

MEMORANDUM FOR CECW-SAD (Sue Hughes)

SUBJECT: Documentation of Review Findings, CERP, Site 1 Impoundment, Final Project Implementation Report and Final Environmental Assessment.

1. Reference CESAJ-PD-PR Memorandum for Commander, South Atlantic Division (CESAD-PD) dated 17 April 2006, subject, Comprehensive Everglades Restoration Plan, Site 1 Impoundment, Final Project Implementation Report and Environmental Assessment- April 2006.
2. The Documentation of Review Findings on the Final PIR and EA for the Site 1 Impoundment is attached. The report has been revised to address the revised design and project cost information and has been circulated for State and Agency Review. The PIR recommendations have also be modified to incorporate stronger language, which recommends that Congress specifically authorize in statutory language additional sponsor credits related to expedited implementation of this project, subject to ASA (CW) approval and other conditions.
3. All concerns from review of the AFB materials, draft report, and final report and EA have been resolved.
4. If you have questions, call the review manager, C. Lee Ware, at (202) 761-0523.

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CF:
CECW-P (1 w/encl)
CECW-PC File Cy:

Ware, CECW-PC 10/25/06
 Steffen, CECC- E 10/25/06
 Jumilla, CECW-PC/SWD 10/30/06
 Furry, CECW-PC/SPD 10/30/06
 Johnson-Turner, CECW-SAD 10/27/06

Warren, CECW-PC 10/31/06 *J*
 Cone, S, CECW-PC 10/31/06 *SC*

DOCUMENTATION OF REVIEW FINDINGS
Central and Southern Florida Project
CERP, Site 1 Impoundment Project
Final Integrated Project Implementation Report
and Environmental Assessment
April 2006 (Revised August 2006)

1. REVIEW OF THE FINAL PIR AND EA.

A. REVIEW HISTORY. Headquarters (HQ) guidance for the resolution of issues identified during review of the Alternative Formulation (AFB) documentation for the Site 1 Impoundment project was issued on 11 February 2005. The draft Project Implementation Report (DPIR) was submitted to HQ for review on 16 February 2005. HQ policy review comments on the DPIR were provided on 25 May 2005. The Feasibility Review Conference (FRC) among the vertical USACE team, sponsor, and resource agencies was held on 16 June 2005 via video teleconference (VTC). At the VTC, HQ requested additional information on two items. One item was an explanation of the cost sharing of project lands and consistency with the requirements of §390 of the Farm Bill (Federal Agriculture Improvement and Reform Act of 1996). The other item was to demonstrate project justification based on the benefits it provides as the next-added increment (NAI) of CERP. A legal opinion on land cost sharing was provided to HQ by e-mail on 24 June 2005. The NAI analysis was provided to HQ on 25 July 2005. HQ was notified of problems with NAI analysis by e-mail on 4 August 2005 and the corrected version of the information was received by e-mail on 5 August 2005. A revised DPIR and EA were submitted for review in December 2005 to address policy review concerns on project-specific Assurances and Savings Clause documentation. Supplemental comments were provided on 22 February 2006. The Final PIR and EA were submitted for review on 17 April 2006. However, just prior to the CWRB the District coordination with the sponsor on the Acceler8 design concluded that the project design and cost needed to be revised to reflect dam design criteria for the containment structure. A revised report was resubmitted on 30 August 2006 for HQ review and approval of the associated changes prior to State and Agency review. No additional concerns were identified based on the review of the new information in the revised final PIR and EA. State and Agency review began on 6 October 2006. The district provided errata pages to the final PIR which reflect additional information on the average annual costs per acre of habitat that had been developed for inclusion in the draft Chief's Report circulated for S&A review.

B. BACKGROUND. The Site 1 Impoundment was conditionally authorized by WRDA 2000 at a total cost of \$38,535,000. This project was one of 12 components that were previously considered under the Water Preserve Areas (WPA) Feasibility Study and were collectively designed to capture Lake Okeechobee releases and storm water runoff from the lower east coast of Florida and store the water to meet water demands and reduce demands on the natural system, thereby maintaining water levels. These flows were historically discharged to tide via the Hillsboro Canal.

The Site 1 Impoundment is located on a triangular 1,800-acre tract of undeveloped land adjacent to the Hillsboro Canal in southern Palm Beach County. It is bordered to the northwest by the Loxahatchee National Wildlife Refuge (LNWR) and to the southwest by a portion of the Everglades- Francis S. Taylor Wildlife Management Area (EWMA), also known as WCA-2A.

The additional storage is needed to reverse declines in the fish and wildlife habitat function and trophic productivity in the LNWR and WCA-2A, and to provide an alternate source of water to meet water supply and water resource protection demands in Lower East Coast (LEC) Service Area 1. The project would also reduce the discharge of excess volumes of fresh water via the Hillsboro Canal, which adversely affect marine life in the estuary at the mouth of the canal between Hillsboro Inlet and Boca Raton Inlet.

The study evaluated various scale alternatives and looked at alternatives for 6 and 8-foot depth impoundments on the 1,800 acre site, which provided 1,660-acres of actual storage area. The 8-foot impoundment was recommended. The recommended plan calls for an impoundment with about 13,500 acre-feet of storage. The embankment height will be about 17 feet above the interior grade and the 24,500 feet long embankment will have its entire pool side perimeter armored with a composite of soil cement plate and stair-step. The plan also includes culverts and pump features, service and auxiliary spillways, a seepage canal and weir, and recreation measures. The total project cost is currently estimated as \$79,100,000.

C. RESOLUTION OF CONCERNS IDENTIFIED DURING REVIEW OF THE FINAL PIR AND EA. Review of the Final PIR and EA dated April 2006 identified several new concerns for which the resolution is discussed below. No additional concerns surfaced based on review of the revised report submitted in August 2006. **All policy review concerns identified during review of the final PIR and EA have been resolved.**

(1) **Section 902 Cost Limit.** [See AFB comment 18 on Maximum Project Cost] The project costs shown in the final PIR had nearly reached the Section 902 cost limit. Prior to the CWRB the district indicated that the project costs shown in the PIR needed to be increased significantly based on coordination with the sponsor with regard to its detailed designs under the Acceler8 program. The design shown in the PIR requires substantial change to provide rip rap protection appropriate for a dam embankment design. The revised costs will exceed the 902 cost limit, requiring authorization of a higher project cost. The report should be revised to reflect the revised design and higher cost, ITR completed, and the revisions submitted for an expedited supplemental policy review prior to State and Agency coordination. The revised final PIR and EA should then be processed to the full Congress for authorization of a higher project cost.

CESAJ Response/Action Taken. Agree. Design refinements have been added as an addendum to Appendix A, MCACES have been updated and shown in the addendum to Appendix A. These modifications have also affected the Executive Summary and Section 7 of the main report. Responses to these comments have been made to the report and revised pages are noted in the PIR/EA. The revised final PIR/EA will be processed to the full Congress for authorization. The new cost including recreation is \$79,100,000.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated

in the revised final PIR and EA.

(2) Sponsor Credits. The report recommendations currently reflect that the sponsor may seek legislation that grants authority for additional credit and indicates support for the credits if legislation is passed. The recommendations section should be revised with stronger wording to recommend that Congress specifically authorize in statutory language additional credits for all reasonable, necessary, auditable, and allocable costs associated with expedited implementation of the project, including those incurred in advance of executing a Project Cooperation Agreement, and subject to the determination by the Secretary of the Army that those restoration activities are necessary and integral to the project and that they are in accordance with U.S. Army Corps of Engineers design and construction standards and applicable Federal and State laws. HQ Counsel will provide specific language for use in the recommendations in follow up to this comment.

CESAJ Response/Action Taken. Agree. Specific language as detailed above has been agreed upon by the USACE and Acceler8 Program and added to the recommendations section of the report as listed below:

“Section 601(e)(5)(B) of the WRDA of 2000 authorizes the Secretary of the Army to provide credit to the non-Federal sponsor for work completed by it during the period of construction pursuant to a project cooperation agreement and a determination by the Secretary that the work is integral to the CERP. As part of its initiative for early implementation of certain CERP projects known as the “Acceler8 Program”, the non-Federal sponsor has stated that it may construct portions of the Site 1 Impoundment Project consistent with this report, in advance of Congressional authorization and the signing of a project cooperation agreement. The non-Federal sponsor is exploring alternative project delivery methods to expedite implementation of the Site 1 Impoundment Project through the Acceler8 Program. Such delivery methods may include public-private partnerships in which the non-Federal sponsor contracts with a private or not-for-profit entity for services that may include designing, building, operating or financing these components. I believe that it would be in the public interest for this project to be implemented expeditiously due to the early benefits to the surrounding habitat, as well as hydrologic benefits to federal lands and estuaries in other portions of the South Florida ecosystem. Therefore, I recommend that should the non-Federal sponsor construct portions of the Site 1 Impoundment Project prior to the execution of a project cooperation agreement for this project, the non-Federal sponsor be credited for such construction costs at the time the project cooperation agreement for the Site 1 Impoundment Project is executed. Such credit would be applied toward the non-Federal sponsor’s share of the costs associated with the implementation of the CERP as authorized by Section 601(e)(5)(C) of WRDA 2000, shall not include cash reimbursements, and shall be subject to: a) the authorization of the Site 1 Impoundment Project by law; b) a determination by the Secretary of the Army that the activities are integral to the CERP restoration project; c) a certification by the District Engineer that the costs are reasonable, allowable, necessary, auditable, and allocable; and d) a certification by the District Engineer that the activities have been implemented in accordance with U.S. Army Corps of Engineers design and construction standards and applicable Federal and State laws.”

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated

in the revised final PIR and EA.

(3) Environmental.

(a) Figure 6.1-20. The figure shows the Periphyton Habitat Units in WCA-2A as declining to a value less than 13,500 in year 2050 under the with-project conditions. However, the data in Table 6.1-9 shows a value of 16,900 in 2050 for WCA-2A. The plot may be incorrectly using the 13,480 value for Cattail Expansion Rate Reduction for WCA-2A in 2050. This discrepancy should be corrected and the text modified as needed to show the appropriate effects of the project in WCA-2A.

CESAJ Response/Action Taken. Agree. Figure 6.1-20 has been corrected.

HQUSACE Analysis. The concern is resolved by the corrections to Fig. 6.1-20.

(b) Environmental Compliance. Annex B indicates compliance with all statutes and Executive Orders considered is current for this stage of the project. However, the information in Annex B raises a few questions.

(1) Section 6.0 Clean Air Act of 1972. Compliance with both Section 176 and Section 309 of the CAA is required. Compliance with §176 takes place at the beginning of feasibility and compliance with §309 is at the very end. There is no indication that the District has consulted with the local regulatory authority with jurisdiction over the project as required by §176, unless there is an unstated exemption from the regulation, the District has no jurisdictional authority to make a determination regarding air quality impacts of a project. The District must describe how it complied with §176 as well as how it will comply with Section 309.

CESAJ Response/Action Taken. Section 6.0 has been modified to address this concern with the following statements. Contact with the Broward County Environmental Protection Department (EPD) did not yield written concurrence as adequate pump specification info was not available for submission. The Corps will use existing vendor-supplied pump data to solicit a written response from the Broward County EPD with regards to compliance with the local/state air permitting process and conformity with the CAA State Implementation Plan. Also, prior to operations, either the Corps or the SFWMD will submit an Air General Permit notification form for all qualifying project pumps (on a fuel rate/emissions basis).

HQUSACE Analysis. The concern is resolved by the modifications to Section 6.0.

(2) Missing Statutes and Executive Orders:

- Bald Eagle Protection Act. The report indicates the Bald Eagle may be using the project area or the project impacted areas. There is no discussion of how the District has complied with the BEPA. A discussion of how the District has complied with the Act must be added.

CESAJ Response/Action Taken. Section 28, Bald and Golden Eagle Protection Act was added to Annex B. The bald eagle is protected under the ESA, the Bald and Golden Eagle Protection Act (16 U.S.C. § 668 et seq.), and the Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.). Take of bald eagles, their parts, eggs, and nests is prohibited by all three statutes. Take can occur in many forms including harm and harassment. During informal consultation with the FWS, the Corps determined that construction and operation of the Site 1 Impoundment Project was not likely to adversely affect the bald eagle. The FWS concurred. The level of effects to a species required in order to meet the "not likely to adversely affect" standard is that the effects must be insignificant and discountable, in other words, not measurable. Because the effects of the construction and operation of the Site 1 Impoundment Project meet the standard for "not likely to adversely affect" under the ESA, the effects cannot be measured and would not result in "take." Therefore, the construction and implementation of the Site 1 Impoundment Project is consistent with both the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

HQUSACE Analysis. The concern is resolved by the modifications to Section 6.0.

- Executive Order 13186 of January 10, 2001 -- *Responsibilities of Federal Agencies to Protect Migratory Birds*. Paragraph 3(f) encourages agencies to implement the conservation measures set forth in subparagraphs (1) through (15) of paragraph 3(e), as appropriate and practicable. There is no discussion of how the District has complied with the EO. A discussion of how the District has complied with Executive Order 13186 must be added.

CESAJ Response/Action Taken. Section 29 has been added for EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. The Jacksonville District complies with this E.O and the Migratory Bird Treaty Act by avoiding significant nesting sites of colonial-nesting wading birds and by avoiding impacts to significant migratory bird habitat in project footprints. During the construction phase of projects we include, in all contract specifications for work where migratory birds may be present or be attracted to the site after clearing (as in scraping and leveling for impoundments), specifications requiring the presence of a migratory bird monitor before and during construction. The specification also recommends measures to avoid creating habitat attractive to nesting migratory birds such as least terns or black-necked stilts, actions to be taken if migratory bird nesting is discovered (including cessation of work until fledging is complete). CESAJ-PD-ES maintains expertise in migratory birds and can provide, as needed, orientation during initial construction contractor partnering. The Corps routinely coordinates these actions with Florida Fish and Wildlife Conservation Commission (FWC) the State agency charged with stewardship of migratory birds, and with FWS. The Project is in full compliance with the referenced Executive Order.

HQUSACE Analysis. The concern is resolved by the modifications to Section 29. However, the district should note for future PIRs that this EO includes requirements to proactively restore and enhance migratory bird habitat not just avoid adverse effects. Future PIRs should discuss proactive measures included to comply with this EO.

(4) Cost Estimates. A Total Project Cost Summary (TPCS) is missing. A TPCS is required to show the fully funded cost estimate for the total project based upon the recommended scope and

schedule established in the report. Provide a TPCS as required by ER 1110-2-1302 and ER 1105-2-100.

CESAJ Response/Action Taken. The TPCS has been added to Section 7.2.11.6. Table 7-2.4 represents the Site 1 Impoundment's project first cost (October 2005 price levels) and the fully funded cost. The project first cost is based on the cost estimate from the MCACES estimate (recreation costs have also been added). The project first cost of \$79,100,000 will be utilized for the purposes of project authorization. The table also includes a fully funded project cost estimated through the mid point of the construction period (estimated to be August 2008). The fully funded estimate has been estimated in accordance with EM 1110-2-1304 Civil Works Construction Cost Index."

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(5) Real Estate.

(a) Existing and Future Without Project Conditions. Section 3, 3.3.2, notes that the future without-project condition assumes the 1,800 acres currently owned by the SFWMD in Palm Beach County would be surplus and sold for development. However, Section 5, 5.2, assumes in the no action alternative that only 1,660 acres of the 1,800 could be surplus. The District should present this information consistently in all sections of the report.

CESAJ Response/Action Taken.. Section 3.3.2 has been modified as shown.

The future without-project condition assumes that approximately 1,660 acres currently owned by the SFWMD in PBC would be surplus and sold for development into a residential community. The remaining 140 acres are part of the C&SF project and cannot be surplus.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(b) Land Acquisition Requirements. A.1.4 states that the project site is triangular in shape and includes approximately 1,900 acres. The rest of the document including D.3 of the Real Estate Plan (REP) describes the project as having a total footprint of 1,800 acres. The District should correct A.1.4.

CESAJ Response/Action Taken. Appendix A.1.4 has been modified to 1,800 acres.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(c) Estates. Section 7, 7.2.3.2, details that SFWMD owns fee title or an easement interest to the lands within the rights-of-way. D.15 of the REP notes that fee is the required estate for 1,660 acres. Is the required estate for the remaining acreage a temporary access road easement or is fee required for the entire project?

CESAJ Response/Action Taken. D.15 of the REP has been modified to read as follows:

The Site 1 Impoundment is comprised of approximately 1,800 acres with an effective storage area of approximately 1,660 acres. As the 1,660 acres within the Impoundment is required for water storage, fee is the recommended estate. The remaining approximately 140 acres is within the existing rights of way of the portion of the Hillsboro Canal required for the Project, the portion of Levee 40 and its borrow canal required for the Project, the portion of the Levee 36 required for the Project, or the area where the C&SF S39A Culvert is located, required for the Project as these lands were required for the original C&SF Project. SFWMD owns fee or a perpetual easement in these lands sufficient for project purposes. The construction features for which fee or the perpetual easement owned by SFWMD would be the minimum estate include: (a) the S-525A Pump Station; (b) the S-526A Culvert; (c) the S-527B Culvert; (d) the S-528A Culvert; (e) the S-527A fixed weir; (f) the C-508N Canal; (g) the Hillsboro Canal; (h) the perimeter L-508N Embankment; (i) the L-508N; and (j) Emergency Overflow Spillway.

The total estimated fee cost of lands within the Site 1 Impoundment is \$8,300,000 utilizing SFWMD's actual acquisition costs for the approximately 1,660 acres acquired. SFWMD will not receive credit for lands with the rights of way of the portion of the Hillsboro Canal required for the Project, the portion of Levee 40 and its borrow canal required for the Project, the portion of the Levee 36 required for the Project, or the area where the C&SF S39A Culvert is located, required for the Project as these lands were required for the original C&SF Project.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(d) HTRW. Section 1, 1.1.6, notes that the 1995 Environmental Assessment study on Tract No. 100-001 recommended that a Phase II Environmental Site Assessment be conducted. Paragraph 3.4.16 states that a Phase II Environmental Site Assessment was completed on this parcel. The text in 1.1.6 should be updated to reflect that a Phase II Assessment was completed. Paragraph 3.4.16 also states that the US Fish and Wildlife Service Environmental Contaminants staff reviewed the Phase II Environmental Site Assessment for Tract No. 100-001. Their review concluded that no further assessment is necessary as long as the trash and debris piles are removed as proposed. The text should explain the status of this action.

