacksonville District team members, representing all pertinent disciplines, will participate in DQC, including: plan formulation, economics, environmental compliance, engineering design, coastal hydraulics and hydrology, geotechnical engineering, cost engineering and real estate.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

- a. **Products to Undergo ATR.** ATR will be, performed, at a minimum, on all products subjected to formal review outside of the Jacksonville District, in this case, including the Draft PIR and Final PIR. Leading up to review of the Draft PIR, where practicable, technical products that support subsequent analyses will be reviewed prior to being used in the study and may include: Study Area Description, Purpose and Scope, Study Authority, Federal Interest and USACE Interest, Future Without Project condition, Problems and Opportunities, Plan Formulation including Modeling Strategy and Formulation Strategy, geotechnical investigations, economic, environmental, cultural, and social inventories, cost estimates, etc. Model-building pieces of software, including spreadsheet models (RESOPS and LOOPS for CEPP), are not validated through the standard engineering software validation process. As documented in ES-0801, the project ATR and IEPR should include a much more thorough review of the inner workings of the model, as the basic assumptions, equations and output used or created for the model have not been pre-validated.
- b. **Required ATR Team Expertise.** The ATR team will be finalized by the ECO-PCX and is comprised of individuals from all the technical disciplines that were significant in the preparation of the report. Proposed ATR team members are listed in Attachment 1. Technical disciplines determined to be appropriate for this review include: Plan Formulation, Economics, Ecosystem Restoration Analysis, Environmental Regulatory Compliance (e.g., NEPA documentation preparation), Hydrology and Hydraulics (H&H), H&H Modeling, Geotechnical Engineering, Civil Engineering Design, Cost Estimating, Water Control, and Real Estate. The following table provides a description of suggested expertise.

Table 4.

ATR Team Members/ Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with a minimum 5 years demonstrated 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 a minimum of 5 years demonstrated experience in large scale component based ecosystem restoration.
Economics	The economics reviewer should be a senior economist preferably with a minimum of 10 years demonstrated experience evaluating ecosystem restoration project benefits and costs and identifying incidental benefits (preferably flood risk management and water supply).
Ecosystem Resources/ NEPA Compliance	Environmental Resources reviewer should be a senior biologist/ecologist/environmental engineer, preferably with a minimum of 10 years demonstrated experience in ecosystem restoration and familiarity with freshwater, coastal and estuarine systems. Must be able to review for NEPA compliance (including cultural resources coordination) and quality and applicability of ecosystem benefits evaluations.
Hydrology, Hydraulic Engineering and Modeling	The reviewer should be a senior hydraulic engineer with a minimum of 10 years demonstrated 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 RESOPS, LOOPS, RSMBN, SFWMM, RSM Glades-LECSA, DMSTA 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. A minimum of 10 years demonstrated experience is preferred.
Civil Engineering	Experience in engineering/construction management for water storage and conveyance and sediment control. A minimum of 10 years demonstrated experience is preferred.
Cost Engineering	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 Outside Eligible Organization (OEO) will be tasked to ensure that the panel member or members will be able to accomplish the charge.
Real Estate	Senior real estate specialist experienced in contributing to large civil works projects. A minimum of 5 years demonstrated experience is preferred.

c. Documentation of ATR. Dr. Checks 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 been 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 where there appears to be incomplete or unclear information, commenters may seek clarification in order to then assess whether 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 draft report and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

Any work product that undergoes DQC and ATR may be required to undergo IEPR 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 USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, 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. There are two types of IEPR:

- **Type I IEPR.** Type I IEPR is required for all decision documents except where no mandatory triggers apply, criteria for an exclusion are met, and a risk-informed recommendation justifies exclusion. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.
 - **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. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.
- a. Decision on IEPR.** Based upon a review of the risk factor discussion listed previously, IEPR is required for this decision document. Significant factors in this decision included the large project size, area of influence of the project, the potential for controversy or strongly differing positions, the development of an EIS, and the likelihood that mandatory IEPR triggers specified in EC 1105-2-209 will be exceeded. Additionally, due to the modifications to the C&SF Project system and

consideration of a storage reservoir within the EAA, there is a potential that the proposed project could result in risk to human life or health. The C&SF Project system functions as a Flood Risk Management network for south Florida. The project team will identify all urban and agricultural areas within the study area where levels of service for flood risk reduction could be affected by the project. Analyses to assess flood risk management are described above. Non-performance of the C&SF Project or modifications to the C&SF Project system could result in increased risk to human life by potentially reducing the levels of flood protection that the system provides to the LEC Area.

