

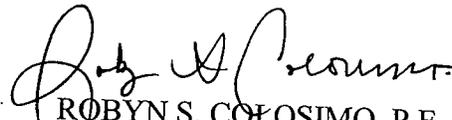
08 June 2007

MEMORANDUM FOR Chief, SAD Regional Integration Team (Attn: Mr. Hardesty)

SUBJECT: Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Broward County Water Preserve Area, Final Integrated Project Implementation Report and Environmental Impact Statement (March 2007) --Documentation of Review Findings

1. This memorandum forwards the documentation of policy compliance review findings for the subject FPIR-FEIS. It is the opinion of the policy compliance review team that all of the policy concerns they have noted have been adequately addressed for this phase of the project formulation and development. All unresolved issues still outstanding at the time of the Civil Works Review Board were resolved before the PIR-EIS were released for final public and State and Agency Review.
2. Office of Water Project Review consideration of the subject documents is complete. Questions concerning the HQUSACE policy compliance review of the subject FPIR-FEIS may be directed to the review manager, John C. Furry at 202-761-1765.

Encl



ROBYN S. COLOSIMO, P.E.
Chief, Office of Water Project Review
Policy and Policy Compliance Division
Directorate of Civil Works

CF:
CECW-PC file

DOCUMENTATION OF REVIEW FINDINGS

CENTRAL AND SOUTHERN FLORIDA PROJECT COMPREHENSIVE EVERGLADES RESTORATION PLAN BROWARD COUNTY WATER PRESERVE AREA

FINAL INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT MARCH 2007

1. BACKGROUND

A. PROJECT LOCATION: The BCWPA study area is located along the eastern edge of the remaining Everglades ecosystem and the western edge of developed portions of Broward County. The southern portion of the project also extends into Miami-Dade County. The proposed project area includes the WCA 3A/3B SMA and the affected C-11 Impoundment and C-9 STA/Impoundment drainage basins. The C-11 and C-9 drainage basins are located predominately within Broward County, between I-75/I-595 in the north and include areas just south of the C-9 Canal in Miami-Dade County. The eastern and western boundaries of the two drainage basins are the Intracoastal Waterway and WCA 3, respectively. Included within these features is a portion of the North New River Canal that will be widened to provide additional conveyance capacity for the project to function.

B. AUTHORITY: The Broward County Water Preserve Areas (BCWPA) projects were authorized by Sections 601(b)(2)(C)(iv), 601(b)(2)(C)(v), 601(b)(2)(C)(vi), and 601(b)(2)(C)(ix) of the Water Resources Development Act of 2000 (WRDA 2000) subject to the requirements of Section 601(b)(2)(D) of WRDA 2000. The South Florida Water Management District (SFWMD) is the non-Federal sponsor for the implementation of this project. Announced in October 2004 by the Governor of Florida, the State and the SFWMD have committed over \$1.5 billion in additional funds via "certificates of participation" to accelerate design and construction activities on certain CERP projects, including the BCWPA project through a program known as "Acceler8". To ensure appropriate and timely coordination of Federal activities necessary to support the Acceler8 program, the Administration through the Department of the Army and the Department of Interior have committed to align resources and workloads to produce project implementation reports consistent with the State of Florida's construction schedules. The SFWMD has been involved throughout the BCWPA Project Implementation Report (PIR) development process and has indicated their intent to proceed to construction. See excerpts below.

Water Resources Development Act of 2000
PUBLIC LAW 106-541
December 11, 2000

Section 601, (b) COMPREHENSIVE EVERGLADES RESTORATION PLAN-

(2) SPECIFIC AUTHORIZATIONS-

(C) INITIAL PROJECTS- The following projects are authorized for implementation, after review and approval by the Secretary, subject to the conditions stated in subparagraph (D), at a total cost of \$1,100,918,000, with an estimated Federal cost of \$550,459,000 and an estimated non-Federal cost of \$550,459,000:

(iv) Water Conservation Areas 3A/3B Levee Seepage Management, at a total cost of \$100,335,000, with an estimated Federal cost of \$50,167,500 and an estimated non-Federal cost of \$50,167,500.

(v) C-11 Impoundment and Stormwater Treatment Area, at a total cost of \$124,837,000, with an estimated Federal cost of \$62,418,500 and an estimated non-Federal cost of \$62,418,500.

(vi) C-9 Impoundment and Stormwater Treatment Area, at a total cost of \$89,146,000, with an estimated Federal cost of \$44,573,000 and an estimated non-Federal cost of \$44,573,000.

(ix) North New River Improvements, at a total cost of \$77,087,000, with an estimated Federal cost of \$38,543,500 and an estimated non-Federal cost of \$38,543,500.