CESAJ Response/Action Taken. Section 1.1.6 has been modified with the following sentence. "The Phase II Report was completed in July 1995 and recommended that no additional investigative activities be performed."

Section 3.4.16 was modified to include the date of the assessment, July 1995. Also, the report has been modified for the status of Phase II Environmental Site Assessment for Tract No. 100-001. "The FWS-EC concluded that no further assessment is necessary as long as the trash and debris piles are removed as proposed. The trash and debris piles have since been removed from the property."

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(e) Facility/Utility Relocations.

(1) Ownership. Appendix A states that this project will require two miles of electrical and telephone utility relocations due to land acquisition. It also states that the SFWMD radio antenna will not be relocated. D. 21 of the REP notes that existing electrical and telephone utilities located inside the project currently servicing a residential structure outleased by SFWMD will be used for future operation or abandoned and removed. D. 21 also details that the owner will remove the remaining tower structure. The text should identify the owners of the tower, as well as the owners of the electrical and telephone utilities to be relocated.

CESAJ Response/Action Taken. D.21 of the REP has been modified to read as follows:

Existing electrical and telephone utilities located inside the Impoundment currently servicing a residential structure outleased by SFWMD, will be used for future operation of the project or abandoned and removed. Florida Power & Light Company has an electrical line easement to provide power to this residential structure. BellSouth has a permit from Florida Power & Light to locate its telephone lines on the power poles. In 2004, the cell tower located within the project area sustained hurricane damage and collapsed. This cell tower was on lands owned by SFWMD and was outleased to the Wil Tel Communications, the owner of the tower. The facilities have been relocated to an existing SFWMD cell tower on SFWMD lands outside the Project area and the owner has removed the remaining tower structure. As neither BellSouth nor the former owner of the cell tower have compensable interests, only the relocation of the Florida Power & Light Company lines are considered as a facility relocation if they are relocated or removed. ANY CONCLUSION OR CATEGORIZATION CONTAINED IN THIS REPORT THAT AN ITEM IS A UTILITY OR FACILITY RELOCATION TO BE PERFORMED BY THE NON-FEDERAL SPONSOR AS PART OF ITS LERRD RESPONSIBILITIES IS PRELIMINARY ONLY. THE GOVERNMENT WILL MAKE A FINAL DETERMINATION OF THE RELOCATIONS NECESSARY FOR THE CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE PROJECT AFTER FURTHER ANALYSIS AND COMPLETION AND APPROVAL OF FINAL ATTORNEY'S OPINIONS OF COMPENSABILITY FOR EACH OF THE IMPACTED UTILITIES AND FACILITIES.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(2) Compensability. It is not clear whether an Attorney's Opinion of Compensability has been completed in accordance with ER 405-1-12, Chapter 12 and Master Program Management Plan Final for CERP, Volume I, Appendix D. A determination must be made that the owner has compensable interest.

CESAJ Response/Action Taken. See response to (5)(e)(1) above.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(3) Required Statement. The REP should contain a statement similar to the paragraph in ER 405-1-12, Section 12-17(c)(6).

CESAJ Response/Action Taken. See response to (5)(e)(1) above.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(f) Baseline Cost Estimate.

(1) The cost estimates in Table 1 and Table 7.2-2 reflect October 2005 price levels. Does the cost estimates in Table D-1 and D-2 reflect October 2005 price levels or 2004?

CESAJ Response/Action Taken. The cost estimates in Table D-1 and D-2 of Appendix D have been modified to October 2005 price levels.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(2) Real Estate Cost excluding contingency in Table D-2 does not total. Please review estimates provided.

CESAJ Response/Action Taken. Estimates in both Table D-1 and Table D-2 have been modified and corrected.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(3) The prior Federal and SFWMD cost-shared amount is different in Table D-1 and Table D-2. The District should present consistent numbers in both tables.

CESAJ Response/Action Taken. The numbers have been changed to be consistent in both Tables D-1 and D-2.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(4) Appendix Table D-1 does not follow the format for Feature Code 01 for Lands and Damages as referenced under Paragraph 12-18 of ER 405-1-12. This should be revised. The Baseline Cost Estimate indicates on the first line that a fee cost of \$8,272,750 is included for the 1,658.16 acres acquired. This amount conflicts with statements in D.15 and D.24 that the actual acquisition price approved by DOI was \$8,300,000. D.24 also indicates that another \$59,706.12 was approved by DOI for incidental costs. It is also not clear on how some of the other costs indicated were arrived at. The \$27,250 was deducted from the total. Is the \$6,709 proposed credit for staff costs attributable to the acquisition of 5 acres for the Hillsboro Aquifer Storage Pilot Project or for this project? [Comment made by SAS RE during external ITR review]

CESAJ Response/Action Taken. Estimates in both Table D-1 and Table D-2 have been modified and corrected. The amount originally deducted for the Hillsboro ASR site have been included in the Site 1 Impoundment. No credit will be afforded for the provision of lands provided for the Hillsboro ASR Project, instead the credit will be provided upon certification of the lands for the Site 1 Impoundment. The following has been added to paragraph D-25 Cost estimates are based on the actual SFWMD acquisition costs and administrative costs provided by SFWMD and approved by Department of Interior. **Table D-1** provides the Baseline Cost Estimate for Real Estate costs, and **Table D-2** provides the MCACES Cost Estimate for Real Estate costs. The Programmatic Regulations for the Comprehensive Everglades Restoration Plan, 33 CFR 385, Part 385.5, require the development of Six Program-Wide Guidance Memorandum. The April 2005 draft of the Six Program-Wide Guidance Memorandum in Section 1.9.1 states: “Moreover, the SFWMD has agreed to only request credit for the actual cost of the land needed for a project instead of what the land is worth at the time of a Project Cooperation Agreement signing. Consequently, the Project Delivery Team should use actual acquisition costs in plan formulation, cost estimating, and crediting, subject to those costs being reasonable, allocable, and allowable.” In Section 2.3.2 entitled “Use Actual Acquisition Costs in Plan Formulation, Cost Estimating, and Crediting” the following language states “As described in Guidance Memorandum #1, the Project Delivery Team should use actual acquisition costs in plan formulation, cost estimating, and crediting subject to those costs being reasonable, allocable, and allowable.” SFWMD’s actual acquisition costs for lands already acquired were used for plan formulation, cost estimating and will be used for crediting.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(g) Cost Sharing. Comments s. and t. (AFB Comment 19 and 20) of the 17 April 2006 memorandum state that for resolution of the concerns, information on cost sharing presented in the District’s legal opinion will be included in the FPIR. District responded that the information from the legal opinion was included in section 7.2.3 of the Main Report and Real Estate Appendix D. The information was included in detail in the REP however section 7.2.3 does not include detailed information. Reference should be made to Appendix D for more detailed information if the more detailed information is not included in the main report.

CESAJ Response/Action Taken. Section 7.2.3 is a summary of Appendix D. However, a statement has been added to that section to send the reader to Appendix D for more detail. “A thorough discussion of the Federal Agriculture Improvement and Reform Act of 1996 and its effects on this project are located in Appendix D, Section D.8.”

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(h) Editorial.

- Add Refuge after National Wildlife in Appendix D, D.6.

- Remove *1025 from public law language in D.8, unless you plan to refer to the entire statute reference (110 Stat 1025).
- Add “0” after \$200,000,00 on page D-12 in D.8.
- Delete “are” from second sentence in D.9.

CESAJ Response/Action Taken. All editorials have been corrected.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(6) Engineering.

(a) Dam Safety. Section A.2.2 refers to a forthcoming agreement concerning the engineering design parameters for reservoir design with regard to dam safety. The report needs to discuss the status of this agreement and its potential impacts on the regulatory considerations, design, schedule, and cost associated with the Site 1 impoundment.

CESAJ Response/Action Taken. The status of the non-binding agreement has been finalized with appropriate signatures representing Jacksonville District, SFWMD and permitting agency FDEP. The agreement represents USACE and State of Florida requirements. The agreement has been attached to the Engineering Appendix Addendum as Design Criteria Memorandum 2 (DCM2). Other DCM’s have also been produced; however, DCM2 has the most impact on design of reservoirs and dams, thus costs. Site 1 project original design--included in the Draft and Final PIR without Addendum—was inadequate in face of today’s understanding of USACE Regulations and Guidance Manuals for reservoirs and dams, including that of FEMA Federal Guidelines. Much research took place before the drafting of DCM2 that reflects USACE policies and philosophical approach to design of these structures. Implementation of DCM2 (USACE Regulations) has a significant impact on design and estimated cost of the structure in recognition of the High Hazard Potential Classification (Standard 1) the reservoir requires. Based on risk and uncertainty analyses, much of the impact was reduced, but still places the project above the earlier identified Section 902 limit, which the project “just” met with the PIR design.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(b) Model Verification. ITR comment CESAJ-EN-HI-AG-14 deals with the application of MODFLOW. The final sentence of the response states, “The horizontal flow assumption is widely employed because of its simplicity, as long as the error is accepted.” The explanation of modeling assumptions for this, and other related ITR comments, is adequate. However, in light of the comment response, further discussion regarding the verification of the SFWMM and MODFLOW model results is warranted.

CESAJ Response/Action Taken. The SFWMM has been accepted by CERP as the regional model and has been extensively peer reviewed. SFWMM provided boundary conditions for the MODFLOW model that was used as the sub-regional model. MODFLOW model software itself

is widely accepted in the engineering community as a groundwater model and is part of the BYU GMS packaged platform. The MODFLOW used for the project included multiple add-on packages, e.g. wetland package that enables the model to provide additional capabilities, ultimately to improve engineering design and team decision making. The MODFLOW model used originated from the Lower East Coast subRegional MODFLOW MODEL (LECsR). This model has general acceptance in local communities as an adequate tool for future planning and provision of design data. For Site 1, the SEEP2D numerical model--another highly accepted model in the engineering community--was used to address specific seepage quantification needs and formed the basis of meeting Savings Clause requirements regarding the assurance of no significant reduction in level of service flood protection.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

(c) **Value Engineering.** Value Engineering (VE) is mandated by The Office of Federal Procurement Policy Act, Section 911 of WRDA 1986 and OMB Circular A-131. Paragraph 7d, ER 11-1-321, requires all feasibility reports and equivalent, which include this PIR, to “*contain a review and approval statement from the PM indicating that required VE action has been completed, as appropriate, for that phase of the project. This statement will indicate that appropriate studies have been performed and that all proposals indicating savings greater than \$1,000,000, impacting plan formulation, have been resolved.*” Paragraph D-2b, ER 11-1-321, requires “*Value Management Workshops (VE Studies) to be performed in the planning and design phases*” and “*At least one VE study will be performed during the feasibility phase of the project, as part of the plan formulation process prior to the selection of final alternatives.*” The PIR does not discuss VE activities and should present the results of completed VE workshops or studies and the status of any ongoing or planned VE efforts for this project.

CESAJ Response/Action Taken. A VE study was completed in May 2006 and is attached to the Appendix A Addendum. Section 7.1.5, Value Engineering has been added to Section 7 of the Main Report to discuss the study that was performed in May 2006. Another VE Study will be performed during Plans Specifications phase as it is recognized that two formal VE Studies for projects of this scope are required, one during the feasibility phase and the other later during the Plans and Specifications phase.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

2. RESOLUTION OF HQ CONCERNS IDENTIFIED DURING REVIEW OF THE REVISED DRAFT PIR AND EA.

HQ reviewed the Revised DPIR and had both general and specific comments regarding the content of the detailed assurances documentation found in Annex C and the Main Report. The review team considered the detailed assurances documentation to be insufficient for developing and supporting a binding reservation. The documentation must be presented in a format that is understandable by the public. The review team, although not made up of hydraulic engineers is better educated than the general public and found the documentation of this complex information

difficult to comprehend. Review comments and suggestions for an improved presentation follow. Each concern is followed by the district's action taken and a HQUSACE analysis. **All of the prior concerns have been resolved.**

A. Comment. Executive Summary. The document needs a more simplified, understandable explanation of the legal requirements for the assurances analyses. It should address how the project (including components) is to operate, the analyses completed to date and still required, and the overall conclusions reached. Use the specific “assurances” and “savings” listed in WRDA 2000 as subheadings in the executive summary, and collect the conclusions scattered throughout the report under the appropriate subheading.

CESAJ Response/Action Taken: A “Preface” and “Summary of Results” as follows has been added to beginning of Annex C.

Summary of Results

Water Made Available for the Natural System

The Site 1 Impoundment project will provide additional water for the natural system in northern and central LNWR and Everglades National Park which will be reserved or allocated for the natural system under State of Florida law in accordance with the requirements of Section 601(h)(4) of the Water Resources Development Act of 2000. Details of these results can be found in Annex C, Sections VI.B.

Water Made Available for Other Water-Related Needs

The Site 1 Impoundment project involves storage of Hillsboro Canal basin runoff that would be discharged to tide without the project, and releasing the stored water to meet water supply and resource protection needs in the Hillsboro Canal basin. This reduces the demand on the LNWR as a source of supply to meet those needs, and creates an additional source resulting in an overall net increase in the volume of water available to perform these functions. Details of these results can be found in Annex C, Section VI.C.

Effects on Existing Legal Sources of Water

Under normal conditions, implementation of the Site 1 Impoundment project will result in a transfer of a portion of the existing legal source or water for municipal and agricultural water supply in the Hillsboro Canal basin from canal deliveries via the C&SF Project to water stored in and delivered out of the Site 1 Impoundment. Preliminary evaluations also indicate that the water delivered from the impoundment will be of comparable (or better) water quality than that delivered via the Hillsboro Canal from Lake Okeechobee for water supply purposes. However, it should also be noted that project operations will not preclude operations of the regional water management system to make deliveries from existing sources during drought conditions or if the impoundment were to become inoperable. Furthermore, the transfer of a portion of the existing legal source of water to the Hillsboro Canal basin that will occur as a result of the Site 1 Impoundment project will not be enabled

until the operational testing and verification phase of the project is completed and it has been verified that the project will operate as designed and consistent with the Assurances and Savings Clause evaluations.

Implementation of the Site 1 Impoundment project will not result in a significant change in the quantity of water available to fish and wildlife from existing legal sources of water in the project area. It is noted that the overall increase in the quantity of water retained in the natural system will transfer a portion of the water budget for LNWR from canal deliveries via the C&SF Project to local rainfall, but this hydrologic change is (transferring a portion of the existing legal source for maintaining desirable water levels from canal deliveries to local rainfall and water stored in the surficial aquifer) is the purpose of the project. The new source will be of comparable quantity and better water quality. Furthermore, the transfer of a portion of the existing legal sources of water for the LNWR does not preclude operations of the regional water management system to make supplemental deliveries to the LNWR during drought conditions to compensate for water supply releases from the LNWR to the Lower East Coast. Details of these results can be found in Annex C, Section VI.D.

Effects on Existing Level of Service for Flood Protection

Potential effects of the storage reservoir on water levels on adjacent lands were evaluated. In response to these evaluations, the project includes a seepage management system consisting of a seepage canal and pump to ensure that adjacent lands are not adversely affected. Details of this evaluation and flood protection features can be found in Annex C, Section VI.E.

HQUSACE Analysis: The concern is resolved by the text changes included on pages Annex C-1 and C-2.

B. Comment. Public Meeting/Workshop. The District should hold a public meeting/workshop during the review of the supplemental EIS to explain assurances and savings. We will get a lot of input from public and interested parties on the matter of transfers of existing legal sources. Our main interest (Federal) should probably be on the identification and reservations of water for the natural system (e.g. the water and its timing to attain the NER benefits).

CESAJ Response/Action Taken: The NEPA document for the Site 1 Impoundment project is an Environmental Assessment (EA), not an EIS. A public meeting on the draft PIR/EA was held on 1 March 2005. Updated project assurances and savings clause analyses were included in the Revised Draft Site 1 Impoundment PIR and EA, which was circulated to the public in December 2005.

Because the project is non-controversial and no public, agency, or policy review concerns were received on the initial draft Assurances & Savings Clause documentation issued with the February 2005 Draft PIR, it was decided by SAJ not to hold a second public meeting. Only Department of Interior (which was represented on the project assurances team that performed the evaluations for the Site 1 project) and the National Resources Defense Council responded with questions and/or comments on the project assurances on the revised draft report.

HQUSACE Analysis: The concern is resolved by the above response.

C. Project Operations and Effects. The assurances provided particularly with regard to the making of a water reservation are very complicated and lack a description of operations detailed enough to make an assessment of whether adequate information is provided in the Report to allow for a legally sufficient water reservation to be made by the State. It is understood that the flow of water will rise and fall with conditions over time and season. It may be useful to add a more complete narrative description not based on modeling or statistical graphics but a simpler description of the expected operational flow of water within the project and its connection to the system. A description of minimum flows or in flooding events withholding of water to meet environmental objectives of the project.

CESAJ Response/Action Taken: The draft Guidance Memoranda on Project Assurances and Savings Clause issues have been written in a collaborative manner between USACE, SFWMD, and DOI. Through the guidance development process, it was agreed that the methodology reflected in the RDPIR was the best way to identify the quantity, timing, and distribution of water made available by CERP projects for the natural system and for other water-related needs of the region, and for evaluating effects on existing legal sources of water.

A description of the operational strategy to meet project objectives is contained within Annex D, Section 4 of the Draft Operating Manual as well as the operations to meet project purposes (Annex D, Section 8). As the CERP process continues through water reservations and completion of construction and operational testing and monitoring of CERP projects, the project Operating Manuals will be modified to be consistent with the water reservations or allocations for the natural system made by the State in accordance with WRDA 2000.

HQUSACE Analysis: The concern is resolved by the response.