- b. For that reason, it is currently anticipated that safety assurance will be addressed in the Type I IEPR. It is further anticipated that a Type II IEPR will be required during the Preconstruction Engineering and Design (PED) phase of the project, which would occur after the decision document is completed and the project is authorized by Congress. However, final decision on whether or not Type II IEPR will be required is pending the District Chief of Engineering assessment of risks during the design phase activities. That decision will be reflected in a subsequent Review Plan covering any design phase activities.

A detailed scope of the Type I IEPR will be determined in advance of the review. Significant or relevant public or agency comments received prior to or during IEPR will be provided to the panel of reviewers.

- c. **Products to Undergo Type I IEPR. The Draft PIR, with EIS and technical appendices that is released for public review will be subjected to IEPR. Scope of Type I IEPR should include:**

- General review of the draft report for completeness and clarity of discussion.
- Completeness and appropriateness of ecosystem restoration analyses.
- Completeness and appropriateness of economic analyses.
- Completeness and appropriateness of engineering analyses.
- Safety Assurance (review of final risk assessment)

- d. **Required Type I IEPR Panel Expertise.** Each panel member should be a professional from academia, a public agency, consulting firm, or similar vocation demonstrated experience in his/her area of expertise. Panel members should be familiar with large, complex civil works projects with high public and interagency interests. Descriptions of required expertise are provided in the following table.

Table 5

IEPR Panel Members/Disciplines	Expertise Required
Planning	The Planner 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 projects with high public and interagency interests and may have nearby project impacted sensitive habitats.
Economics	The Economic Panel Member should be a professional from academia, a public agency or an Architect-Engineer or Consulting Firm with a minimum of 10 years demonstrated experience in evaluating ecosystem restoration project benefits and costs and identifying incidental benefits (preferably flood risk management and water supply).
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 projects with high public and interagency interests and may have nearby project impacted sensitive habitats.
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 risk management 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.

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 4.d 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. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews determine whether the recommendations in the reports, 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 addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

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

All decision documents shall 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 in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. 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 (if required). Additional guidance pertaining to the process applied by the Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP) to use and validate engineering software for use in planning studies and to satisfy the requirements of the SET initiative are documented in ES-0801.

- a. **Planning Models.** A new Planning Model will likely be created by the Planning Team for utilization in the CEPP. The Planning Model will likely incorporate existing CERP performance measures into Habitat Evaluation Procedures, a decision matrix, or other similar quantification tools to measure and assess project benefits. Due to the expedient nature of the Pilot Study process, the Planning Team has proposed to conduct intermittent reviews with multiple deliverables with the Review Team. Rather than conducting a massive, detailed review of multiple products subsequent to completion of a benefits analysis, intermittent reviews will allow the Review Team to participate in project development and suggestions can be incorporated into the evaluation process.

The 3-Step model approval process is discussed below and consists of a description and approval of the Project Performance Measures, description and approval of the methods used for aggregation of the project performance measures and finally the description and approval of the application of the CEPP planning model.

Step 1: Description of Project Performance Measures

The CEPP team has concluded that the review processes employed to validate system-wide performance measures developed by the RECOVER team meets the intent of the approval for use process required by EC 1105-2-412 and are even more robust than the typical review process. The CEPP team requested that the ECO-PCX use the RECOVER process description as the basis for recommending approval for use. Documentation of the RECOVER review process for each of the performance measures used in the CEPP planning effort and associated comment/response table was the first deliverable in the Model Approval Documentation.

RECOVER has developed a set of system-wide hydrologic and ecologic performance measures for CERP that are used in the evaluation of alternative plans and assessment of CERP performance from a system-wide perspective. RECOVER has established a process by which all performance measures are reviewed and accepted for use in CERP. Performance measure documentation sheets receive several levels of review to include a RECOVER-wide review distributed by e-mail to all RECOVER partners and a public review posted on the CERP website. Comments are documented and addressed in a comment response table and performance measure documentation sheets are revised appropriately. All RECOVER accepted performance measures are posted on the CERP website.