(D) CONDITIONS-

(i) PROJECT IMPLEMENTATION REPORTS- Before implementation of a project described in any of clauses (i) through (x) of subparagraph (C), the Secretary shall review and approve for the project a project implementation report prepared in accordance with subsections (f) and (h).

(ii) SUBMISSION OF REPORT- The Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate the project implementation report required by subsections (f) and (h) for each project under this paragraph (including all relevant data and information on all costs).

C. NON-FEDERAL SPONSORS: The South Florida Water Management District (SFWMD) is the non-Federal sponsor for the implementation of this project. The Governor of Florida announced in October 2004 that the State and the SFWMD have committed over \$1.5 billion in additional funds via “certificates of participation” to accelerate design and construction activities on certain CERP projects, including the BCWPA project through a program known as “Acceler8”. To ensure appropriate and timely coordination of Federal activities necessary to support the Acceler8 program, the Administration through the Department of the Army and the Department of Interior have committed to align resources and workloads to produce project implementation reports consistent with the State of Florida’s construction schedules. The SFWMD has been involved throughout the BCWPA Project Implementation Report (PIR) development process and has indicated their intent to proceed to construction.

D. COST SHARING: The total first cost of the project, including the value of lands, easements, right-of-ways, relocations and disposal (LERRDs), and pre-construction engineering and design (PED) costs will be shared equally between the Federal government and the non-Federal sponsor as described in the following table. The non-Federal sponsor will provide cash or manage a portion of construction as necessary to meet its 50% share of the total first cost of the project to be balanced according to Section 601 of WRDA 2000 to maintain a 50/50 cost share as measured cumulatively for the entire CERP Program. Section 601 of the WRDA 2000 and USACE policy requires that the non-Federal sponsor must obtain and provide certification of LERRDs necessary for project implementation.

TOTAL FIRST COST APPORTIONMENT FOR THE BCWPA PROJECT
(OCTOBER 2006 PRICE LEVEL ROUNDED TO NEAREST \$10,000)

Item	Non-Federal Cost	Federal Cost	Total Cost
PED	\$ 15,160,000	\$ 15,150,000	\$ 30,310,000
Lands & Damages	\$258,130,000	\$ 50,790,000	\$308,920,000
Construction Management	\$ 14,400,000	\$ 14,400,000	\$ 28,800,000
Construction Costs	\$ 85,800,000	\$293,150,000	\$378,950,000
Total	\$373,490,000	\$373,490,000	\$746,980,000

Section 601(b)(2) of the WRDA of 2000 specifies that adaptive assessment and monitoring will be cost shared equally by the Federal Government and the non-Federal sponsor (SFWMD). These adaptive management costs have been allocated to construction and operations and maintenance (O&M) for budgeting purposes. The implementation of the recreation features is cost shared equally by the Federal government and non-Federal sponsor and the O&M is 100% Non-Federal responsibility.

E. ENVIRONMENTAL COMPLIANCE: Compliance with applicable environmental protection statutes, regulations and executive orders is complete for the current stage of the study. The NEPA *Record of Decision* will be signed by the ASA(CW) after OMB clears the project for submission to the Committee on Transportation and Infrastructure and the Committee on Environment and Public Works.

F. REVIEW HISTORY: AFB review comments were documented in CECW-SAD memo dated 01 JUN 05. The AFB comments were incorporated in the DPIR/DEIS review comments transmitted by CECW-SAD PGM dated 17 NOV 05. Consequently, there is no section in this document specifically dedicated to resolution of the AFB comments. AFB comments are referenced in the following comments where applicable. Among the typical AFB concerns was a major concern regarding the Corps' authority to combine projects that were specifically authorized as individual projects. It was decided that the DPIR/DEIS would be submitted to HQUSACE for approval before the DPIR/DEIS could be released for public review.

On 29 August 2005, CESAJ submitted a DPIR/DEIS dated August 2005 for review. The resulting Project Guidance Memorandum (PGM) was issued by CECW-SAD on 17 November 2005 without the benefit of District responses to comments or any discussion of actions to resolve issues. (This leaves many comments without a SAJ Response, Discussion, Action Required, or Action Taken between the Comment and the first HQUSACE assessment in the documentation.) The 17 NOV 05 PGM divided comments into two sections. Section I of the PGM included comments that required resolution before the DPIR/DEIS could be released for public review, and comments in Section II required resolution before the final report.