D. Peer Review and Model Certification. The models used to reach the report's conclusions (SFWWM, SEEP/W, MODFLOW, GMS) need to be peer reviewed, per OMB's "Final Information Quality Bulletin for Peer Review". It's too easy to argue that "assurances" and "savings" are novel, controversial, precedent-setting, and have significant interagency interest, any one of which triggers the OMB requirements. One way to approach this is to ask the model owners/proponents for a statement regarding peer review that has already occurred in the development and use of their models. Failing that, why not turn this over to the Interagency Modeling Center – make it a new mission for them acting as agents for the Ecosystem Center of Expertise? There needs to be a section in the PIR that presents the status of each models' compliance with agency independent technical review, peer review, and certification requirements. Guidance for implementing the model certification requirements of EC 1105-2-407 has not been issued. In the interim, ITR should ensure that commonly accepted engineering models are being used, the models are applied correctly, and that the data and assumptions are validated. For models that do not fall within this category the District should provide for Peer Review within their ITR process.

CESAJ Response/Action Taken: The South Florida Water Management Model [SFWMM] was completed by the South Florida Water Management District [SFWMD] under a U.S. Army

Corps of Engineers [USACE] contract (DACW17-81-C-0035) during the 1980s. An earlier version of the SFWMM was the subject of a panel peer review in 1998. The current version of the SFWMM (Version 5.5) was the topic of a recent peer review which was conducted between 1-August and 28-October of 2005. The review resulted in an October 2005 report titled “The South Florida Water Management Model, Version 5.5: Review of the SFWMM Adequacy as a Tool for Addressing Water Resources Issues.” Names of reviewers, documentation of the review process, and the final peer review report containing the panel’s recommendations and conclusions are publicly available and can be found in their entirety at <http://webboard.sfwmd.gov:8080/~sfwmm>.

The SFWMM was developed to serve as a regional-scale hydrologic model intended to assist in water resource planning efforts of the USACE and SFWMD. The SFWMM allows for multiple-year simulations of hydrologic conditions in southern Florida as influenced by various natural (e.g., rainfall and evaporation) and man-made (e.g., water control structures, canals, reservoirs and their operation) factors. The SFWMM’s capacity to simulate both the physical and the complex operational elements of water management in southern Florida has repeatedly been characterized as being unique to the SFWMM as reflected in the following statement:

“There is no other existing model that can do what the SFWMM does in South Florida. The value of the SFWMM is that it provides an integrated description of this unique, large, and complicated system. It would be wrong to think of this model or any other future model as a generic hydrologic tool. For the foreseeable, SFWMD needs a customized tool, one that is appropriate for the unique environment it needs to represent.”¹

The SFWMM considers not only physical, but also operational attributes of southern Florida’s landscape and water management infrastructure, and provides a means for simulating how alterations in the operation, or physical composition of southern Florida’s regional water management infrastructure could affect various developed and natural areas.

This model has been applied during numerous USACE and SFWMD water resource planning and operational planning efforts including syntheses of USACE General Design Memoranda, to Florida’s water resource and water supply planning efforts, to formulation and evaluation of alternative Lake Okeechobee regulation schedules. As such, the SFWMM has been subjected numerous times to SFWMD and USACE technical review. Additionally, the SFWMM has been discussed, debated, and used as a source of information during numerous public planning processes to quantify potential impacts of various planning and policy decisions on southern Florida’s water resources.

MODFLOW is the most widely used public domain groundwater modeling code in the world. It was originally developed by the United States Geological Survey (USGS) in 1988 and has been thoroughly documented in the literature as well as in thousands of case studies across the United States. The MODFLOW model developed for the Site 1 Impoundment project was narrowly

¹ The South Florida Water Management Model, Version 5.5: Review of the SFWMM Adequacy as a Tool for Addressing Water Resources Issues, Final Panel Report, 2005.

focused and targeted for the evaluation of offsite flood impacts and to determine the appropriate seepage management system.

SEEP/W and GMS tools were not utilized to perform evaluations for the Site 1 Impoundment report.

HQUSACE Analysis: The concern is resolved by the response.

E. Compliance with Programmatic Regulations. The report needs to clarify the degree to which the analyses completed to date satisfy the requirements in the latest draft programmatic regulations. It is understood that the pre-CERP Baseline and programmatic guidance have not yet been finalized, however the report does not discuss specifically what should be refined in further analyses and the degree of uncertainty that exists in these results and tentative recommendations. Section VI notes that supplemental analyses will be conducted upon approval of the programmatic guidance, which will lead to updated analyses and documentation of the quantities of water dedicated and managed for the natural system and quantities made available for other needs. It isn't clear whether the updated analyses might result in significantly different conclusions relative reservations and savings or just minor changes. The uncertainty of these findings in light of future regulation changes and updated analyses should be discussed further. The report should also clarify the degree to which the analysis complies with the programmatic regulations relative to plan formulation. The pro-regs call for screenings to evaluate the potential for alternatives to be consistent with the savings and assurance requirements, however the analysis must only be done for the selected plan. This should be explained so that the public does not have expectations that the savings and assurances analyses may drive the plan formulation process.

CESAJ Response/Action Taken: The Assurances and Savings Clause evaluations included in the RDPIR fully comply with the relevant requirements of WRDA 2000 and the CERP Programmatic Regulations. The "Supplemental Analyses" disclaimer was included to notify policy compliance reviewers, agencies, stakeholders, and the public that the procedures that were utilized were those that were developed at the point in time that the Revised Draft PIR was prepared through the Programmatic Guidance Memoranda development process (specifically, GMs 3 and 4) and that when those are finalized, the evaluation procedures may change. Since the technical team that completed the Assurances and Savings Clause evaluations for the Site 1 Impoundment Revised Draft PIR is also involved in the GMs 3 and 4 development process, there is currently a high level of certainty (from a procedural and analytical methods perspective) that any changes in the evaluation procedures coming through the GM development process will not result in significant changes to the results that were reported for this project (i.e., water identified to be reserved or allocated in WCA-1 and ENP; additional water for municipal water supply in the vicinity of the impoundment; a transfer of a portion of an existing source for municipal water supply in the vicinity of the impoundment; a transfer of a portion of the existing legal source for fish and wildlife in LNWR from Lake Okeechobee deliveries to rainfall; and no effects on level of service for flood protection since the project includes seepage management features).

With respect to screening during plan formulation for compliance with the Savings Clause, that step is part of the normal process for formulating plans for CERP projects. The Savings Clause

requires that if existing legal sources of water are transferred, the project should include features and operations to ensure comparable quality and quantity of water from the new sources resulting from project implementation. The system-wide water supply performance measures that are evaluated and the project-specific water quality evaluations that are performed as part of plan selection (particularly in an affirmation-type PIR) help to ensure that at the point of plan selection, there are no Savings Clause problems that would prevent the selected plan from being implemented. Similarly, for the flood protection aspect of the Savings Clause, impacts to adjacent water levels are typically well-understood by the time a plan is selected, because the costs for seepage mitigation features and real estate must be included in the selected plan. The “Preface” at the beginning of the Assurances and Savings Clause report now includes the following explanation that these evaluations are performed after the selected plan has been tentatively identified:

“These evaluations were completed after the selected plan was identified and justified in accordance with the procedures for plan formulation, evaluation, and justification contained in the CERP Programmatic Regulations (33 CFR 385) and in the April 2005 draft Programmatic Guidance Memorandum 2 (“Plan Formulation and Evaluation”) promulgated in accordance with the CERP Programmatic Regulations.”

HQUSACE Analysis: The concern is resolved by the response and text changes noted.

F. Water Data. The report indicates in Section II.B.1 that with-project and without-project comparisons were made based on model simulations that used year 2000 land use and 2003 permitted demands. Section I.B.1 states that the Site 1 analyses use simulations representative of year 2000 land use and withdrawals. This creates some confusion as to what the basis was for the data used in the Site 1 analyses. Further, the EAA analyses use 2005 land use and demand conditions. It isn’t clear why the data being used for system-wide modeling in the ongoing studies of Site 1 and EAA are not consistent. The description of the Site 1 water data and analyses should be made consistent throughout the text and the latest available information used to address the requirements of the current draft of the programmatic regulations. Discussions should note how the Pre-CERP Baseline, which is yet to be established, may differ from what has been assumed for these analyses and how the results may be affected.

CESAJ Response/Action Taken: The Existing Conditions PIR baseline for EAA and Site 1 are different. In order to evaluate project effects vis-à-vis the Savings Clause, one must compare to the Pre-CERP baseline (which includes a model run of conditions in South Florida in Dec 2000, the date of enactment of WRDA 2000), using 2000 land use and 2000 permitted water supply demands. Although the concurrence step has not yet been completed, the technical work on the Pre-CERP Baseline has been completed. For the Site 1 Impoundment project, the project team utilized a model run with assumptions based on conditions and operational rules representative of 2000 conditions. It is not expected that the 2000 model run used for the Site 1 Impoundment project and the Pre-CERP Baseline model run will be significantly different.

The determination of water made available for the natural system and other water related needs of the region should be compared to the Existing Conditions PIR Baseline (per the procedures outlined in GM 4), which for the Site 1 project were conditions as of 2003. The team determined

that for land use, the Existing Conditions baseline was best represented by 2000 land use, as there is no significant difference between 2000 and 2003 in the study area. For permitted water supply demands, 2003 conditions were utilized. The Existing Conditions PIR Baseline for the EAA Storage Reservoirs project analyses was 2005.

HQUSACE Analysis: The concern is resolved by the response.

G. Basis for Reservations. Section II.E discusses the water reservations that will be made for beneficial waters made available for protection of fish and wildlife. It isn't readily apparent what that reservation means relative to the timing, quantity, and distribution of water. Section VI discusses the system-wide effects and notes that Site 1 alleviates withdrawals from LNWR (WCA-1) during the dry season and improve its hydroperiods and hydropatterns, as well as increasing the water available for delivery to the WCAs and ENP. The last paragraph under Section VI.B.1.a discusses negative volumes of beneficial water for LNWR during less than 10% of the years in the periods of record. The report should discuss how the water reservation treats these negative volumes of beneficial use attributed to the project. The report needs to explain how the State is going to make transfers of legal sources and reserve waters for the natural system and other beneficial uses. How transfers are made and how waters are reserved will be important information for the Corps, other agencies and affected parties, and the general public to assure that interests are protected and project benefits are assured. The report should present how, and in what manner assurances and savings will be made. As well as what actions would be undertaken to make changes over time.

CESAJ Response/Action Taken: Under Florida law, the statutory requirement for a reservation is that the water must be for "the protection of fish and wildlife"; therefore, water that is made available by a project that is not immediately beneficial for the protection of fish and wildlife cannot be "reserved" under Florida law, but will be protected by the State of Florida in the event that other CERP projects depend on that water to achieve the benefits of the Plan. Reservation of water in Florida is by administrative code rule. Rule-making for a water reservation must be completed prior to execution of the Project Cooperation Agreement (per section 601(h)(4)(B)(ii) of WRDA 2000). Section I.D provides additional information on what actions will be undertaken if conditions change through time. It is envisioned that the reservation rule-making will take into account the timing, quantity, and distribution aspects of project performance documented in this evaluation.

With respect to transfers of legal sources that will occur as a result of the Site 1 Impoundment project, the transfer of a portion of the existing legal source for municipal water supply in the Lower East Coast (Hillsboro Canal basin) from water delivered out of WCA-1 via the regional water management system to water stored in the impoundment will not be enabled until the operational testing and verification phase of the project is completed and it has been verified that the project will operate as designed and consistent with the Assurances and Savings Clause evaluations.

The negative volumes of water shown in Figures C8 – C-10 are likely the result of averaging the results for all of LNWR combined with the effect of operational rules that were modeled to "deliver" water to meet restoration targets in downstream areas (e.g., WCAs 2A and 3A and

ENP). Recent modeling work completed for these evaluations for other projects indicates the attempting to incorporate operational rules into the simulation model to deliver more water to downstream natural areas in a compartmentalized system can have unintended consequences (i.e., a mathematical calculation showing less beneficial water). Adaptive management and the project operating manual would prevent such occurrences in real life; when stages were at “floor” levels per the regulation schedule for LNWR, no further releases of water necessary for the protection of fish and wildlife habitat would be typically be allowed (unless in a dire emergency situation).

HQUSACE Analysis: The concern is resolved to the degree possible at this time by the response and text sections noted. As the design progresses, details are refined, and further changes are made to the project operations manual, future modeling efforts and analyses will need to be completed by the district and sponsor to verify the project effects and assure compliance with the Savings Clause.

H. Comment. Figure C-1. The figure shows information on the indicator regions, which are better suited to a color presentation rather than black and white. The figure should be revised for public coordination.

CESAJ Response/Action Taken: The report was printed in black and white to hold down the costs of printing. This document is available in color on the www.evergladesplan.org website and on CD. Figure C-1 is shown to represent the indicator regions throughout the South Florida Water Management Model (SFWMM) domain and while the use of color would add to readability of a printed map, color is irrelevant to the locations of the indicator regions.

HQUSACE Analysis: The concern is resolved by the response.

I. Figures C-2 to C-10. The Annex discussions of LNWR impacts references Figures C-2 to C-10, but these figures are not easily understood. It would be helpful to provide an explanation for those tables, which can be used to understand what is being presented and to help interpret what they show as a basis for understanding the impacts and reservations. The report should explain the differences between total water, beneficial water, and additional beneficial water. Also it would be helpful to explain why the beneficial water made available, which results in increased WCA-1 depths of 0.003 ft. or less in most years is significant.

CESAJ Response/Action Taken: The following explanation has been added to Section VI.B.1.a:

“Figures C-2 through C-10 graphically display project effects on the quantity of water and the quantity of beneficial water in LNWR. Figures C-2 – C-4 show the total amount of water (spatially averaged) in LNWR, along with the target amount (the NSM462 line). These figures illustrate that water levels (when averaged for all of LNWR) are typically above the target water level. The second step in the evaluation is to identify the quantity of beneficial water (below and up to the target line) existing and existing with-project. Since these two-curve graphics use ranked data, it is possible (and expected) that even though water levels are typically above target stages, they are not always above target stages for all grid cells in the

model in LNWR. The project (by creating an alternative source of water supply for delivery to the Hillsboro Canal) creates a negligible but still slightly positive increase in the quantity of beneficial water in LNWR (see Figures C-5 – C-7). This negligible increase is consistent with the magnitude of the effect of the storage volume provided by the reservoir translated across 140,000 acres +/- in LNWR, i.e., graphically insignificant when considered on that scale). To quantify the negligible increase, the existing condition values in the curves are subtracted from the existing condition with-project values in the curves (Figures C-8 – C-10). This is the water made available by the project. The graphical display is ranked values (i.e., highest to lowest).”

The 0.003 ft. of difference (and similar) results shown are simply what is calculated by the model post-processor based on the difference in quantity averaged across the LNWR space. An explanation of significance of this change was not included in this quantification, since the beneficial effect of the change is more appropriately part of the benefits and justification analyses performed for plan selection (which is based on a different baseline (i.e., 2050) condition).

HQUSACE Analysis: The concern is resolved by the text changes noted and information provided in the response.

J. Effects on ENP. Section VI.B.1.c discusses the effects of Site 1 on ENP focused on certain structures in Indicator Region 130 where additional waters were shown to have beneficial effects. Clarification is needed to provide the reader with understanding as to why this is an appropriate approach for representing the effects on ENP. That section also notes that the project’s effects on overland flow are yet to be evaluated as a basis for defining additional flow attributable to the project that is beneficial for fish and wildlife. Presumably, this also should be included in the reservation, but its timing and magnitude is unclear. The report should discuss this point relative to the uncertainty surrounding the reservations.

CESAJ Response/Action Taken: Indicator Region (IR) 130 was selected because it is just south of the S-12 structures, which regulate structural flow into ENP. This explanation is included in Section II.B.1.a (“Hydrologic Targets for LNWR and ENP”). This is appropriate because the S-12 structures are the primary source of inflows to ENP.

Quantifying overland flow has been discussed for inclusion in the method for identifying water made available by CERP projects for natural system areas during the further development of GM 4; however, since there are no flow targets yet established anywhere within the Everglades (e.g., x cfs should be maintained at y structure), using flow as the sole basis for identifying water to be reserved or allocated by the State for the natural system has not yet been fully adopted as part of the evaluation procedures. In part, this is due to recognition by the SFWMD that per State of Florida law, a reservation must be for the protection of fish and wildlife (or for public health and safety); if there is no direct nexus between flow at a structure and a fish and wildlife restoration target, SFWMD staff are concerned that using flow alone as the sole basis for a reservation may be problematic from an administrative rule-making perspective.

With respect to uncertainty surrounding a reservation or allocation of water based in part on an

evaluation of flow volumes, the quantification of flow is based on the attainment of restoration water levels (stages) in natural system areas (e.g., Everglades National Park) based on the Natural System Model (i.e., stages at locations of interest produce certain flow volumes at the S-12s). The selected plan was selected because of the degree of attainment of restoration water levels throughout the South Florida ecosystem as compared to NSM water levels. The modeling tool (SFWMM) can compute flows at structures, which are the result of adjacent water levels; therefore, there is very little uncertainty associated with the flows that the model computes.

The State of Florida must reserve or allocate water to achieve the performance for the natural system described in the PIR, during both initial operations and as the next-added increment of CERP (i.e., future without-project baseline). The key to ensuring the performance of the project is the operating manual and adaptive management. If it is determined through monitoring that project operations are not achieving the performance that was the basis for project justification and as quantified through the Assurances evaluation process, either the reservation will be modified (through administrative rule-making) or project operations will be modified (through changes to the project operating manual).

HQUSACE Analysis: The concern is resolved by the response.

K. Figures C-12 to C-17. The figures are referenced generally in the Annex C text and it would be helpful to have some further discussions regarding what they are intended to show and how to read them. In addition, there are several corrections that should be made to the figures. C-12 and C-14 appear to be a year out of sequence on the data plots (ie. the maximum point for total flow appears to be 1994 in C-12 and 1995 in C-14). Figure C-15 is showing water year as the vertical axis units and it should be changed to show acre-feet. Figures C-13, C-15 and C-17 show water year as the horizontal axis and should be revised to show percent of time equaled or exceeded.