Each of the project performance measures for the CEPP planning effort are derived from those performance measures approved for use by RECOVER. The members of RECOVER have extensive experience working in south Florida and Everglades wetlands ecosystems. These members are considered by their peers to be the experts in their fields.

Documentation of the RECOVER review process for each of the performance measures used in the CEPP planning effort and associated comment/response table were submitted to the ECO-PCX as Deliverable 1 in the Model Approval Documentation. The ECO-PCX endorsed the use of the eight RECOVER PMs for CEPP and sent a Memorandum recommending HQ approval of the eight Performance Measures for single use on the Central Everglades Planning Project on April 6, 2012.

Step 2: Description of Methods Used for Aggregation of Project Performance Measures

Documentation describing how project performance measures are to be spatially aggregated was submitted as the second deliverable in the Model Approval Documentation. Documentation included example output for review of spreadsheet mathematics/calculations to ensure accuracy and replication. A review team was assembled by the ECO-PCX., employing subject matter experts within the Corps (ERDC, IWR...) to the maximum extent possible. Step 2 is being conducted prior to Decision Point 2 and is expected to result in endorsement of the CEPP Planning Model by the ECO-PCX to HQ in August 2012.

Step 3: Description of the Application of the CEPP Planning Model

The CEPP team proposes that the review of the application of the model be conducted during an Agency Technical Review (ATR) with participation of appropriate staff designated by the ECO-PCX. Step 3 is anticipated to be conducted prior to Decision Point 2.

In addition, the CEPP team proposes that the review of the application of additional planning models used for purposes of preliminary screening of project alternatives be conducted during an ATR with participation of appropriate staff designated by the ECO-PCX. Additional planning models will include the use of similar project performance measures anticipated to be used in Step 2 described above as well as best professional judgment. Additional planning models may also include species models (Woodstork Foraging Probability Model, Cape Sable Seaside Sparrow Model, Apple Snail Population Model, Small-Sized Freshwater Fish Density Model and Amphibian Model) as well as vegetation community models (Everglades Landscape Vegetation Succession Model (ElVES)). Species and vegetation community models will be used to determine the environmental effects of the recommended plan.

- b. Engineering Models.** The engineering models and other tools described in Table 7 are anticipated to be used in the development of the decision document. Models listed in the table below as “Not approved” will undergo review and approval through processes in use by the HH&C CoP It is expected that models will be validated by August 2012.

Table 6.

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS	The Hydrologic Engineering Center’s River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The most recent release of HEC-RAS (version 4.2) includes capabilities that allow the model to apply complex operation of gated structures and pump stations. Such operations can change in time or water level conditions anywhere in the system. A new feature in HEC-RAS will allow the 1-dimensional channel flow to interact with 2-dimensional floodplain flow allowing for more accurate floodplain mapping. In areas where the interaction of open channel flow and aquifer groundwater needs to be explicitly modeled, a new integrated tool based on the original HEC-RAS and MODFLOW models can now be used to accurately simulate the aquifer/canal flow exchange.	HH&C CoP Approved: Preferred Model