CECW-SAD requested CECW-PC to provide an expedited review of CESAJ responses to comments and Volume I of the subject report on 06 January 2006 to determine the suitability of a revised DPIR/DEIS dated November 2005 for release for public review. CECW-SAD hand delivered Annex C – *Analyses Required by WRDA 2000 and State Law* from the subject report

for review on 31 January 2006. The prerelease review of the revised DPIR/DEIS addressed the whole report but focused on resolution of Section I comments. The Review team members provided comments to CECW-SAD, but a formal comment memo was not issued to the field. The Notice of Availability for DPIR/DEIS appeared in the Federal Register on March 17, 2006 (Volume 71, Number 52, Page 13838) as EIS No. 20060077. The comment period ended on May 1, 2006.

The revised DPIR/DEIS was hand-delivered to CECW-PC for review on 31 March 2006 without a transmittal memo from CESAJ or CESAD. The review of the revised DPIR/DEIS was documented in CECW-PC memorandum to CECW-SAD dated 18 APR 06.

CESAD submitted the final PIR/EIS to HQ USACE (CECW-SAD) by letter dated 26 March 2007. The findings of the CECW-PC prerelease review follows. Paragraph 2 provides a summary of the concerns remaining from earlier reviews and a brief discussion of the new concerns identified during this prerelease review. Paragraphs 3, 4 and 5 of this Documentation of Review Findings correspond to paragraphs 3, 4, and 5 of the 18 APR 06 memorandum respectively and numeration of the comments within these paragraphs also match the 18 APR 06 memorandum.

2. CONCERNS IDENTIFIED DURING PRE-RELEASE REVIEW OF THE FPIR/FEIS

Four Concerns from earlier reviews remain unresolved. The complex issue of evaluating separately authorized projects as a single project instead of studying the individual projects is at the heart of three of these unresolved comments. The idea to combine the projects is directly linked to fact that one of the individually authorized projects exceeds the 902 limit and the outputs of another are lower than expected. By lumping the projects into a super-project the 902 situation is eliminated and the average annual ecosystem outputs are very acceptable. The district has attempted to justify the lumping based of the integral interconnections of the environs and the hydrology of the subject areas that were not understood when the projects were authorized separately. The report explains why the combined project would be a good approach but it does not answer why the projects cannot be constructed under existing authorities. Full resolution of Comments 3a, 3j, and 3l requires a better explanation of why the projects cannot be constructed under existing authorities.

3a. Comment: Project Authority (AFB PGM #1) (17Nov05 PGM #1a). ...

HQUSACE Assessment: This issue is **not resolved** because the PIR still does not explain the need to implement the three projects and connecting canal as one project. No such explanation is presented in Section 5 per the compliance memorandum. Page 5-4 mentions that the PIR will address the separable projects aspect, but no such discussion was found by the review team.

3j. Comment: North New River Canal Improvements (17Nov05 PGM #1o and #1d). ...

HQUSACE Assessment: This issue is **not resolved**. The authorized status of the North New River Canal feature must be acknowledged in the report and documented as indicated in the comment. The recommended plan includes modifying and implementing portions of the authorized and not yet constructed North New River Canal (NNRC) project. The PIR very

deliberately avoids discussing the NNRC at most opportunities. The PIR must describe the NNRC as authorized, identify the portions to be modified and implemented in this recommendation, described how the portions would be modified relative to the authorized NNRC plan, and address the effects on and the future plans for the remaining portion of the NNRC project.

3l. Comment: Evolution of the Authorized Projects (17Nov05 PGM #It).

HQUSACE Assessment: This issue will be resolved once the NNRC project is properly described in the PIR (see comment 3j above).

The fourth unresolved concern relates to determination of the most cost effective sizes of numerous features. Engineering reviewers stated, "The selected plan and design is highly conservative. They [CESAJ] have literally taken every conservative assumption that they could and compounded the safety level in the design. The embankment heights and crest widths could probably be reduced but at this time they are choosing to stay on the conservative side." Conservatively sized means the features are big enough for their expected functions. The concern is extra size means extra cost and the resulting differences in costs for each alternative may alter the cost effectiveness of the alternatives sufficiently to alter the recommended plan.

4p. Comment: Selection and Scale of Project Elements. ...

HQUSACE Assessment: This issue is **not resolved**. There is no indication of where the information offered in the District's response was included in the FPIR. Without this information, the FPIR offers no rationale at all to establish that each of the various water control and water conveyance features (pump stations, canals, culverts, spillways and weirs) are necessary and that each one is scaled appropriately (i.e., most cost effective means of providing the recommended level of outputs) in accordance with Exhibit G-1, ER 1105-2-100. The response itself still does not establish the function and need for all of the project features at the recommended scale and cost.