CESAJ Response/Action Taken: The following explanation has been added to Section VI.B.1.c:

“Figure C-11 is a time series of weekly average depths (hydrograph) for IR 130 produced for three conditions: NSM, 2003 baseline (2003B2), and 2003 baseline with project (2003B2S1). This figure shows the temporal variation of depths in IR 130. Figures C-12 and C-13 consists of two traces (2003 baseline and 2003 baseline with project) illustrating that there is a negligible difference in the total volume of water flowing into ENP as measured for IR 130. Figure C-12 is a time series (indicating temporal variability) and Figure C-13 consists of ranked data. Figures C-14 and C-15 show the quantity of beneficial water (up to NSM target water levels in IR 130) flowing into ENP. Figure C-14 is a time series, and Figure C-15 is ranked data. Again, these figures illustrate that there is a minute difference in beneficial water volumes resulting from project implementation. Figures C-16 and C-17 indicate the difference in volume of beneficial water flowing into ENP as measured for this evaluation. Figure C-16 is a time series, and Figure C-17 is ranked data. These two figures illustrate the expected performance that will be achieved in ENP upon completion of the reservation or allocation of water for the natural system by the State of Florida associated with implementation of the Site 1 Impoundment project.”

The label of the vertical axis for Figure C-15 will be corrected. The labeling for the horizontal axes is correct (i.e., these are water year values; since the values are ranked for C-13, C-15, and C-17, the years were not included on the axis).

HQUSACE Analysis: The concern is partially resolved by the text changes noted in the response. HQ is confused by the horizontal axis labeling for C-13, C-15, and C-17. The figure titles indicate that probability is being shown and other figures showing probability functions, such as C-2 to C-10, have percentages shown on the horizontal axis. Further explanation is needed or the figures should be revised.

CESAJ Response/Action Taken. The titles to Figures C-13, C-15, and C-17 have been modified to show “Volume Curve for Water Year Values” as they depict the volume (acre-feet of flow) ranked over the period of record. Since the water years are ranked, these values are not shown on the label of the axis.

HQUSACE Analysis. The concern is resolved by the response and text changes incorporated in the revised final PIR and EA.

L. Assumed Legal Sources of Water. Section VI.D notes that the existing legal sources of water at the time of project implementation are assumed to be the same as those in December 2000. The basis for that assumption should be explained to clarify why it is reasonable to assume no changes occur.

CESAJ Response/Action Taken: The intent of this statement is to establish that for purposes of complying with the State of Florida’s Savings Clause in Section 373.1501, Florida Statutes, (which protects existing legal users through time, not existing legal sources as of December 2000), using the 2000 condition model run is sufficient to be representative of conditions as of the date of projected project implementation. This information is also included in the “State Compliance Report” prepared by SFWMD to document compliance with State law prior to formal endorsement of the project by SFWMD (following FDEP approval of the State Compliance Report). The State Compliance Report follows the Assurances and Savings Clause evaluations in Annex C.

HQUSACE Analysis: The concern is resolved by the response.

M. Sources for the Tribes. Figures C-22 and C-23 regarding the impacts on the Seminole Tribe’s sources use several abbreviations and model run names that are not defined in the text descriptions. It would be helpful to explain 2000B2, 2000B2+S1, LOK, STA-6+ROTT S190, etc. to enhance the reader’s understanding of what is being shown in these figures. Section VI.D.3 discusses the effects on the Miccosukee Tribe’s sources in generalities. It isn’t clear what the basis is for the conclusions- how small is the Site 1 effect in comparison to quantities from existing resources? Is there some more information that can be added to the explanation to help readers understand and concur with this conclusion?

CESAJ Response/Action Taken: The following explanation was added to Section VI.D.2 (“Sources for the Seminole Tribe of Florida”):

“2000B2 is the year 2000 base condition model run. 2000B2+S1 is the 2000 base condition model run including the Site 1 project. LOK refers to deliveries to the Seminoles from Lake Okeechobee, and STA6+Rott refers to deliveries to the Seminoles from the Stormwater Treatment Area 6/Rotenburger Wildlife Management Area sub-basin.”

The bottom line for this analysis is that the Site 1 Impoundment project has no effect on the quantity of water available from existing legal sources as of 2000 for the Seminole Tribe’s Big Cypress Reservation.

The following explanation was added to Section VI.D.3 (“Sources for the Miccosukee Tribe of Indians of Florida”):

“The Site 1 Impoundment’s influence on the average annual water budget in WCA 3 and the Miccosukee Tribe’s use of that area is insignificant. This is illustrated in two different ways in this evaluation: First, Figure C-21 graphically demonstrates how much water is made available for municipal use in the vicinity of the impoundment. Without the project, this water would be coming from the natural system, so the transfer of this source from the natural system to the impoundment increases the quantity of water remaining in the natural system. But the net average annual amount transferred is not great (approximately 14 k-ac.ft.). Similarly, Figure C-17 shows the range of additional water provided to Everglades National Park, which is assumed to be flowing through the system (from Lake Okeechobee, through WCAs 1, 2, and 3 into ENP via the S-12 structures). Again, the median quantity is small relative to the Park’s overall water budget (less than 10 k-ac.ft.); therefore, it is reasonable to conclude (and consistent with the storage volume provided by the impoundment) that the project’s effects on sources of water for the Miccosukee Tribe is insignificant.”

HQUSACE Analysis: The concern is resolved by the text changes noted in the response.

3. RESOLUTION OF HQ POLICY COMPLIANCE REVIEW COMMENTS ON THE DRAFT PIR AND AFB. HQ review of the DPIR identified no new issues. However, HQ determined that some of the issues identified during review of the AFB materials were not fully resolved. The following section documents the resolution of each AFB issue. The first three paragraphs for each comment present the original HQ comment, the District’s response, and a summary of discussions that occurred at the 16 June 2005 AFB and statement of action required to resolve the issue. The number of each comment as identified in the AFB Guidance Memorandum is shown in brackets [AFB Comment 1.]. For those issues not resolved in the DPIR, further guidance was provided on the Action Required during preparation of the final PIR (FPIR). This is followed by the district’s statement of Action Taken and a HQUSACE Analysis based on review of the FPIR. Any further coordination needed to fully resolve the issues in the revised Final PIR is then summarized. **All concerns identified during review of the AFB materials and draft PIR and EA have been resolved.**

a. Quality of AFB Document. [AFB Comment 1.] The hard copy excerpt of the electronic document is disjointed, difficult to follow, and lacks certain information necessary for an AFB.

Future submissions in hard copy should be complete documents. The legibility of figures needs to be improved for the printed draft PIR.

Response. Concur; the electronic format (compact disc) document that was provided contains information addressing each of the requirements for Alternative Formulation Briefings listed in Exhibit G-5 (“Items to be Addressed in Alternative Formulation Briefing Documentation”). The paper copy included information excerpted from the electronic format document at the request of HQUSACE reviewers. Legibility of figures will be improved in future printed documents prepared for future public and agency review.

Discussion/Action Required. The quality of the electronic document is very good, but the volume of material (750 pages) is excessive for an AFB. The draft PIR that is submitted to HQ for review will be paper copies.

Action Taken. Ten paper copies of the PIR will submitted to HQ for review.

HQUSACE Analysis. The concern is resolved.

b. Environmental Outputs. [AFB Comment 2.] The most significant issue to be addressed for the AFB is how to measure the environmental outputs of alternatives. According to ER 1105-2-100, paragraph E-33.b.(1): “The assessment methodology chosen for a study should be governed by how well the technique meets the needs of the study goals and objectives and level of detail for a given study. The assessment methodology may include habitat models, or information derived from community or ecosystem assessments using other scientifically based methods that are generally accepted by state or Federal resource agencies.”

During the FSM, the need to convert hydrologic performance measures to environmental outputs was discussed. At the 21 April 2004 IRC, the PDT requested an exemption to the HQUSACE policy of displaying outputs in habitat units based on the difficulty and uncertainty in measuring the magnitude and location of the outputs of an individual feature such as Site 1. The AFB material uses two storage parameters, the average annual volume of water retained in the natural system plus the volume of water stored in the impoundment, as surrogate metrics for the actual NER environmental outputs on an average annual basis. Plan formulation and selection would be based on these volume metrics and justification would be established based on a qualitative description of ecosystem benefits.

Subject to the resolution of other comments on the analysis, the District has provided an acceptable analysis. The AFB will provide an indication of whether this approach is acceptable to ASA(CW) and OMB. If this approach is not acceptable, it may be necessary to return to the regional approach (i.e., the WPA feasibility study) to formulate a regional plan at a scale for which the environmental effects can be measured.

Response. HQUSACE’s preliminary acceptance of the analytical approach utilized to evaluate environmental effects and ecosystem benefits is acknowledged. The initial recommendation to

formulate a regional plan at a scale for which environmental effects can be measured if ASA(CW) and OMB do not find the analytical approach to be acceptable is noted.

Discussion/Action Required. OASA(CW) participants in the AFB did not object to using volume of water retained in the natural system plus the volume of water stored in the impoundment, as surrogate metrics for the actual NER environmental outputs. However, it was noted that several environmental outputs of the project (e.g.; number and size of tree islands, utilization of WCA by wading birds, and reduction in cattails) can and will be measured. The OASA(CW) staff stated that environmental outputs should be measured where it is feasible to do so. As a basis for obtaining ASA(CW) and OMB approval, the District provided a paper that further illustrates the habitat evaluation methodology and describes the project benefits that can be quantified. The paper was provided to the OASA(CW) staff and the proposal was discussed during HQ and OASA(CW) review of draft CERP Guidance Memorandum Number 2 (Formulation and Evaluation of Alternatives).

The guidance received from OASA(CW) is that plan evaluation and selection based on hydrologic outputs alone is not acceptable. It is the OASA(CW)'s position that NER benefits should be used as the basis for plan comparison and plan selection, consistent with ER 1105-2-100. Possible metrics to describe NER outputs include, but are not limited to, habitat units, acres of increased spawning habitat, stream miles restored, increases in numbers of breeding birds, increases in target species, and diversity indices. The District's paper demonstrated that Site 1 project outputs can be quantified in habitat quality units for several ecological attributes. These outputs and any other appropriate NER output metrics should be used for plan evaluation and selection.

By memorandum, CESAJ-PD-R, 12 January 2005, subject: Site 1 Impoundment Project Implementation Report, 26 August 2004 Alternative Formulation Briefing, the District submitted supplemental information and revised responses to several comments. The memorandum included the proposed Section 6 of the draft PIR, which documented the cost effectiveness and incremental cost analysis of alternatives using both hydrologic units and ecological habitat units. Both analyses supported the selection of Alternative C.

The District will include in the draft PIR, the evaluation and selection of the tentatively selected plan using both hydrologic units and ecological habitat units.

Action Taken: The draft PIR Main Report includes Section 6.

HQUSACE Analysis. The concern is resolved by the text changes in Section 6.

c. Without-Project Conditions. [AFB Comment 3.] The without project assumption is that Site 1 project lands would be developed. Existing Site 1 land use includes low quality wetlands. The discussion of the without project condition for Site 1 needs to address whether there are any restrictions on development (e.g., section 404 of the Clean water Act).

Response. The PDT, along with RECOVER, has defined the future without-project condition by forecasting future conditions without the Site 1 Impoundment project in place. The future without-project condition assumes the 1,660 acres currently owned by the District in Palm Beach County would be disposed in accordance with the Framework Agreement governing lands acquired with 1996 Farm Bill funds and sold for development consistent with surrounding land use patterns (mixed residential and commercial use). Jurisdictional waters of the United States (wetlands) under Section 404 of the Clean Water Act were identified during field visits to the proposed project site. Most of these wetland areas exhibited degraded wetland functionality. Nevertheless, any proposals to discharge dredged or fill material into the wetlands at the site would require a Federal permit from the Corps of Engineers Regulatory Division and from the State of Florida's wetland regulatory agencies. Although proposed discharges would have to be in compliance with the Section 404(b)(1) guidelines and state laws and rules addressing activities in wetlands and surface waters in order for permits to be issued, a description of restrictions on development at the site would be purely speculative as the Regulatory program is not intended to predict or control land uses.

Discussion/Action Required. The District has established the reasonableness that all or some portion of the lands previously acquired for the project would be developed in the without project condition and that the specifics of such development would be determined via the permit process. The discussion presented in the District's response will be included in the draft PIR.

Action Taken. The language was added to Section 3.4.11 on page 3-26 of the Main Report.

HQUSACE Analysis. The concern is resolved by the text change in Section 3.4.11.

d. Period of Analysis. [AFB Comment 4.] Prior Headquarters comments on the FSM material noted that the planning period should be extended for a 50-year period of analysis from the base year by straight lining the 2050 information developed for CERP. Subsequently, Headquarters acknowledged that the guidance states that the POA shall not exceed 50 years (See ER 1105-2-100, paragraph 2-4.j) and that a POA of less than 50 years is permissible. The AFB material references future conditions in year 2050. The draft report should clearly indicate the project base year, the period of analysis used in the analysis and reasons for using a period of less than 50 years, and intermediate points used to evaluate the future conditions with and without a project.

Response. The draft report will be revised to indicate that the base year for the analysis undertaken for this project is 2004 and explain the relationship of the base year for this project to the base year established for prior hydrologic simulation modeling that was utilized for this project. The existing condition established for the hydrologic modeling used for evaluating project effects is labeled "95 Base" in the prior model runs, since those model runs and that version of the model were previously used in prior regional planning efforts, including the Comprehensive Review Study, the Lower East Coast Water Supply Plan, and the Water Preserve Areas Feasibility Study; however, the assumptions in the 95 Base model run are representative of 2004 conditions in the study area. 2050 was established as the future without project base year against which project effects would be measured in those prior planning efforts. Therefore, the

period of analysis (POA) for this project is 46 years. The effect of a 46-year POA (instead of a 50-year POA) on the average annual cost of the benefits produced by the project is acknowledged.

Discussion/Action Required. The District understands the impacts and risks of using a period of analysis less than 50 years. The base year is the year in which the project begins to accrue benefits. The District needs to revisit its statement that the base year is 2004. It appears that the period of analysis, which ends in 2050, will be somewhat less than 46 years. The draft PIR will present the correct project base year, the period of analysis and reasons for using a period of less than 50 years, and intermediate points used to evaluate the future conditions with and without a project.

Action Taken. The costs are expressed in 2004 price levels. The base year is 2010 and the period of analysis is 40 years as described in Section G.7 of Appendix G, Economic and Social Considerations. While the base year is not specifically stated, Section 7.2.11.5 of the Main Report describes the 40-year period of analysis. The Final PIR will state the base year of 2010 as well as the 40-year period of analysis and the reasons for this selection. A 40-year period of analysis was used in all average annual cost estimates.

HQUSACE Analysis. The concern is resolved, although not fully responsive, the proposed action to state the 2010 base year for the Final PIR is adequate to resolve the concern.

FRC Response. Further analysis has shown that the construction will end towards the end of fiscal year 2009 (Section 7.4.2). Benefits will start being accrued in 2010. From the base year of 2010 to the end of the project in 2050, a 41 year period of analysis was used. This information has been added to Section 6.1.4.1.

FRC Discussion/Action Required. The supplemental information on NAI justification of the project demonstrated the District is using the appropriate base year and period of analysis. **The concern is resolved.**

e. **Water Quality.** [AFB Comment 5.] (a). Para 2.2.5.2. describes existing WQ for the Hillsboro Canal, but does not indicate whether it meets State standards. (b). Para 3.3.8. states that water quality in the study area occasionally does not meet State standards for certain parameters. The District needs to describe the actions expected to be taken by non-Feds to achieve compliance under the without project condition.

Response (a). The parameters of concern (POCs) for both source and receiving waters in the study area are either the major nutrient parameters—Total Phosphorus (TP) and Total Nitrogen (TN)—or indicators that are nutrient-related—chlorophyll and dissolved oxygen (DO). Because of these relationships, the project team determined that TP and TN levels are metrics most representative of the quality of waters likely to be impacted by project features. Currently, however, there are no State numerical criteria for phosphorus and nitrogen.

In a nutshell, until the State of Florida (FDEP) adopts Class III quantitative criteria values for TP and TN, and/or similar TMDL limits are determined for chlorophyll and DO (canal-specific), the actual degree of compliance (or non-compliance) of POCs with State regulations cannot be clearly determined. As a result, no declarations of non-compliance with regards to the above-mentioned project POCs will be made by the State until respective numerical criteria are established. As indicated in the report narrative, the occurrences of undesirable levels of some constituents--i.e., conductivity, turbidity, DO, and TP—with regards to State water quality criteria were identified. However, it should be noted that where the phrase “occasionally do not comply” is used in the referenced narrative, the term “exceed” should have been used in place of the “do not comply” portion. The essential point to be made is that occasional exceedances of water quality criteria do not necessarily constitute violations of state water quality standards. Additionally worthy of note is that the referenced exceedances were mentioned without respect to background levels in the study area, with which these parameters were often consistent. Specifically for the Hillsboro Canal, background and post-project freshwater quality monitoring just west of G56 for TN and TP data will be utilized to gauge the effects of project features on canal water quality.

Response (b). The State of Florida administers (on behalf of the EPA) an impaired waters program known as the 303(d) Impaired Waters rule. Project waters that have been identified as being impaired lie within the Hillsborough Canal. Waters within this conveyance are listed as being impaired with regard to chlorophyll (threshold for nutrient impairment) and DO. Upon formal acceptance of this designation, the 303(d) program requires that total maximum daily load (TMDL) values be established for the listed parameters. Point and non-point run-off controls will then be devised by State agencies to achieve the prescribed pollutant load limits. In the meantime, however, CERP policy requires that no water quality degradation take place with regards to the identified parameters of concern. This concept is consistent with the direction provided in the CERP Guidance Memorandum for Water Quality (CGM 23.01), which requires that the project avoid the exceedance of water quality constraints, or the degradation of receiving waters or the restoration objective water body. The requirement is consistent with the State of Florida’s Outstanding Florida Waters (OFW) non-degradation policy that mandates the protection of existing good water quality in specially designated water bodies. The Loxahatchee National Wildlife Refuge (LNWR) is a designated OFW. According to the State’s inter-agency Water Quality Task Force, "Water delivered to Loxahatchee National Wildlife Refuge and the other WCAs is in compliance with the Refuge's Outstanding Florida Water designation and is in compliance with the terms of the 1991 Settlement Agreement and the 1992 Court Order."