RESOPS	REservoir Sizing and Operations Screening (RESOPS) is a coarse-scale water management simulation spreadsheet model that was developed to quickly test alternative reservoir sizes and system operating rules for the region surrounding and including Lake Okeechobee. RESOPS performs monthly time-step, 41-year (1965-2005) continuous simulations of the hydrology and operations of south Florida’s regional water management system and the interaction with proposed reservoir and wetland treatment area features and generates a wide variety of graphical and statistical summary measures of performance that can be used to compare up to four test scenarios.	Not currently approved: Review will be conducted under CEPP ATR
RSMBN	The Regional Simulation Model - Basins (RSMBN) is a link-node based model designed to simulate the transfer of water from a pre-defined set of watersheds, lakes, reservoirs or any “waterbody” that either receives or transmits water to another adjacent waterbody. The RSMBN uses the same source code as the mesh-based RSM, which includes the RSMGL regional model. The model assumes that water in each waterbody is held in level pools. The model domain covers Lake Okeechobee and four major watersheds: Kissimmee, Lake Okeechobee, St. Lucie River, Caloosahatchee River and the Everglades Agricultural Area.	Not currently approved: Review will be conducted by HH&C CoP
RSMGL	The RSMGL model provides a tool to simulate the natural hydrology and the water management operations of several important basins in South Florida. The Glades-LECSA (Lower East Coast Service Area) implementation uses the Regional Simulation Model (RSM) developed by the Hydrologic and Environmental Systems Modeling Section of the South Florida Water Management District. The RSM is an implicit, finite-volume, continuous, distributed, and integrated surface-water and ground-water model. It can simulate one-dimensional canal/stream flow and two-dimensional overland and groundwater flow in arbitrarily shaped areas using a variable triangular mesh. The overland and groundwater flow components are fully coupled in the RSM for a more realistic representation of runoff generation. It has physically-based formulations for the simulation of overland and groundwater flow, evapotranspiration, infiltration, levee seepage, and canal and structure flows.	Not currently approved: Review will be conducted by HH&C CoP
SFWMM	The South Florida Water Management Model (SFWMM) will be used as a source of boundary conditions to the other planning or detailed models and also as the representation of the full CERP condition in the “updating conceptual framework” portion of the project. The SFWMM is a physically-based simulation model that combines the hydrology and management aspects of a greater portion of the	HH&C CoP Validated: Allowed for Use

	South Florida Water Management District (SFWMD). The SFWMM includes a spatial extent covering most of south Florida, and it encompasses an area of substantial heterogeneity in both natural and managed hydrology. It covers an area of 7600 square miles using a mesh of 2 mile x 2 mile cells.	
DMSTA	The Dynamic Model for Stormwater Treatment Areas (DMSTA) was developed for the U.S. Department of the Interior and the U.S. Army Corps of Engineers (Walker and Kadlec 2005, http://www.wwwalker.net/DMSTA/index.htm). DMSTA was developed and calibrated to information specific to south Florida, and to predict phosphorus removal performance of Stormwater Treatment Areas (STAs) and storage reservoirs. DMSTA parameters were calibrated based on data from fully functional treatment cells with viable vegetation communities. The model generates error/warning notices if simulated conditions exceeded the range of the calibration characteristics. DMSTA does not allow dry outs, and does not reproduce the vegetative responses and phosphorus dynamics (e.g., post-dry-out spikes) observed in treatment cells that periodically go dry. Phosphorus removal performance simulated for large wetland systems with limited water availability may be overly optimistic.	Not currently approved: Review will be conducted by HH&C CoP
LOOPS	The Lake Okeechobee Operations Screening (LOOPS) is a hydrologic simulation tool that provides rapid screening-level testing of alternative operating rules and strategies for Lake Okeechobee, including Regulation Schedules, Water Shortage Plans, and protocols for defining release amounts when the Regulation Schedule guidance only provides ranges of flows. Inputs include daily time-series values for the Lake net inflow, basin runoff from the Caloosahatchee and St. Lucie basins, lake evaporation rates, and the hydrologic state and forecast information that drive Lake regulation schedules. The strength of the LOOPS Model is with its ability to quickly test the performance of alternative operating scenarios to screen ideas and perform sensitivity tests for the primary lake-management objectives.	Not currently approved: Review will be conducted under CEPP ATR
C-43 Spreadsheet	The C-43 Spreadsheet Model "C43_PIR-model_Final.xls" was developed for the CERP Project "C-43 Reservoir Phase I" (Starnes & Marlowe, 2007) to compare with-project discharge over S-79 (the downstream point at which the basin discharges into the estuary) to both the pre-project discharge over S-79 and to a time series representing restoration target flows over S-79 for a 41-year, daily period of simulation. The model also shows a water budget for the reservoir and tracks reservoir inflows, releases and storage. Because the LOOPS model does	Not currently approved: Review will be conducted under CEPP ATR

	not simulate storage in the C-43 basin, it was necessary to use the C-43 Spreadsheet Model for an accurate depiction of changes in the effects of Lake Okeechobee releases to the west.	
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10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** ATR will be performed on the PIR deliverables after completion of substantial project milestones or products. An orientation briefing plus five reviews are currently planned, with a total cost of approximately \$150,000. The reviews are summarized in the table below and further described in the following paragraphs.