Discussion/Action Required. The assumption for planning should be that the project complies with State water quality standards. Team members agree, as the project is not intended to improve water quality (unless it is an incidental benefit). It was noted that Site 1 Impoundment is a Category C project per CERP Guidance Memorandum (CGM): 023.01: *Water Quality Considerations for the PIR Phase*.

The draft PIR will include information on the existing and future without project conditions water quality in the Hillsboro Canal, the applicable State water quality standards, the effects of the Site 1 project on water quality, and demonstrate that the project complies with the State standards.

Action Taken. Section 3.4.6 on page 3-11 contains the existing water quality. Section 5.3.6 on page 5-10 contains the evaluation of our plan with respect to water quality.

HQUSACE Analysis. The concern is not resolved. The 3rd paragraph of Section 3.4.4. states relative to the North Spring Improvement District drainage "In the future, the pumping of stormwater to WCA-2A will be directed to the north to the Hillsboro Canal or east to Broward County's Water Control District's system." The next to last paragraph of Section 5.6.3. states, "WCA-2A would primarily be affected by the discontinued practice of discharging NSID water into the area, a condition also in the No Action Alternative". It is assumed that NSID drainage will be directed away from WCA-2A under the without project condition to comply with the water quality requirements of the Everglades Forever Act. However, the reason for this action is not clearly explained and needs to be addressed prior to preparation of the final report.

FRC Response. The assertion that NSID waters will likely not be discharged to WCA-2A in the near future is based on the fact that the Everglades Forever Act restricts the release of "degradable" flows into all areas of the Everglades Protected Area after December 31, 2006. The NSID will have the option to treat water and continue discharging to WCA-2A, discharge to tide when there is capacity and downstream impacts will not occur, or otherwise find another area for storage. As such, the Site 1 Impoundment could provide some relief to excess water going into WCA-2A from NSID by increasing the capacity of the canal as well as taking some flows from NSID when the Impoundment has capacity. The report has been edited to explain the legislative basis of required rerouting and/or treatment of flows from the NSID.

FRC Discussion/Action Required. At the FRC, HQ asked for an explanation of the future without project condition for North Springs Improvement District (NSID). The District has provided options that might occur, but needs to identify the most reasonable future without project condition. HQ expressed concern whether the Corps project is relieving the State of some Water Quality responsibility. The District explained that the most likely future without project condition is that NSID will discharge to tide through the Hillsboro canal. This condition makes the water available for use by the Site 1 project. It was noted that NSID plans to perform some water quality attenuation in its basin and that any discharges to WCA-2A will very small with respect to the total water budget.

To resolve this issue, the FPIR will describe the most likely future without condition for NSID and how it makes water from NSID available to the Site 1 project. In addition the discussion will include an explanation that there is not an environment "make-up" requirement similar to the Acme B project.

Action Taken in Final PIR. Section 3.4.4 of the Main Report has been modified with the following language.

Based on conversations with NSID personnel, the most likely future without condition for NSID would be for their runoff to be periodically diverted to the Hillsboro Canal along the L-36N Borrow Canal and out to tide through the G-56 as it currently does. In the past four years, NSID has pumped excess runoff to WCA-2A twice, at 696 ac-ft in 2002 and 354 ac-ft

in 2004. Since the quantity of excess runoff to WCA-2A is negligible and the timing happens during flooding events, the discharge of runoff from the NSID basin is not a desired source of water for the ridge and slough Everglades ecosystem, and diversion of the discharge would not require additional deliveries from the regional water management system to offset the diversion.

HQUSACE Analysis. **The concern is resolved** by inclusion of the language found in the *Action Taken in the Final PIR* in Section 3.4.4 of the FPIR/EA.

f. Impacts to Wetlands. [AFB Comment 6.] Section 2.3.3.1. states “The loss of function resulting from constructing an impoundment at this location should be offset by improvements in fish and wildlife habitat in Loxahatchee National Wildlife Refuge and WCA 2A.” This is the basis for the determination that the project requires no mitigation. Additional information is needed to support this claim.

Response. There are no specific wetland avoidance constraints within lands already acquired for this project. In Section 9.6 of the Yellow Book (entitled “Fish and Wildlife Mitigation”) there is the following statement: “During subsequent phases of this project, the construction features of the Comprehensive Plan will be designed to first avoid and then minimize unavoidable impacts to wetlands or other aquatic sites and natural upland habitats. Unavoidable impacts to these habitats are expected to be offset by the ecological improvement throughout the south Florida ecosystem that results from the overall restoration achieved by the Comprehensive Plan. Accordingly, separate compensatory mitigation features are not included in the recommended Plan for these impacts.”

There are numerous wetland “pockets” located throughout the site. Although these “pockets” could possibly be avoided, the construction of the impoundment would likely produce negative impacts to the hydrology of these areas. As such, total avoidance of the wetlands at the site is not practicable. Additionally, the fresh water wetlands within project lands are degraded and provide minimal functional habitat for fish and wildlife, the loss of function resulting from constructing an impoundment at this location should be offset by improvements in fish and wildlife habitat in the Loxahatchee National Wildlife Refuge and WCA 2A. Also, a review of the proposed project site indicated that there are no wetland compensatory mitigation sites on the site required under Section 404 of the Clean Water Act; therefore, no compensatory mitigation was proposed to offset the elimination of any Regulatory-derived mitigation areas.

Discussion/Action Required. The team needs to clarify the offset of wetland impacts. CESAJ stated that CERP is self-mitigating, as stated in the Restudy. The project does not include unique conditions; therefore, no mitigation is required for compliance with Section 404 permitting or with the Clean Water Act (CWA). CESAJ also noted that the team performed a wetland assessment on the project, which showed degraded wetlands. The poor quality of the wetlands and the impoundment’s habitat features (deep water refugia and littoral zones) would offset any loss.

HQ concurs that the loss of degraded wetlands at Site 1 is offset by the impoundment's habitat features and the improvements in fish and wildlife habitat in the Loxahatchee National Wildlife Refuge and WCA 2A. The draft PIR needs to discuss the "self-mitigating" philosophy of the CERP, explain why avoidance of the wetlands at Site 1 is not practicable, and explain how the loss of degraded wetlands at Site 1 is offset by the project's beneficial effects.

Action Taken. Section 2.3.3.4 on page 2-12 of the Main Report discusses the impacts to wetlands.

HQUSACE Analysis. The concern is not resolved. Section 5.6.3. of the draft PIR states that the Site 1 project would indirectly impact water quality in the WCA-2A resulting in increased volume of water and nutrient loading which would contribute to expansion of cattail habitat. Table 6.1-5 quantifies the project's negative effects on WCA-2A for cattails, tree islands, snail kites, and periphyton as a total loss of 3,549 habitat units. Section 7.2.15 states that mitigation for adverse environmental effects is not required and that the project results in improved fish and wildlife habitat in WCA-2A. It is also stated that the loss of habitat on project lands is offset by the increase in habitat in the affected area. The validity of these statements is not supported by the data which show that WCA-2A suffers a net loss in habitat due to the project. Additional information is needed to support the District's position that losses are offset and no mitigation is required.

FRC Response.

1. According to Section 9.6 of the Restudy, CERP projects are self-mitigating. This is due to the overall benefit to the Greater Everglades System in restoring wetlands and wildlife habitat quality, function, and spatial extent with implementation of CERP components verses the localized impacts of each project. However, during project planning, an effort would be made to avoid wetland impacts to every extent practicable. In addition, existing mitigation sites within a particular project site that had been developed as part of a regulatory action would need re-verification and possibly mitigation if these wetlands were to be compromised. This CERP philosophy will be added to the PIR text.
2. The Site 1 Impoundment would convert primarily wetland pasture to open water habitat. Wetland assessments of the site have determined the property to be of low wetland value and function. The impoundment is designed to have some wetland and wildlife features, such as a littoral shelf and deep-water fish refugia for wading bird foraging habitat. In addition, levee systems also provide habitat for terrestrial species. These, however, are not meant to offset wetland impacts, but are in following the spirit of the Environmental Operating Principles. The project site also borders WCA-1 and WCA-2A, both of which are designated wildlife management areas. The project site provides a useable buffer for these wildlife management areas from encroaching development, noise, traffic, and lighting. While in and of itself this does not add value to the function of the site for habitat, its physical position increases values of the habitat adjacent to it.
3. While on-site wetlands will be impacted, implementation of the project would increase the total value of wetland habitat in the adjacent natural system. The natural system

benefits, as measured in WCA-1 and WCA-2A, will experience a total increase in benefits of 65,011 Habitat Units. Section 5.6.3 indicates loading of nutrients will increase in WCA-2A as a result of the additional flows from WCA-1. This conclusion was based on loading rates taken from the model runs and measured as a point source into WCA-2A. However, it is important to distinguish that all increased flows into WCA-2A are discharged from WCA-1. The water in WCA-1 is mandated to meet 10ppb phosphorus (as of 2006), or is rain and native waters of the WCA-1, and therefore of higher quality than assumed for the analysis. In addition, by passing through the WCA-1 system, waters would be filtered prior to discharge into WCA-2A. These assumptions were not entirely considered in the analysis of effects to water quality, but significantly reduce the loading potential into WCA-2A. While the water entering the system will be of higher quality with the project implemented, the increase in water distribution is anticipated to cumulatively add nutrients to the system. The analysis will be updated: However, when more flows enter WCA-2A than it currently receives, even if they are of higher water quality, they bring additional constituents. This is why the team could only measure benefits to reducing the rate of cattail expansion. The alternative is to not add water to the system and allow dry-out events, which would further degrade native vegetation and favor invasive and exotic plant species colonization. Also note, implementation of the Site 1 Impoundment only changes flows into WCA-2A by 0.3%. Review of output from the model runs by the Interagency Modeling Center have determined this change of flow not to be significant enough to see impacts from water quality. These additional assumptions will be added to the text to clarify and qualify anticipated changes in water quality.

Table 6.1-5 displays the calculations of benefits to the project. As such, targets are set to quantify a range at which benefits are gained, not a point in which impacts accrue. The table reflects that more benefits are obtained without the project in WCA-2A. Negative numbers do not equate to impacts. The delta between benefits, i.e., meeting benefit targets, is not an impact to the environment. All alternatives achieved benefits. However, the delta, including the negative numbers for WCA-2A, represent that future without has more benefits to WCA-2A. The delta is the difference *between* benefits. The interagency team agreed to use all habitat units, including the negative numbers in WCA-2A, cumulatively to evaluate the project benefits. The system experiences a net increase in benefit. These sections will be rewritten to clarify. It is also important to note that benefit calculations were based on modeling scenarios in which the operational plans for the Site 1 Impoundment were not optimized. These optimizations include the regulatory flexibility to discharge WCA-1 water to tide instead of WCA-2A when WCA-2A has met ecological targets. This optimization is important in that high water stages with increases in flow to WCA-2A and the additional nutrients measured as a point source into the system was the assumptions driving the habitat evaluation and unit calculation for WCA-2A, when in fact, they would be different during actual operations as well as spread over the entirety of the WCA-2A.

4. A siting analysis was conducted in Section 4-2 that took wetland avoidance into consideration for screening alternative. Avoidance of wetlands on site is not practical. A majority of the site is classified as wetlands. There were no areas of less acreage or

quality that the impoundment could be planned around. Maximizing water storage achieves the benefits of the project. Impoundments have specific engineering considerations. An alternative could be to reduce the footprint of the site by making a smaller, deeper reservoir. However, to maintain storage, engineering and safety considerations, this alternative is impractical. Although wetland mitigation is not required, amount of project benefits, i.e., increase in habitat value and function, including wetlands, was 98.3%. This is a total loss of function of 1.7% in the WCA-2A with project implemented.

FRC Discussion / Action Required. The negative Habitat Units (HU) for impacts to WCA-2A are consistent with the calculations made in the Restudy. Adaptive Management (intelligent operation of the Site 1 impoundment) can make conditions better in WCA-2A than those that were modeled. The supplemental information on NAI analysis provided following the FRC addresses this issue.

To resolve the issue, the FPIR will include an explanation of the project's negative effects on WCA-2A, how conditions could be improved by adaptive management, and mitigation is not required because CERP is self-mitigating.

Action Taken in Final PIR. Paragraph 7.2.8 has been modified to the following language.

The Site 1 Impoundment project as modeled appears to create more water in WCA-2A when there are no demands causing excessive water conditions (stage and duration) to occur compared to the NSM. However, the model does not have the operational flexibility to incorporate typical water management operations that would be applied to prevent such occurrences with implementation of the project. The project's potential to meet more goals and objectives with monitoring and adaptive management measures remain realistically high. For example, when the LNWR or WCA-2A are above their respective regulation schedules, urban demands and prevention of saltwater intrusion may be met with unwanted water supply from the natural system versus releases from the impoundment. Thus, stored impoundment water would be "in the bank" for later use when advantageous to the natural system (i.e. when conservation areas are on or below targets). Also, the impoundment may be used to relieve the natural system of some excess water under infrequent conditions (prevalent local storms are irregular and spotty in rainfall amounts and location). Other future CERP projects will also help manage the system in an optimal manner that decreases potential occurrences of excess water in WCA-2A. The WCA-2B Flows to Everglades National Park (ENP) project is one that conveys excess water in WCA-2B directly to Northeast Shark River Slough replacing the historic circuitous course the River of Grass once made, but now obstructed by urbanization and the east coast protection levee. By transporting WCA-2B water away from its current dead-end southeast corner, water from WCA-2A may flow more freely into WCA-2B and southward as needed for the Northeast Shark River Slough and ENP. WCA-3 Decompartmentalization is another project that will ease excess water conditions in WCA-2A. A major outflow of WCA-2A is into WCA-3A via the S-11's water control structures (Figure 3.4-1). As historic-like sheetflow is reintroduced in the Everglades on a large scale with construction of the project, water demands for the southern Everglades will be met with additional water found and engineered

for the natural system with implementation of the CERP program. The Decompartmentalization project will have a large “beneficial” impact on the Everglades and is expected to require modification of the WCA-2 and WCA-3 regulation schedules (thus, may alter Site 1 impoundment current proposed operations given change in WCA-2A regulation schedule). Finally, if ASR is implemented as a supplementary function of Site 1 as originally recommended in the Restudy, more prompt drawdowns of impoundment stages will alleviate some of the water conditions that may have been created by impoundment storage at higher pools. The key to a successful Site 1 project implementation is the CERP program’s capacity to monitor in ground results and provide for adaptive managerial techniques to maximize all goals and objectives of the project and the regional CERP program.

Section 7.2.15 has been modified to the following language to address mitigation and adaptive assessment.

Mitigation for the proposed project will not be required. Per Section 9.6 (Fish and Wildlife Mitigation) of the Restudy, any unavoidable impacts to wetlands, other aquatic sites, or natural upland habitats are expected to be offset by the ecological improvement brought about through the Comprehensive Plan. A project siting analysis was conducted in Section 4 of this document, demonstrating that the proposed project site is the only practicable location for this project. Avoidance of wetland impacts onsite is not practicable when considering project design and engineering. Minimization of wetland impacts has been accomplished through locating the proposed project on a site with low quality wetlands. Wetlands on the proposed project site have been impacted by human-related activities and have been colonized by invasive species. There are no unique or scarce habitats at the site. Additionally, there are no wetland compensatory mitigation areas onsite. As such, per the Restudy, no mitigation has been proposed as a part of the Site 1 Impoundment.

Further, although some adverse effects may occur in WCA-2A as a result of the proposed project, any effects would be minimal and would be corrected through adaptive assessment activities conducted by RECOVER. The proposed project’s environmental lift in the LNWR would far outweigh any minimal adverse effect that may occur in WCA-2A. A more thorough discussion of adaptive assessment and other projects affecting WCA-2A is located in Section 7.2.8 of this PIR.

HQUSACE Analysis. The concern is partially resolved. Table 6.1-9 still indicates there is a loss of HUs for two very significant resources in the 2050 With Project Condition relative to both the Base-Year 0 condition and the 2050 Future Without Project Condition. This table needs to be structured and footnoted to let the reader know the net difference of the combined LNWR and WCA-2A 2050 With Project Condition relative to their combined values in the 2050 Future Without Project Condition is the important information. The net loss between Estuary Habitat in the 2050 With Project Condition and the 2050 Future Without Project Condition appears significant but is unexplained. Table 6.1-10 somewhat clarifies the significance of total net change of HUs, but it leaves out information about the critical habitat of the endangered snail kite and the estuaries.

Although the modifications found in Paragraphs 7.2.8 and 7.2.15 of the FPIR/EA resolves the respective concerns, these modifications are substantially different from the modifications provided by the district in the *Action Taken in the Final PIR*.

Both tables 6.1-9 and 6.1-10 must be clarified to fully resolve the concern.

CESAJ Response/Action Taken. Tables 6.1-9 and 6.1-10 as well as Tables 6.1-6 and 6.1-7 were modified with the appropriate footnotes for 1) Snail Kite and 2) Estuarine habitat.

1. The Snail Kites attribute was dropped from the system quantification since snail kite habitat is a redundant indicator for the increase in spatial extent and quality of fish and wildlife habitat in LNWR and WCA-2A and even if the habitat were improved, the nomadic characteristics of the snail kite may not populate the area.
2. Estuarine habitat was also dropped due to uncertainties of the results of the SFWMM in boundary condition and its effect on the habitat quantification. However, the project could still attain benefits to the estuaries through the adaptive management principles by controlling releases to tide which would benefit the estuary.

The text was also modified to include this modification.

Text was also added to the paragraph just in front of Tables 6.1-7 and 6.1-10 to help explain why the attributes could be additive within LNWR and WCA-2A.

To assess the ecological benefit of the project, the attributes selected to represent the spatial extent and quality of fish and wildlife habitat within LNWR and WCA-2A were cattail expansion rate reduction, tree islands, and periphyton abundance and diversity. The team determined that these attributes could be added, without double counting benefits, to determine the average annual habitat unit for both LNWR and WCA-2A.

The rest of the paragraphs describe why attributes of LNWR and WCA-2A were added to determine the system response.

Paragraph 7.2.8 was modified during a QAQC and the response should have been corrected. The response as stated in the Final PIR is:

The Site 1 Impoundment Project as modeled appears to create more water in WCA-2A when there are no downstream demands which results in occasional excessive water conditions (stage and duration) within WCA-2A compared to the NSM. However, the model code does not have the operational flexibility to incorporate typical actual water management operations that would be applied to prevent such occurrences with implementation of the project. Realistically, the project's potential to meet more goals and objectives with monitoring and adaptive management measures is high. For example, when stages in the LNWR or WCA-2A are above their respective regulation schedules, urban demands and water demands for prevention of saltwater intrusion may be met with the additional storage in LNWR and WCA-2A rather than calling for releases from the impoundment. Thus, water stored in the impoundment would be "in the bank" for later use when advantageous to the natural system (i.e. when conservation areas are at or below their stage targets).

Also, the impoundment may occasionally be used to relieve the natural system of excess water such as when localized intense thunderstorms increase stages in the natural areas. Other future CERP projects will also help provide flexibility to manage the system in an optimal manner that

decreases potential occurrences of excess water in WCA-2A. The WCA-2B Flows to Everglades National Park Project would convey excess water in WCA-2B directly to Northeast Shark River Slough replacing the historic circuitous course the River of Grass once made that is now obstructed by urbanization and the east coast protection levee. By transporting WCA-2B water away from its current dead-end southeast corner, water from WCA-2A may flow more freely into WCA-2B and southward as needed for the Northeast Shark River Slough and Everglades National Park.

The major outflow from WCA-2A into WCA-3A is via the existing S-11s water control structures (**Figure 3.4-1**). As sheetflow conditions are reintroduced in the Everglades on a large scale with implementation of other CERP projects, natural system water demands for the southern Everglades will be met with additional water secured for the natural system with implementation of the CERP program. The Decompartmentalization project will have a large beneficial impact on the Everglades and is expected to require modification of the WCA-2 and WCA-3 regulation schedules. Thus, implementation of Decompartmentalization may eventually require a revision of the Site 1 Impoundment operations scheme. Finally, if ASR is implemented as a supplementary function of Site 1 as originally recommended in the Restudy, more prompt drawdowns of impoundment stages will alleviate some of the water conditions that may have been created by impoundment storage at higher pools. The key to a successful Site 1 Impoundment Project implementation is the CERP program's capacity to monitor on-the-ground results and provide for adaptive managerial techniques to maximize all goals and objectives of the project and the regional CERP program.

Paragraph 7.2.15 was modified during a QAQC and the response should have been corrected. The response as stated in the Final PIR is:

Mitigation for the proposed project will not be required. Per Section 9.6 (Fish and Wildlife Mitigation) of the Restudy, any unavoidable impacts to wetlands, other aquatic sites, or natural upland habitats are expected to be offset by the ecological improvement brought about through the Comprehensive Plan. A project siting analysis was conducted in Section 4 of this document, demonstrating that the proposed project site is the only practicable location for this project. Avoidance of wetland impacts onsite is not practicable when considering project design and engineering. Minimization of wetland impacts has been accomplished through locating the proposed project on a site with low quality wetlands. Wetlands on the proposed project site have been impacted by human-related activities and have been colonized by invasive species. There are no unique or scarce habitats at the site. Additionally, there are no wetland compensatory mitigation areas onsite. As such, per the Restudy, no mitigation has been proposed as a part of the Site 1 Impoundment.

Further, although some minor adverse effects were modeled in WCA-2A associated with project implementation, any such effects would be minimal and would be prevented through regional operations and through adaptive assessment activities conducted by RECOVER. The simulated adverse effects are associated with increasing the net amount of water in the Everglades Ridge and Slough community. The proposed project's environmental lift in the LNWR would far outweigh any potential minimal adverse effect that may occur in WCA-2A; furthermore, additional water in WCA-2A is a timing issue in the modeling, and not an undesirable condition from a system-wide perspective, since one of the fundamental goals of CERP is to increase the

total quantity of water in the natural system. A more thorough discussion of adaptive assessment and other projects affecting WCA-2A is located in Section 7.2.8 of this PIR.

HQUSACE Analysis. The concern is resolved by the explanation provided and the cited modifications to tables and text.

g. Preliminary Screening of Results. [AFB Comment 7.] Statements that a plan or feature would be “cost prohibitive” need to be supported with data. Explain why the Restudy alternative had to be modified to include discharges from the North Springs Improvement District into WCA 2A.

Response. Canal improvements to the Hillsboro canal are included as a project feature to capture additional water east of the impoundment site. This hydraulic function (backpumping of runoff in the Hillsboro Canal basin) became more important for the Site 1 Impoundment project during the WPA Feasibility Study when the Ag Reserve Impoundment was reduced in size and was capturing less water (thereby reducing that project’s potential contribution to water supply in the study area). North Springs Improvement District water was also routed to Site 1 because it also represents an additional source of urban runoff that is presently discharged to WCA-2A, usually when additional water is not needed in that area. By diverting this water to the Site 1 Impoundment, this additional water is captured and used for urban water supply demands. It should also be noted that high water levels in WCA-2A affect WCA-2B to the south, and WCA-2B not rated as restored as a result of CERP implementation during the Comprehensive Review Study due to undesirable depths and durations of higher than desired water levels in that area.

The North Springs Improvement District (NSID) Basin has an area of 7,422 acres and is located in western Broward County. The NSID Basin is a hydrologic tributary basin to the Everglades Protection Area (EPA) by virtue of the capability to pump excess runoff from the basin to Water Conservation Area 2A (WCA 2A). The NSID operates two pump stations to remove excess runoff from the basin for flood control purposes. Excess runoff from the basin can be pumped to either the L-36N canal, the L-36S canal, or WCA 2A by way of Pump Station No. 1, or to the L-36N canal by way of Pump Station No. 2.

Drainage from the NSID Basin is managed in a network of interconnected lakes and canals that are operated by the NSID to provide flood protection throughout the basin. Two pumping stations, NSID Pump Station No. 1 and NSID Pump Station No. 2, are used to discharge stormwater north through the L-36 Borrow Canal (L-36N) and then into the Hillsboro Canal through a series of culverts (S-39A). The Hillsboro Canal conveys stormwater to the east, eventually discharging excess flow to tide. However, when the L-36N Canal and the Hillsboro Canal are not capable of accepting additional flow, water from the NSID Basin is currently discharged into WCA-2A through NSID Pump Station No. 1.

The amount of water diverted from the EPA by sending it to Site 1 is an estimated average annual of 6,800 ac.-ft.

Discussion/Action Required. The North Springs Improvement District is located just south of the Site 1 Impoundment project area. Discharges from the North Springs Improvement District would be included in the project because the water is needed, can be stored, and would help offset demands from the natural system.

The District's response does not address the part of the comment concerning statements that a plan or feature would be “cost prohibitive” and needs to be supported with data. Such statements included in the draft PIR will be supported with data.

The draft PIR will also explain the modification of the Site 1 project to include discharges from the North Springs Improvement District (NSID). The current and future without project routing of the NSID discharge to tide and to WCA 2A will be explained to include any applicable water quality requirements that apply. Also, the impacts of diverting NSID runoff of 6,800 ac. ft. on an average annual basis from the WCA 2A to Site 1 needs to be addressed.

Action Taken. Cost prohibitive examples are supported with data and cost prohibitive was removed from the screening process. The reduction of NSID flows were not addressed on an average annual basis, but were accounted for in the evaluation of our plan with respect to water quality in Section 5.3.6 on page 5-13, and the habitat evaluation in Section 6.1.4.2.

HQUSACE Analysis. **The concern is resolved** by the text changes noted above.

h. Non-structural Measures. [AFB Comment 8.] At the FSM it was discussed that the study should address at least one non-structural alternative, since the Principles and Guidelines require that equal consideration be given to structural and non-structural measures (ER 1105-2-100, paragraph 2-3.c.(5)). The AFB material does not appear to provide such a discussion of non-structural alternatives. The Plan Formulation Appendix includes discussions of various measures and includes Changes in Lake Okeechobee Regulation Schedule, which would appear to be non-structural, however no discussion of the measure is included under the heading. This information should be provided in the draft report in accordance with the referenced guidance.

Response. The only non-structural alternative that could meet the objectives for the Site 1 Impoundment project (or any other storage area) would be a regulatory schedule that would increase the volume of water in Lake Okeechobee. However, increasing the volume would likely entail structural modifications to the Herbert Hoover Dike. In addition, the increased storage would be detrimental to the environment – specifically the lake’s littoral zone. The Governor’s Commission for a Sustainable South Florida report includes Lake Okeechobee operations as one of the concepts to be considered for the C&SF Project Comprehensive Review Study (Restudy). An excerpt from the Governor’s Commission’s 1996 report is provided below. Increased storage in the lake was considered, but was ultimately discarded due to detrimental environmental effects. Consequently, a more balanced regulatory schedule that would be favorable to fish and wildlife habitat functions in the lake in addition to maximizing water supply benefits was recommended. The WSE schedule that was adopted for Lake Okeechobee resulted in a slight decrease in volume of water stored in Lake Okeechobee.

Concept 2: Lake Okeechobee Operational Plan

Lake Okeechobee provides a critical source of water for the Everglades Agricultural Area (EAA), the urbanized areas of the lower east coast, portions of the lower west coast, the remaining portions of the historic Everglades system, and other wetland components of the South Florida ecosystem. Prior to manmade alterations, lake levels rose in response to rainfall and served as a valuable source of freshwater spilling into the Everglades during a relatively small number of high rainfall years. Today a lake regulation schedule triggers different management activities according to different lake levels. The current regulation schedule, known as Run 25, was developed for multiple purposes including water supply, flood control, navigation, and environmental protection. Since some of these goals conflict, achieving all of them under current conditions is impossible. Past efforts to meet all of these conflicting goals have resulted in damage to the lake's littoral zone and to the east and west coast estuaries. The Commission believes a new operational plan for the lake is needed that maximizes storage opportunities, protects the east and west coast estuaries, restores the ecological health of the lake, and enhances wildlife populations. The ability to accomplish these goals greatly depends on additional storage throughout the system and on other improvements to the overall C&SF Project.

Within the constraints imposed by these conflicts, the operational guidelines for Lake Okeechobee are currently being reviewed to attempt to optimize the natural resources within the lake, water discharges for the purpose of restoring the natural hydropattern of the Everglades, and flows to the estuaries without adversely impacting flood control or urban and agricultural water supply. Avoiding environmental harm to the St. Lucie and Caloosahatchee estuaries caused by massive lake releases is an important goal. Equally important is protection of the lake littoral zone from prolonged high water. Maximizing storage for environmental, agricultural and urban needs while protecting the lake and estuaries will require creative new operational schedules. This interim study of operational guidelines for the lake is being conducted in conjunction with SFWMD's Lower East Coast Regional Water Supply Plan. In addition, the SFWMD's Surface Water Improvement and Management Plan requires specific regulatory and non-regulatory activities to address water quality conditions, including ongoing development and testing of Best Management Practices to reduce pollutants and assure water quality compliance for discharges into the lake. Additional actions may be necessary since current nutrient loads to the lake remain above the established target. Nutrient levels contained in lake water would need to be lowered before it could be discharged into the Everglades. These ongoing efforts should serve to benefit the health of the lake through improved water quality and operational changes which are more desirable for the lake's littoral zone without compromising other project purposes such as flood control and water supply. To fully resolve these conflicting demands on the lake, additional storage areas throughout the system and methods to improve water quality are required.

Until additional storage options are available elsewhere in the system, temporary storage capacity in the lake could help meet projected demands for urban and agricultural water supply and natural system needs. Revisions to the operational plan for Lake Okeechobee

may allow additional water to be stored in the lake during wet periods and may help meet the projected demands during dry periods while maintaining ecologically desirable water fluctuations and lake levels. This could be accomplished by allowing periodic lower levels during droughts and higher water levels during wet periods, providing there is no significant adverse impact to the lake's littoral zone, or the east and west coast estuaries. A new operational plan needs to be identified that triggers management activities for high lake levels and "supply-side" management actions for low lake levels. Modified lake operations could increase the storage capacity of the lake, while reducing impacts to other parts of the regional system. All operational options that seek to increase lake storage capacity, while protecting the littoral zone and the east and west coast estuaries, must be carefully examined.

Lake Okeechobee's littoral zone provides important nursery grounds and habitat for fish and other aquatic organisms. It also supports large populations of wading birds and migratory waterfowl. The current location of the littoral zone is the result of the construction of the existing dike system, and the lowering of the lake level by drainage. Colonization by aquatic plants creates a littoral zone where fluctuating water levels are sufficient to support emergent vegetation. A diverse littoral zone cannot survive under periods of prolonged inundation. Timing of varying water levels and light penetration in the shallows are key factors in maintaining a viable littoral zone. The existing littoral zone was established when lake regulation levels fluctuated between 13.0 and 15.5 feet NVGD. In 1978, the regulation schedule was set at 15.5 to 17.5 feet to increase lake water storage. Assuring the continued health of the existing littoral zone is an important goal. All available information should be used to design a lake regulation schedule that preserves a healthy littoral zone, maximizes lake storage, and allows attenuation of floodwaters to protect the east and west coast estuaries. If it is determined to be feasible, raising the regulation schedule above the current limits may require costly structural changes such as raising existing levees, modifying or adding water control structures, constructing new pump stations, canals, and tie back levees. Also, State Road 78 may need to be raised and additional flood easements acquired. Recent high lake levels and the resulting dike seepage problems indicate levee repairs and improvements may be required even if the current regulation schedule is not raised. In addition, the Seminole Tribe's Brighton Reservation is located on the northwest side of Lake Okeechobee. As federal trust property, this reservation should be considered in any decision regarding modifications to the water levels of the lake. The Restudy must consider all of these aspects when evaluating the role that Lake Okeechobee will play in the future.

Discussion/Action Required. The Governor's Commission's 1996 report discusses issues associated with a change in Lake Okeechobee operations that should be considered for the C&SF Project Comprehensive Review Study (Restudy). The excerpt provided from the Commission's report does not indicate the findings of the Restudy for this alternative. The draft PIR will describe changes in Lake Okeechobee Regulation Schedule as a nonstructural alternative and summarize the Restudy's findings for the evaluation of this alternative.

Action Taken. The additional storage in Lake Okeechobee as a management measure (a non-structural measure) is discussed in Section 4.1.3. on page 4-5 of the Main Report.

HQUSACE Analysis. The concern is resolved by the text changes in Section 4.1.3.

i. NER Plan. [AFB Comment 9.] The scale variation between plans presented in the incremental analysis is limited, consisting of two alternatives, which are 6 and 8-foot variations in cell depths for the same 1,660-acre site footprint. HQ concurs that the 8-foot depth is the more cost effective of the two presented. It is not clear whether a slightly deeper configuration was considered and might be even more cost effective than the 8-foot depth. A 9-foot storage depth for the 1,660-acre footprint would provide about the same storage (14,940 acre-feet) as was previously authorized at Site 1 (2,460-acre site with a 6-foot depth=14,760 acre-feet). Since the cost increment between the 6 and 8-foot depths was relatively low, about \$800,000 for the 2-foot difference in levee height, could an additional foot of storage be added at reasonably low cost? A question remains as to whether it might be worthwhile to provide the originally authorized storage volume or whether there are engineering considerations such as seepage or avoidance of requirements for dam operations, which could impact the viability of the site with a minor depth increase. The text should address these points to support the plan formulation and designation of the NER plan, since the bracketing alternatives LI and SI for the overall scale of the impoundment were both eliminated prior to the incremental analysis. (See ER 1105-2-100, paragraph 2-3.f.(2)).

Response. There are engineering considerations associated with a 9 ft. impoundment that would require significant additional evaluation and analysis. They are:

- Seepage control to maintain level of service beyond the outside perimeter of the impoundment is a concern. The analysis needed is described in Appendix A - Section A.1.1.
- Approximately 9560 feet of the L-40 would potentially have to be raised by an additional foot. For the 8-foot deep impoundment, no modification to the existing C&SF L-40 Levee will be required if the crest height is 24.0 ft-NGVD or greater. The LIDAR data indicates that the L-40 is built at about 24.0 ft-NGVD. The actual height of L-40 will be surveyed during the next phase of design.

The additional foot of impoundment depth would likely have cost implications associated with seepage control configuration, structure costs due to a foot higher protection elevation, rip-rap cost, new levee construction height costs, and potential raising of L-40 levee. Avoidance of requirements for dam operation is not a factor for the 9-foot deep impoundment. Both the 6 and 8-foot deep impoundments would meet the requirements for dam operation.

During prior studies, the 8 ft. impoundment was identified as the most cost-effective (construction cost per unit of volume) depth for an above-ground impoundment at this location. Many of the potential cost increase factors that may occur for the additional one-foot depth cannot be adequately determined at this study phase without survey and geotechnical information and further engineering analysis, which is not within the scope of activities to be completed in the PIR phase of the project. Additional survey and geotechnical work will be completed in the detailed design phase prior to plans and specs development.

Discussion/Action Required. CESAJ stated there are engineering factors for why the impoundment cannot be deeper, including seepage control (deeper, more seepage). In addition, the height of the L-40 levee would have to be raised. The recommended plan includes tying into the existing L-40 levee without any additional modifications or costs.

It appears that there is at least one item of work - raising the L-40 levee - that is an incremental cost associated with the 9-foot levee height. Assuming that the costs and benefits of a project are fairly proportional to levee height, the increment of going from an 8-foot to a 9-foot high levee is probably not cost effective. The draft PIR should discuss consideration of the 9-foot levee height.