ATR Review Activity	Date
ATR Orientation	February 2012 (completed Feb 15, 2012)
ATR 1 Planning Framework	March 2012 (completed April 9, 2012)
ATR 2 Management Measure Formulation and Screening	August 2012
ATR 3 Final Array Evaluation	October 2012
ATR 4 Draft Report	December 2012
ATR 5 Final Report	April 2013

ATR Team Orientation Briefing

ATR efforts began with an orientation to CERP and CEPP briefing provided by the PDT on February 15, 2012. Following this overview briefing ATR will proceed according to the following sequence of activities. The scope is described for each activity.

i. ATR 1: Planning Framework

Review of the Planning Framework should occur prior to IPR 3, during which the Planning Framework will be presented to the vertical team. Products to be reviewed include: planning framework, management measure screening strategy, modeling /design strategy and ecological evaluation techniques.

- Planning Framework: will address component interdependency, sequential north to south flow approach, and optimization strategy. Planning framework would also include problems and opportunities, objectives.
- Management Measure Screening Strategy: will address siting analysis/land availability and constructability.
- Modeling/Design Strategy: includes batch processing and parametric costs.
- Ecological Evaluation Screening Techniques: includes Everview and thermometer graphics.

Technical disciplines that need to be represented for ATR 1 include: plan formulation, economics, ecological modeling, spreadsheet management, civil design, and hydraulics and hydrology.

ii. ATR2: Management Measure Formulation and Screening

Review of the management measure formulation and screening should occur prior to IPR 4, during which it will be presented to the vertical team. IEPR 4 is currently scheduled for August 30, 2012. So, ATR 2 should start the first week of August.

Products to be reviewed include identification of the final array including ecological evaluation screening results of the management measures, parametric cost results, optimization results and engineering models directed for ATR review.

The evaluation methodology proposed to be used for the final array would include detailed habitat unit approach, modeling approach and planning model documentation. The evaluation methodology (HU Quantification) to be employed on the final array of alternatives (Section 9 Step 2) will be reviewed independently by a Model Approval Review Team as described in Section 9 (Model Certification and Approval) of this Review Plan.

Technical disciplines that need to be represented for ATR 2 would be the same as for ATR 1.

iii. ATR 3: Final Array Evaluation

Review of the final array evaluation results should occur prior to IPR 5, during which it will be presented to the vertical team. IEPR 5 is currently scheduled for October 30, 2012. So, ATR 3 should start in September 2012.

Products to be reviewed include: the application of habitat units for the final array, costs of final array (construction, real estate and O&M), value engineering analysis, engineering models directed for ATR review and cost effectiveness and incremental cost analysis. Technical disciplines that need to be represented for ATR 3 would include all from the previous ATRs plus the following:

- NEPA compliance
- Geotechnical Engineering
- Cost Engineering
- Real Estate

iv. ATR 4 Draft Report

Review of the draft report should occur *prior* to DP2, during which it will be presented to the vertical team. DP2 is currently scheduled for January 31, 2013. So, ATR 4 should start in early December, 2012.

Technical disciplines that need to be represented for ATR 4 would include all from the previous ATRs.

v. ATR 5 Final Report

Review of the final report should occur prior to DP3, during which it will be presented to the vertical team. DP3 is currently scheduled for May 16, 2013. So, ATR 5 should start in early April, 2013.

Technical disciplines that need to be represented for ATR 4 would include all from the previous ATRs.

b. Type I IEPR Schedule and Cost.

IEPR start (start of panel review) is currently scheduled for February 1, 2013. It is estimated to cost approximately \$200K.

c. Planning Model Certification/Approval Schedule and Cost.

Model Approval for use process is scheduled to start January 2012. Following is a draft schedule for the model review. Revisions to the model to address model deficiencies will require adjustments to the schedule below.

Step 1: Description of Project Performance Measures

Meeting to Discuss Initial Findings of Project Performance Measures	January 2012
ECO-PCX Recommendation Package to HQ for Project Performance Measures	February 2012

Step 2: Description of Methods Used for Aggregation of Project Performance Measures

Initial Kick-off Meeting	March 2012
Begin Model Review	March 2012
Interim Review Teleconference and Draft Model Review Report	April 2012
Draft Model Review Report	May 2012
Complete Model Review	June 2012
Final Model Review Report	July 2012
ECO-PCX Summary	July 2012
ECO-PCX Recommendation Package to HQ	August 2012

Step 3: Review of the Application of the CEPP Planning Model

This will be accomplished as part of the ATR-3 (review of final array evaluation), October 2012.

Completion of model certification is estimated to cost approximately \$45K.

11. PUBLIC PARTICIPATION

Five components have been developed for the CEPP public participation protocol. These components build upon the guidance from the South Florida Ecosystem Restoration Task Force and will guide development of the CEPP integrated meeting calendar.

Component 1: Maximizing Existing Public and Stakeholder Participation Capacity

This component reflects the existing network of meetings currently conducted by the Task Force, Working Group, Science Coordination Group, and Water Resources Advisory Commission (WRAC). These regular public meetings provide opportunities for the stakeholders, interest groups, and public to engage in a host of restoration activities. Over the next 18 months, these meetings will include sessions devoted to the CEPP. Tools such as web-casting, video and audio recording, web-based records, and social media will be used to enhance access to these meetings and to broaden the availability of information produced by these meetings.

Component 2: Public and Stakeholder Group Workshops

Pursuant to Section 528 (f)(3)(B) of the Water Resources Development Act of 1996, the Working Group is authorized to "...seek advice and input from any interested, knowledgeable, or affected party as the...working group ..., determines necessary" to perform its duties. To accomplish this, the Working Group will sponsor a series of workshops specifically designed to enhance stakeholder input to the

CEPP. These meetings will provide local governments, interested stakeholders, Tribes, and the public with opportunities to engage in two-way dialogue at a more technical and detailed level at key phases of the planning process such as the scope of the study, development of goals and targets, development and evaluation of alternatives, and plan selection.

Component 3: Enhanced Local Government Engagement by the Working Group

During its deliberations on October 27, 2011, the Task Force noted that representatives from local governments may benefit from participating in the enhanced public process beyond representation on the Task Force itself. For the purposes of this protocol, the Task Force staff will ensure that known interested parties who represent local governments are notified and invited to participate in the CEPP planning process. In addition, the Task Force staff will actively seek to expand local government participation and may make recommendations to the Chair of the Working Group regarding opportunities to enhance engagement with local governments throughout the planning process.

Component 4: Minimizing Administrative Costs

Throughout the accelerated planning process, the Task Force will seek to maximize partnerships with its member agencies to minimize the administration and logistical costs associated with an enhanced public process. These efforts will include partnering on staffing, facilitation, and meeting facilities. To reduce administrative costs, the SFWMD has offered to host the public and stakeholder group workshops at its Headquarters facility. Together with targeted regional workshops, this will serve to minimize overhead expenses while maximizing transparency, information sharing, and public involvement.

Component 5: Feedback Loops

As described above, the 18 month scoping, execution, and review phases of the CEPP planning process will include multiple forums and expanded opportunities to participate. Key agency and public workshops will be sequenced to coincide with the major tasks in the CEPP plan and at each of the major decision points. The Working Group/Science Coordination Group meetings, WRAC meetings, and public and stakeholder group workshops will be scheduled and designed to provide a tight feedback loop to the Task Force, so that the Task Force may provide informed recommendations and input to the Corps and SFWMD planning team.