Action Taken. The difference in storage between the Restudy alternative, modified to the actual footprint (2246 ac. @ 6') and the recommended plan (1,660 ac. @ 8') is only 196 ac-ft, which the team feels is within the tolerances of the modeling capability. Therefore the 9-foot deep impoundment was not evaluated. The actual levee height for an 8-foot deep impoundment is 16 feet above ground or 26.0 NGVD. As stated above, the design survey of L-40 will be determined later and adjustments to levee height and risk will be evaluated. A levee height analysis is performed in Section A.8.9.10.4. and A.8.9.12. of Appendix A.

HQUSACE Analysis. The concern is resolved by the response.

j. Cost Effectiveness And Incremental Cost Analyses (CE/ICA). [AFB Comment 10.] CE/ICA are to be based on the average annual outputs of alternative plans in comparison to average annual costs, consistent with ER1105-2-100, paragraph E-36.c.(1). The AFB material presents an incremental analysis using the average annual storage and retention values in comparison to total first cost. No consideration is given in this analysis to the average annual cost including IDC and OMRR&R or to the timing of ecological outputs, some of which may take as much as 15-20 years to develop. At the AFB, the District should provide further information regarding the variation of NER outputs through the period of analysis and on an average annual basis in comparison to the average annual costs and confirm the results of the CE/ICA.

Response. Concur; information regarding the accrual of NER benefits through the period of analysis and on an average annual basis will be provided.

Discussion/Action Required. See comment 2. The supplemental information submitted by memorandum, CESAJ-PD-R, 12 January 2005, subject: Site 1 Impoundment Project Implementation Report, 26 August 2004 Alternative Formulation Briefing provides a revised CE/ICA analysis. The revised analysis does not appear to be based on average annual values through the period of analysis. The Section 6 text should better explain the basis for the habitat units shown in Tables 6.1-4 and 6.1-5. The numbers in Table 6.1-5 appear to be based on the NAI 2010 values. It isn't clear where the future without project values for Total HUs shown Table 6.1-6 come from, since they don't agree with the totals of the columns in Table 6.1-5. Further clarification may be provided in the appendix, but the text provided does not appear to

fully resolve the concerns on CE/ICA. These concerns will be addressed in the CE/ICA analysis that is included in the draft PIR.

Action Taken. Unfortunately, the preliminary guidance received from HQ on 26 January 2005 contradicts this discussion and therefore, was not included in the draft PIR. This will be included in the final PIR.

HQUSACE Analysis. The concern is not yet resolved. The district notes that the explanation of annualized habitat units and tables will be clarified in the final PIR, since the changes could not be made in time for the draft. The final report should include the requested information to resolve the concern. The District should provide the revised CE/ICA using annual values to HQ for approval before releasing the FPIR. Also provide HQ an explanation of how initial guidance provided on 26 JAN 05 contradicts the final guidance and resulted in this information not being available for the DPIR.

FRC Response. The report (Section 6.1.4) has been corrected to show how the hydrologic and ecologic average annual benefits were calculated over time and this value is shown in the CEICA analysis. A copy of the revised Sections 6.1.4, 6.2, 6.3.1 and 6.3.2 are attached to these comments.

The District initially started using hydrologic benefit units to select a plan as described at the AFB. Later, it was determined that the selected plan needs to describe some ecological benefits as well. The District prepared a white paper describing how this would be accomplished. Later, it was determined that the plan needs to show ecological benefits for the alternatives as well as just the hydrologic output. Therefore, the Site 1 report shows both the hydrological and ecological benefit analysis to pick a plan. Unfortunately time was critical and the average annual values for benefits were not used the draft PIR, but have been calculated for the final report in Section 6.3. The District was confused on verbal guidance on 26 Jan 05 that the CEICA was “good enough and good to go.”

FRC Discussion/ Action Required. The attachment to the District’s FRC responses partially addresses the concern. Prior to submission of the FPIR the following information needs to be provided to HQ for review and approval:

- 1) Table 6.1-3, under the FWO column, NAI and LAI will be removed
- 2) An explanation of the relationship between Tables 6.1-2 and 6.1-3
- 3) Clarify last sentence of the first paragraph below Table 6.1-4 with respect to reference to Alternative C producing 16.4 percent of the benefits in 2010.
- 4) Table 6.1-4 will identify Average Annual for NAI and LAI for each alternative. This display is needed for justification purposes.
- 5) Show NAI and LAI in all figures.
- 6) Text in PIR will describe content in Appendix C related to HU indices change over time.
- 7) The last line of Table 6.1-5 contains the phrase “Not Calculated”. This will be removed and replaced with zero (0). The figures that relate to cattail expansion will have an explanation added that describes the metric as Expansion Reduction Rate. NAI will also be added to the CE/ICA graphs.

8) Document project justification based on NAI benefits.

The requested supplemental information was provided via reference d. and later revised and transmitted by e-mail on 5 August 2005. The supplemental information provided satisfactorily addresses HQ concerns.

To resolve this issue, the information provided by the District following the FRC will be included in the FPIR.

Action Taken in Final PIR. The supplemental information has been incorporated in Section 6 of the Main Report.

HQUSACE Analysis: The concern is resolved by the response and text changes included in Section 6 of the final PIR.

k. Hydrologic Function Results. [AFB Comment 11.] The hydrologic function results for the future without-project conditions and two alternatives are presented in Table 6.1 with results listed for two columns labeled as NAI and LAI. There is no explanation of what those headings represent, however the LAI values are used for the incremental analysis. Further explanation should be provided for clarity of the presentation.

Response. NAI stands for “Next Added Increment” and LAI stands for “Last Added Increment”. These labels will be identified in future project documents. The last-added incremental analysis is used to evaluate the effect of project alternatives on the system-wide goals and objectives for CERP. According to Section 385.26(b)(3) of the CERP Programmatic Regulation (33 CFR Part 385), “(t)he alternative plan to be selected should be the plan that maximizes net benefits, both monetary and non-monetary, on a system wide basis, provided that this plan is justified on a next-added incremental basis.” The last added incremental analysis (with all of the other components of the comprehensive plan assumed to be in place) is the means for identifying how well project plans perform compared to the performance of the comprehensive plan. The next added incremental analysis is used for project justification (i.e., how much of the benefits attributable to the project will be realized upon project implementation if the rest of the CERP projects were not constructed and operating.)

Discussion/Action Required. The terms “Next Added Increment” (NAI) and “Last Added Increment” (LAI) will be explained in the draft PIR.

Action Taken. The terms “Next Added Increment” and “Last Added Increment” were described in the Summary on page x as well as in Section 6 of the Main Report. Next added Increment and Last Added Increment are also described in Section 7.2.13. on page 7-16 of the Main Report.

HQUSACE Analysis. The concern is resolved by the text changes noted above.

l. Trade Offs. [AFB Comment 12.] It was noted during the FSM briefing that the operation of the impoundment project could have a more significant effect on the resulting NER and NED outputs than the design. The water "created" or at least made more useable because it is not lost to tide by the Site 1 facilities can facilitate creation and realization of NER (ecological) values by reducing M&I dependence upon existing sources of supply (i.e., natural system) and it can have NED (economic value) by increasing the amount of water available for M&I use during low flow periods. The realization of such values/benefits may be more driven by how the facility is operated at different times and how water deliveries from current sources are apportioned during those low flow periods, than on the actual size of the facilities created for site 1. The operational considerations should be discussed in the formulation and evaluation of alternative plans. (clarify what sources of water are available to what users at various times) Those decisions may impact the incidence and realization of NED and NER benefits. The AFB main text provides no clarification on Site 1 operations and the discussions of operational considerations in Appendix H do not appear to clarify how the operations affect the NER outputs and NED benefits. The text should address whether any trade offs are involved and whether there is any basis for designation of a combined NED/NER plan based on operational considerations. (See ER 1105-2-100, paragraphs 2-3.f.(3), 2-4.f .

Response. The Site 1 Impoundment project is a restoration project. As such, plans were formulated and evaluated based on their ecosystem restoration (NER) outputs only. To the extent that providing additional storage in the study area augmenting the regional water management system produces economic benefits, those will be quantified. However, "trading off" of NER benefits in order to increase NED benefits has not been considered by the project delivery team. Such an action would constitute changing the purpose of the project. The text of the operation plan (Appendix H) will be modified to clarify this point.

Discussion/Action Required. The Site 1 project is being formulated for NER benefits. Project formulation will not consider tradeoffs between NER and NED benefits. NED benefits are considered incidental and will be quantified. The text of the operation plan (Appendix H) will be modified to clarify this point.

Action Taken. NED benefits were quantified and displayed in Section 6.1.5 on page 6-10 of the Main Report. The Draft Operating Manual in Annex D incorporates the distinction between ecosystem restoration and other NED benefits and will be carried out throughout the Operating Manual life.

HQUSACE Analysis. The concern is resolved by the text changes noted above.

m. Next Added Incremental Analysis. [AFB Comment 13.] Section 7.1.2. states that 45 percent of the benefits of the Site 1 project will be realized upon its implementation and that the remaining benefits of the project are dependent on implementation of other CERP projects. The specific CERP projects upon which Site 1 benefits depend, their costs, and implementation timing needs to be presented. Further explanation is needed as to what factors account for the difference and the magnitude of the difference. Justification is needed as to why the Site 1 project should be implemented at this time (Section 7.2.9).

Response. The other CERP projects necessary to obtain one hundred percent of the benefits within the study area likely include the Hillsboro ASR project, WCA-2B Flows to ENP, and Loxahatchee National Wildlife Refuge Internal Water Control Structures. The major regional storage reservoirs (EAA, North of Lake Okeechobee Storage, C-44, and C-43) and Lake Okeechobee ASR also would likely contribute towards achieving one hundred percent of the benefits. However, the CERP consists of 68 separate components that interact synergistically to produce restoration benefits throughout the Greater Everglades ecosystem. Since an analysis of each individual component's contribution toward achieving all of the benefits obtained with CERP was not performed during the Comprehensive Review Study, it is difficult to state with certainty exactly which projects are necessary to obtain all of the benefits. As discussed at the AFB, additional information about the ecosystem response to project implementation will be presented to SAD and HQUSACE in support of project justification (see response to comment no. 10).

Discussion/Action Required. As presented in the AFB material, next added increment project benefits are 45 percent of the benefits produced by the project with the rest of CERP. This is because the other CERP projects make more water available and result in filling the reservoir more often. Full realization of Site 1 benefits requires implementation of many CERP projects over a long period of time and at a considerable cost. To the extent possible, the draft PIR will identify the other CERP projects on which the benefits of Site 1 are dependent and the estimated cost and timing of those other CERP projects. HQ emphasized that the draft PIR needs to establish justification for the Site 1 project based on next-added benefits to the 282,650 acres of natural system affected by the project and provide support for the proposed timing of project implementation. HQ stated there would be a lag time in realizing the environmental benefits; however, the "jump-start" of these benefits is important. There was also discussion of how the project is packaged. The OASA(CW) stated that as long as the project shows outputs as habitat units, there is no need to package it any differently. However, CESAD stated that if there is another way to achieve greater benefits in the region, the packaging should be recommended before OMB's review. The OASA(CW) noted that the bigger the project, the more difficult to get approval. The project needs to be the perfect balance (not too big and not too small). It was noted that Site 1 Impoundment is not the smallest of the WPA projects. It was also noted that the WPA projects started together in the WPA Feasibility Study, which did not work; therefore, the WPA projects were separated into nine different PIRs.

Action Taken. The project justification Section 7.2.13. has been expanded to include both hydrologic function results as well as habitat units.

HQUSACE Analysis. The concern is resolved by the text changes noted above.

n. Interest During Construction (IDC). [AFB Comment 14.] The main text of the AFB material does not provide an estimate of the project investment costs although the text heading is included as section 7.2.7.2. There is IDC information in the Economic Appendix (Tab 17, Appendix G). The IDC represents direct NED costs, which should be presented in the main report text and included in the analysis of alternatives per paragraph 2-4.k.(1) of ER 1105-2-100.

Response. Concur; IDC will be added to the real estate and construction costs in future cost estimates and comparisons of alternative plans.

Discussion/Action Required. Project investment costs, including IDC, will be presented in the draft PIR.

Action Taken. Project investment costs, including IDC are presented in Table 7.2-3 on page 7-15.

HQUSACE Analysis. The concern is resolved by the changes to Table 7.2-3.

o. NED Costs. [AFB Comment 15.] (a). Tab 13, Appendix B on the status of MCACES costs shows a slightly different value for total cost of Alternative 1 than that used in the incremental analysis. This value should be reconciled for consistency with the rest of the text. (b). In addition the spelling of MCACES should be shown consistently in Appendix B. (c). It is also noted that the MCACES estimate applies a contingency to the real estate costs, resulting in a total LERRD cost of \$8,385,600. Application of a contingency to the purchase price does not seem appropriate, since the land has already been purchased and the actual price is used in the project costs. (d). The complete NED costs should be included in the formulation analysis. See paragraph 2-4.k of ER 1105-2-100.

Response (a). Concur; costs will be consistently displayed throughout the report.

Response (b). Concur.

Response (c). Concur; the real estate contingency will be removed from the cost estimates.

Response (d). Concur; complete costs, including IDC and project monitoring costs will be included in the draft PIR (see response to comment no. 17). However, since IDC, project monitoring costs, and real estate contingency costs will be the same for all alternative plans, the project delivery team does not believe that that information will change the results of the formulation analysis.

Discussion/Action Required. The draft PIR will present the proper NED costs in accordance with the comment.

Action Taken. Costs are consistent within the report. Spelling of MCACES has been corrected in Appendix B. The real estate contingency has been removed and the final cost for real estate is \$8,364,000. NED costs were used in the analysis.

HQUSACE Analysis. The concern is resolved by the text changes noted.

p. Incidental Project Effects. [AFB Comment 16.] Section 7.2.10. discusses water supply benefits but leaves the estimate of average annual economic effects blank. Tab 17, Appendix G, section G.3.4.5. states that average annual water supply benefits are \$12,300. This information should have been presented in section 7.2.10 of the AFB material and needs to be in draft report.

Response. Concur; the incidental economic effects will be included in the main volume of the draft PIR. The project delivery team is currently undertaking additional work to evaluate the effect of the project on the frequency and duration of water shortages in study area. This information will be included in the main volume of the draft PIR.

Discussion/Action Required. A current analysis of incidental NED benefits will be included in an appendix and summarized in the main volume of the draft PIR.

Action Taken. NED benefits were calculated in Appendix G- Economic and Social Considerations and Appendix H- Recreation and displayed in Section 6.1.5 on page 6-10 of the Main Report.

HQUSACE Analysis. **The concern is resolved** by the additional information provided in the text.

q. Average Annual Costs. [AFB Comment 17.] The AFB text provides no information on the average annual project costs, although a heading is shown in the text (7.2.7.4). Average annual cost data are presented in Tab 17, Appendix G. Complete average annual cost data should be displayed in the main body of the draft report including project construction, IDC, adaptive management and monitoring, and OMRR&R.

Response. IDC cost has been calculated and will be included in future calculations of average annual and total project costs. As of the AFB, the project monitoring plan had not yet been completed. Project-related monitoring and assessment activities are not expected to be significant. Upon completion, the cost for project monitoring will be included with the other project costs and displayed in the appropriate sections of the main volume of the draft PIR.

Discussion/Action Required. Complete average annual cost data will be displayed in the main body of the draft PIR including project construction, IDC, adaptive management and monitoring, and OMRR&R.

Action Taken. Average annual costs are displayed in Table 7.2-3 on page 7-15 and described in Section 7.2-11 on page 7-13.

HQUSACE Analysis. **The concern is resolved** by the additional cost information in Section 7.

r. Maximum Project Cost. [AFB Comment 18.] Total project costs are shown as \$48,951,000 in Table 7.2 and as \$40,491,000 in section 7.4.3. The M-CACES cost (Tab 13) is the larger number. If the larger number is the current estimated cost, it appears that the current project cost

is close to the maximum cost allowed by Section 902 of WRDA 1986. The District should provide a current Project Cost Increase Fact Sheet (Exhibit G-8, ER 1105-2-100) to verify that the maximum cost has not been exceeded.

Response. Concur; the requested fact sheet is included.

Discussion/Action Required. A Project Cost Increase Fact Sheet was included in the supplemental information submitted by memorandum, CESAJ-PD-R, 12 January 2005, subject: Site 1 Impoundment Project Implementation Report, 26 August 2004 Alternative Formulation Briefing. The fact-sheet shows that the current estimated cost is close, but is less than the Section 902 maximum cost. The District will need to monitor the current project cost and alert CESAD and HQ if the Section 902 maximum cost is projected to be exceeded.

Action Taken. Monitoring Section 902 maximum cost.

HQUSACE Analysis. The concern is resolved. SAJ will monitor the cost and advise higher authority of any Section 902 concerns.

FRC Response. The revised project cost is \$56,732,000 and still within the Section 902 limit.

FRC Discussion/Action Required. The concern is resolved at this point in time. Costs must continue to be monitored for compliance with Section 902. (Note that further cost increases have been incurred as the PIR was finalized and authorization of a higher project cost is now required)

s. **Cost Sharing.** [AFB Comment 19.] The AFB material does not address the cost sharing for the tentatively recommended plan. It is assumed the NER plan will be cost shared 50%/50% per WRDA 2000, but the crediting should be discussed and displayed to assure that it is consistent with the requirements of Section 390 (Farm Bill). At the AFB, the District needs to present the legal and policy requirements of the Section 390 program and present the crediting and cost sharing for the project.

Response. On April 4, 1996, Congress enacted the FEDERAL AGRICULTURE IMPROVEMENT AND REFORM ACT OF 1996 (P.L. 104-127), a.k.a, 1996 Farm Bill. Section 390 of the Farm Bill entitled EVERGLADES ECOSYSTEM RESTORATION allowed the U. S. Department of the Interior to expend \$200 million for Everglades Restoration activities, including acquisition of real property and interests in real property located within the Everglades ecosystem. Interior could transfer funds to the Corps, the State, or the SFWMD. On October 3, 1996, the Framework Agreement was signed between the Department of the Interior, (DOI, signed by Assistant Secretary for Fish and Wildlife and Parks); the U. S. Department of the Army (DA, signed by Assistant Secretary of Army Civil Works); the State of Florida, Department of Environmental Protection (DEP, signed by Secretary Department of Environmental Protection) and the South Florida Water Management District (SFWMD, signed by the Chair of the Governing Board). The agreement relates to lands purchased with Farm Bill funds provided by DOI to either DEP or SFWMD through Federal Grants (Section 390 of the Federal Agriculture Improvement and Reform Act of 1996, P.L. 104-127). Article I provides:

that DOI may provide funds to DEP and SFWMD to acquire real property or to construct facilities that are intended to become part of existing or future Corps projects; that Section 390 funds (except as provided by law or agreed to by DOI) will be matched by non-federal funds on a dollar by dollar basis; that Section 390 funds disbursed for acquisition of property or construction of features shall count as federal funds for cost sharing purposes for Army projects; that Non-federal funds shall be treated as non-federal share for cost sharing Army projects; and that the value of real property acquired pursuant to this article shall be acquisition cost of such real property for credit purposes under applicable cost sharing principles. For the Site 1 Impoundment project, the Section 390 funds were provided to the SFWMD by the DOI through a grant agreement. While the land and actual acquisition cost of the approximately 1600 acres of land are on the Federal side of grant agreement ledger, it is the position of both DOI and SFWMD that the intent of the grant agreement was that all lands acquired under the agreement with Section 390 funds were to be treated as having been acquired with 50% federal and 50% non-federal funds. Therefore for the real estate cost of \$8,349,500, \$4,174,750 will count toward the Federal share and \$4,174,750 will count toward the non-Federal share of total project costs.

Discussion/Action Required. The draft PIR will include a summary of the terms and conditions applicable to the Site 1 project for land acquisition utilizing funds under Section 390 of the Farm Bill of 1996, to include project cost sharing and crediting.

Action Taken. Language was added in Section 7.2.3 on page 7.6 of the Main Report and Section D.24 of Appendix D – Draft Real Estate Plan on page D-18

HQUSACE Analysis. The concern is not resolved. There must be a discussion of Section 601 (e)(3)(A)&(B). This statutory provision would seem to prohibit the NFS from taking any credit for land purchased using federal funds other than Department of Agriculture funds and then only in certain circumstances and with a specific exclusion of Section 390 funds. An agreement with DoI would not override statutory language. Counsel must specifically address this.

The text has been modified to explain that the Farm Bill grant agreement between DOI and the SWFWD for the transaction involving these project lands specified that they should be treated as having been provided at 50% Federal and 50% local cost. However, it is not clear whether the grant agreement language is consistent with the framework agreement. The first item could be interpreted to allow DOI flexibility with regard to matching funds dollar for dollar, but that may be a different consideration from the crediting against the Federal and non-Federal shares. Counsel and/or Real Estate must provide written assurance regarding the acceptability of the described cost sharing practice of treating the land costs as having been provided at 50%/50% expense rather than crediting the Federal and non-Federal costs to the respective shares in accordance with the framework agreement.

Action Taken. The District will add a discussion of Section 601 (e)(3)(A)&(B), but it is the position of the District that the Real Estate acquisition costs (purchase price and incidental costs covered under the DOI Grant) for the Site 1 Impoundment are to be split 50% for the following reasons.

Section 390 of the FEDERAL AGRICULTURE IMPROVEMENT AND REFORM ACT OF 1996 (P.L. 104-127), a.k.a, 1996 Farm Bill allowed the U.S. Department of the Interior to expend \$200 million for Everglades Restoration activities, including acquisition of real property and interests in real property located within the Everglades ecosystem. There was not requirement that these funds be cost shared by the SFWMD or the State. In the Framework Agreement, the parties agreed to use Section 390 funds to acquire real property or construct features that are intended to become part of existing or future Army Corps of Engineers projects authorized by Congress. The parties also agreed that except as otherwise provided by law or agreed to by the Secretary of Interior, that all Section 390 funds expended pursuant to this Article will be matched by non-federal funds on a dollar-for-dollar basis. It was also agreed that the respective federal and non-federal share of costs of such authorized Army COE projects shall be as set forth in law and that Section 390 funds used for the acquisition of real property or construction of features shall count as federal funds for cost-sharing purposes for Army projects. Funds provided by non-federal parties to match federal funds provided under Section 390 will be treated as non-federal funds for cost sharing purposes for Army projects.

The Grant Agreement between DOI and SFWMD (Grant No.FB1) recognized that since April 1995, SFWMD had acquired 34 parcels totaling 2,134.39 acres (which included the Site 1 lands as well as lands in the Broward WPA projects) at a cost of over \$20 million of non-federal funds and rather than providing 50% non-federal cost share on a dollar for dollar basis, the parties agreed that the purchase price and associated acquisition costs of those 34 parcels would be treated as the State matching portion (50%) of the anticipated costs of acquiring an additional 2,206 acres.

Section 601 (e)(3)(A) of WRDA 2000 provides that SFWMD may use federal funds for land acquisition if these funds are credited toward the Federal Share of the cost of the project. Section 601 (e)(3)(B) of WRDA 2000 provides that federal funds provided under Section 390 (Farm Bill) funds cannot be credited toward the non-federal share.

The provisions of Section 390 of the Farm Bill, the Framework Agreement, the DOI Grant Agreement and Section 601 (e)(3)(A) & (B) of WRDA 2000 are not inconsistent.

FRC Discussion/ Action Required. It is still not clear to HQ that cost sharing is complying with the law. Even though the Framework agreement and Grant specifies a dollar for dollar (50/50) share of Real Estate, the Site 1 project cost sharing shows all the cost on the Federal side of the ledger. With regard to CERP, Headquarters noted that WRDA 2000 provides for carry – over credits between projects and asked if this would apply if Federal and non-Federal contributions for lands on an individual project were not 50/50.

SAJ will draft a legal opinion that explains and establishes the legal basis for the method of accounting for land purchases at Site 1. The District will forward the legal opinion to SAD, HQ and the SFWMD for review and approval prior to release of the FPIR.

The District's legal opinion was received by e-mail on 24 June 2005 and approved by HQ via e-mail on 12 July 2005. To resolve this concern, the information presented in the District's legal opinion will be included in the FPIR.

Action Taken in Final PIR. Information presented in District legal opinion was included in Section 7.2.3 of the Main Report and Real Estate Appendix D.

HQUSACE Analysis. The concern is resolved by the text changes noted in the Action Taken.

t. Real Estate. [AFB Comment 20.] The real estate estimate in the REP includes an estimate of \$8,349,500; \$8,307,000 for the actual purchase price of the land and \$42,500 for administrative costs. Paragraph 6.4.2.6 indicates that 100% of the lands necessary for the construction of the selected alternative plan have been acquired by SFWMD using funds appropriated to DOI in Section 390. The REP does not indicate what portion of the purchase costs were Federal and non-Federal. This should be specified since the cost sharing should account for the source of those monies and credit to the Federal and non-Federal shares accordingly based on the framework agreement. The costs for real estate should be explained in the report to avoid confusion and to support the cost sharing calculation.

Response. The Section 390 funds were provided to the SFWMD by the Department of Interior through a Grant Agreement. While the land and actual acquisition cost of the 1600 acres of land are on the Federal side of Grant Agreement ledger, it is the position of both DOI and SFWMD that the intent of the Grant Agreement was that all lands acquired under this Grant Agreement with Section 390 funds were to be treated having been acquired with 50% federal and 50% non-federal funds. Therefore for the real estate cost of \$8,349,500, \$4,174,750 will count toward the Federal share and \$4,174,750 will count toward the non-Federal share of total project costs. This information will be added to the REP.

Discussion/Action Required. The draft PIR needs to further explain the apportionment of real estate acquisition costs, in particular the statement " While the land and actual acquisition cost of the 1600 acres of land are on the Federal side of Grant Agreement ledger, it is the position of both DOI and SFWMD that the intent of the Grant Agreement was that all lands acquired under this Grant Agreement with Section 390 funds were to be treated having been acquired with 50% federal and 50% non-federal funds." Were any non-Federal matching funds spent for acquisition as required by Section 390? If not, has the Secretary of DOI verified in writing that Federal funds provided can be used to satisfy the non-federal share?

Action Taken. See response to question 19 above.

HQUSACE Analysis. The concern is not resolved. See [AFB comment 19] above.

FRC Response. See response to paragraph s [AFB comment 19] above.

FRC Discussion/Action Required. This issue will be resolved by the FRC action required for paragraph s [AFB comment 19] above.

Action Taken in Final PIR. Information presented in District legal opinion was included in Section 7.2.3 of the Main Report and Real Estate Appendix D.

HQ Analysis. The concern is resolved by the text changes noted in the Action Taken.

u. Technical and Legal Certification. [AFB Comment 21.] The AFB material indicates that the ITR and Legal Review are ongoing and that the results of ITR will be presented at the AFB. At the AFB, the District should summarize significant concerns and how they will be resolved.

Response. Technical and legal review comments on the AFB materials have been received by the project delivery team and responses have been prepared. In general, technical review comments were focused on real estate, construction and operations, geotechnical, and hydrology and hydraulics issues. A copy of the document summarizing technical and legal review comments and responses is attached for review.

Discussion/Action Required. It is the District's assessment that the comments will not result in any significant changes. The technical and legal review is not included in any of the post-AFB documents provided to HQ. Technical and legal review documentation will be submitted with the draft PIR.

Action Taken. An ITR was performed on the draft report and these will be transmitted with this response. A legal review comment and response was preformed as part of the ITR on the draft PIR. No unresolved comments remain.

HQUSACE Analysis. The concern is resolved. The ITR documentation was provided with the draft PIR.

v. Compliance Memoranda (Tab 15). [AFB Comment 22.] While no formal guidance has been previously issued by Headquarters, guidance was provided at the initial IPR, the FSM, and the 21 April 2004 IRC and was documented in records of the meetings prepared by the District, as discussed under Tab 14. Comments and responses on the FSM material and a summary of the 21 April 2004 IRC are included under Tab 14. The AFB should summarize the guidance provided and compliance actions taken by the District.

Response. The AFB materials include meeting summary notes from the 21 April 2004 IRC and a memorandum for the record from the 21 December 2003 FSM. The review team's request to summarize guidance provided at these meetings and reflected in the notes summarizing discussions and action items at those meetings is noted; however, it was also discussed at the AFB that no further action was required to address this comment.

Discussion/Action Required. HQ apologized that guidance provided at the Feasibility Scoping Meeting (FSM) and the April IRC was not documented in formal HQ guidance. The memorandum for the record of the December 2003 FSM and the meeting summary notes from the April 2004 IRC, which were provided in the AFB materials, provide sufficient documentation of the decisions reached and guidance provided. The District has complied with the guidance provided. It would have been helpful to have a summary of the guidance provided and compliance actions taken by the District.

The draft PIR will include a document indicating how and where the guidance provided by the AFB guidance memorandum has been addressed in the draft PIR.

Action Taken. The draft PIR does not include this guidance as it was not provided in time for the printing of the draft report. However, it will be provided as part of the transmittal of the draft PIR to HQ and SAD.

HQUSACE Analysis. **The concern is resolved** by the provision of the compliance documentation.

w. **Status of Non-Federal Support (Tab 16)**. [AFB Comment 23.] That the SFWMD signed the PED agreement under which this, and many other CERP projects, are being studied, is not an indication of support for the proposed Site 1 project. A more specific expression of non-Federal support is needed.

Response. As discussed at the AFB, the SFWMD is very supportive of the project and immediate implementation. The SFWMD has committed resources in the upcoming fiscal years (2005, 2006) to complete engineering and design work and initiate construction of the project upon approval of the PIR. It is widely acknowledged by all agencies involved with South Florida ecosystem restoration that this project represents an immediate opportunity to realize the beneficial environmental and economic effects associated with capturing and storing water lost to tide in the region.

Discussion/Action Required. The SFWMD stated that it, as well as environmental groups, fully supports the project. The project has stand-alone benefits, and there is no other location to build it. The SFWMD's letter of intent will be included in the PIR.

The statements by the SFWMD representative at the AFB are adequate indication of non-Federal support for the project. The SFWMD comments on the draft PIR should also verify its support and a letter of intent will be included in the final PIR.

Action Taken. The SFWMD supports this project and a draft letter of intent is included at the end of Annex C.

HQUSACE Analysis. The concern is not fully resolved. Provision of the sponsor's letter of intent in the final PIR will resolve the concern.

FRC Response. Concur, sponsor's letter of support will be included in Annex C, "Legislative and Statutory Requirements" of the Final PIR.

FRC Discussion/Action Required. To resolve this issue, the sponsor's letter of support will be included in FPIR.

Action Taken in Final PIR. Letter of Support is in Annex C.

HQUSACE Analysis. The concern is resolved by inclusion of the Letter of Support in Annex C.

x. **Savings Clause and Water Reservations.** [AFB Comment 24.] It appears that no analysis has been performed to determine the project's compliance with WRDA 2000 requirements (impacts on level of service of flooding, impacts on existing legal sources, and water reservations). An assessment of the project's compliance requirements is needed to support the tentatively recommended plan.

Response. The analysis of the project's impacts on level of service of flood protection is complete (see Tab 17, "Seepage Mitigation Analysis for the Site 1 Impoundment Utilizing the Lower East Coast Subregional MODFLOW Model", SFWMD, June 2004). That analysis concluded that a "slight rise in groundwater elevations does not adversely impact these (adjacent) surface water management systems."

The analysis of the project's effects on existing legal sources is not yet fully complete; however, it is known that the project will not be operated to eliminate or transfer existing legal sources of water supply to municipal and industrial users in the study area and the natural system. The project simply makes more water available from the existing sources to those users under certain conditions (see AFB Materials CD, Tab 17, Appendix H ("Site 1 Impoundment Draft Operating Manual").

Similarly, the analysis of the quantity of water to be reserved for the natural system and the quantity of water made available for other water related needs is also not fully complete; however, it is expected that the additional water retained in the natural system (primarily in LNWR and WCA 2A, but also in WCA 3 and ENP as applicable) that is beneficial for the protection of fish and wildlife as a result of project implementation will be identified as water to be reserved by the State of Florida.

Discussion/Action Required. The flood protection analysis was included with the AFB read-ahead material. Max Day, SFWMD, explained that the groundwater model and the SFWMM were used to establish the boundary conditions for the flood protection analysis. Seepage curves were developed to show the varying levels of seepage surrounding the reservoir. An assumption of the project is that flood canals would be maintained at 7.5 feet. The SFWMM model will be used for the water reservations modeling. That modeling is underway, but is not yet complete. Eric Bush stated that the analysis quantifies the amount of water to be reserved (retained in natural system), based on the project objectives (fish and wildlife habitat in WCAs 1 and 2). These issues will be further addressed in Programmatic GM 5.

The results of the analyses of the project's effects on existing legal sources of water and the quantity of water to be reserved for the natural system and the quantity of water made available for other water related needs was provided to HQ and SAD in the supplemental information submitted by memorandum, CESAJ-PD-R, 12 January 2005, subject: Site 1 Impoundment Project Implementation Report, 26 August 2004 Alternative Formulation Briefing. The

information provided adequately addresses the Savings Clause and Water Reservation requirements of WRDA 2000 and will be include in the draft PIR.

Action Taken. Project assurances are included in Section 7.3 on page 7-22 of the Main Report as well as in Annex C.

HQUSACE Analysis. The concern is resolved by the text changes in Section 7.3.

y. **Evaluation of Alternatives.** [AFB Comment 25.] Tab 17, App F, Sec 2.4.2.1, Table F.2.4.2.1-1 presents the evaluation criteria and the associated goals, objectives, metrics, targets, biological response, extent, and models, but there does not appear to be any presentation of the results of the evaluation.

Response. Except for the hydrologic function analysis results, the AFB materials did not include modeling results for the evaluation criteria. As discussed at the AFB, the hydrologic function results are based on the same modeling work used for evaluating the other evaluation criteria. Modeling results for the other evaluation criteria were presented at the AFB and will be incorporated into the draft PIR. The evaluation sub-team is completing additional analytical work requested at the AFB. Spreadsheets displaying the modeling data for each of the evaluation criteria are included with this response for review.

Discussion/Action Required. The additional analytical work to be accomplished is in the area of quantifying ecosystem restoration outputs in areas where it is possible (e.g.; number and size of tree islands, utilization of WCA by wading birds, and reduction in cattails). The results of these additional analyses will be included in the draft PIR (see comment 2).

Action Taken. Section 6.1.4.2 on page 6-5 and Appendix C provide the Habitat Unit analysis.

HQUSACE Analysis. The concern is not fully resolved. The text should be modified to clarify how the habitat units were annualized. See [AFB Comment 10.]

FRC Response. See response to paragraph j. [AFB Comment 10].

FRC Discussion/Action Required. This issue will be resolved by the FRC action required for paragraph j. [AFB comment 10] above.

Action Taken. See [AFB comment 10] above.

HQUSACE Analysis. The concern is resolved by the cross-referenced paragraph 3.j.

z. **Miscellaneous.** [AFB Comment 26.] Table 4.2 of the AFB submission indicates that alternatives 2), 3), 5), and 6) are eliminated. For clarity of presentation the alternative numbers in the table should be revised to be consistent with the prior text to show that alternatives 3), 4), 6), and 7) are eliminated and alternatives 2) and 5) are the ones carried forward.

Response. Concur.

Discussion/Action Required. The draft PIR will be consistent regarding the alternatives eliminated and carried forward.

Action Taken. The numbers as well as the descriptions are included in Table 4.3-1 on page 4-12 of the Main Report. The numbers were dropped from the alternatives considered for further action on page 4-14.

HQUSACE Analysis. **The concern is resolved** by the text changes noted above.

/s/
C. Lee Ware, P.E.
Review Manager