12. REVIEW PLAN APPROVAL AND UPDATES

The South Atlantic Division (SAD) Commander is responsible for approving this Review Plan, including by delegation within the MSC. The MSC 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 will be documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) must 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 MSC Commander's 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

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

- Jacksonville District Project Manager, 904-232-2583
- Everglades Program Manager, South Atlantic Division, 404-562-5206
- ECO-PCX SAJ Account Manager Point of Contact, 309-794-5007

ATTACHMENT 1: TEAM ROSTERS

Note: Bold Names Indicate Full Time USACE Staff

Discipline	Agency	Point of contact	Telephone Number	Email Address
Supervisor	USACE			
	SFWMD			
Project Manager	USACE			
	SFWMD			
Plan Formulation	USACE			
	USACE			
	SFWMD			
NEPA	USACE			
	USACE			
Biologist/Ecologist	USACE			
	USACE			
	SFWMD			
	SFWMD			
	ENP			
	ENP			
	ENP			
	USFWS			
	USFWS			
	FDACS			
	FWCC			
Archeologist	USACE			
Economist	USACE			
Civil Engineer	USACE			
Cost Engineer	USACE			
Hydraulic Engineer	USACE			
	SFMWD			
Geotechnical Engineer	USACE			
	USACE			
Real Estate Specialist	USACE			
	USACE			
Water Quality Specialist	USACE			
	DEP			
	DEP			
Office of Counsel	USACE			
Tribal Liason	USACE			
Public Involvement	USACE			

Note: **Bolded** Names indicates full time USACE CEPP staff

Vertical Team

Table 7. ATR Team

Discipline/Expertise	Name	District/Division
ECO-PCX Operational Manager		MVD
ECO-PCX Account Manager		Rock Island/MVD
District ATR Coordinator		Jacksonville/SAD
Agency Technical Review Team		
ATR Lead		St. Louis/MVS
Eco Rest Plan Formulation		Sacramento/SPD
Environmental/NEPA Compliance		Sacramento/SPD
Restoration Biologist		San Francisco/SPD
Real Estate		Savannah/SAD
Civil Design		Sacramento/SPD
Geotechnical		TBD
Hydrology and Hydraulics		San Francisco/SPD
Cost Engineering		Walla Walla/NWD

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 1165-2-209. 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 DrCheckssm.

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

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager¹
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
ECO-PCX Operations Director
CEMVD-PD-N

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

Name

Chief, Planning Division

Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Table 8. Review Plan Revisions

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
C&SF	Central and Southern Florida project	O&M	Operation and Maintenance
CEPP	Central Everglades Planning Project	OMB	Office of Management and Budget
CERP	Comprehensive Everglades Restoration Plan	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DMSTA	Dynamic Model for Stormwater Treatment Areas	OEO	Outside Eligible Organization
DST	District Support Team	PCX	Planning Center of Expertise
DQC	District Quality Control/Quality Assurance	PDT	Project Delivery Team
DX	Directory of Expertise	PED	Preconstruction Engineering and Design
EAA	Everglades Agricultural Area	PMP	Project Management Plan
EC	Engineer Circular	PL	Public Law
EIS	Environmental Impact Statement	QMP	Quality Management Plan
ENP	Everglades National Park	QA	Quality Assurance
EO	Executive Order	QC	Quality Control
ER	Engineering Regulation	RECOVER	Restoration Coordination and Verification
ERDC	Engineer Research and Development Center	RESOPS	REservoir Sizing and Operations Screening
FDACS	Florida Department of Agriculture and Consumer Services	RMC	Risk Management Center
FDEP	Florida Department of Environmental Protection	RMO	Review Management Organization
FDR	Flood Damage Reduction	RSMBN	Regional Simulation Model Basins
FRM	Flood Risk Management	RSMGL	Regional Simulation Model Glades Lower East Coast
FWCC	Florida Fish and Wildlife Conservation Commission	SAR	Safety Assurance Review
FWS	US Fish and Wildlife Service	SET	Scientific and Engineering Technology
HEC-RAS	Hydrologic Engineering Center's River Analysis System	SFWMD	South Florida Water Management District
HH&C CoP	Hydrology, Hydraulics, and Coastal Community of Practice		
HQUSACE	Headquarters, U.S. Army Corps of Engineers	SFWMM	South Florida Water Management Model
IEPR	Independent External Peer Review	USACE	U.S. Army Corps of Engineers
IWR	Institute for Water Resources	USGS	U.S. Geological Survey
LEC	Lower East Coast	WCA	Water Conservation Area
LOOPS	Lake Okeechobee OPERations Screening	WRAC	Water Resources Advisory Commission
MSC	Major Subordinate Command	WRDA	Water Resources Development Act