These unresolved comments would not have precluded finalizing the PIR/EIS, however these are issues that would likely to be raised by OMB. The CWRB approved release of the PIR/EIS for State and Agency Review contingent upon HQ clearing revisions to address 3a & 3j, and 3l, and to the extent practical 4p. Comment 3l will be resolved when 3j is adequately addressed. Comment 4p pertains to proper scaling and costing of major features of each alternative in the final array of alternatives. Proper scaling and costing may alter the selected plan, however it substantive refinement of information for the PIR would be costly and delay transmittal to ASA(CW). Full resolution of this comment will come during PED. The HQ approved resolutions of 3a & 3j and 3l, and the best feasibility-level response for 4p are included in the circulated PIR/EIS.

New comments regarding real estate, the cost estimates, the MCASES are minor and are being addressed as editorial corrections independent of the policy review. Both policy and editorial concerns will be resolved before the FPIR/FEIS is submitted to the ASA(CW).

3. Comments Not Fully Resolved from the 17 November 2005 PGM.

3a. Comment: Project Authority (AFB PGM #1) (17Nov05 PGM #Ia). Para. 1.2 pg. 10 “The BCWPA project is one of the initial ten projects...” This is not correct. It seems to be three of the initial rolled into one. There needs to be a clear statement at the beginning that the Corps is combining the projects. This will impact the authority under which we will operate and may require a new authorization. While para. 1.3 quotes the authority provided under WRDA 2000, that authority is provided to the Army to implement the listed projects subject to completion and approval of a PIR, which also requires passage of a resolution by the authorizing committees before construction funds can be appropriated. These authorities will not be sufficient to provide credit to the state for projects they may elect to implement under their Acceler8 program. The Document must clearly explain what authority it is operating under and all sections revised accordingly.

CESAJ Response: The BCWPA components include three projects that were initially authorized in Section 601 of WRDA 2000. These projects, while authorized, contingent on completion of a PIR and approval by Congressional Committees, they are not separable elements as the comment suggests. These projects, as described in the Restudy function (hydrologically) together to achieve desired outputs. Therefore, they will be presented and evaluated in this PIR as a single project.

With regard to authorization, SAJ proposes to seek a modification to the existing project authorization to address new project costs and crediting for work done in advance of the PCA.

Discussion: HQUSACE stated that if we use the current authority, we should use three reports bound together. Separate benefits, costs and justifications are needed for each of the three projects. More information is needed on the relationship of the projects and on the need for additional authorization.

HQUSACE stated that it would support going to Congress for re-authorization; however, HQ is not convinced that the three projects are dependent on each other to produce benefits. The report needs to make a stronger case that the three projects are dependent on one another. From previous discussions, HQ understands that the Seepage Management Area feature would capture an existing water source and that the reservoirs mitigate for the loss of this source, but are not interdependent. They appear to be separable elements. Why go back to Congress to reauthorize the three projects as a single project if they can be implemented under existing authority?

CESAJ stated that it has always maintained that components must function together and are not separable elements. This position was held throughout the Restudy and Water Preserve Areas Feasibility Study (WPAFS) process, and the components were never evaluated alone. They must function together to meet project objectives and achieve desired benefit output. CESAJ added that the C-9 will be an impoundment and Stormwater Treatment Area (STA) in the full build-out but in the interim is an impoundment, acting as an extension of C-11. In addition, water needs to be routed from C-11 to C-9 using a diversion canal that will be constructed in the Seepage Management Area, so it is more cost effective to implement the features concurrently.

HQUSACE stated that cost effectiveness is not a valid reason to combine separable elements. Since the three projects are currently authorized separately, HQUSACE asked what the benefit would be in combining the projects and seeking re-authorization from Congress. There would be a delay since it is uncertain when another Water Resource Development Act (WRDA) will be enacted. Currently, the team has the authorization needed to start construction (except if C-11 exceeds the Section 902 limit).

The South Florida Water Management District (SFWMD) reminded attendees that the projects also need to be combined based on State requirements for the savings clause and project assurances. In addition, the team must go back to Congress to request credit for SFWMD work.

HQUSACE suggested the team go through the PIR and Project Cooperation Agreement (PCA) process simultaneously. Once the PCA is signed, SFWMD can obtain credit. CESAJ will explore that PCA option.

The project team is concerned with separating the projects, as it is more difficult to show benefits for smaller projects. HQ pointed out that smaller projects are being implemented, and the Programmatic Regulations do not allow teams to combine projects at their convenience. HQUSACE disagreed that the elements are inseparable and defined the issue as one of sequencing the implementation of the three projects. The District needs to document why it makes sense to implement the projects in a particular sequence and not other sequences. Any co-dependence is probably irrelevant to reauthorization.

HQUSACE said we need authority to credit "Acceler8". The sponsor can get w-i-k credit once a PCA is executed.

Action Required: CESAJ will submit a preliminary draft PIR to HQUSACE prior to releasing the report to the public. CESAJ will "tell the story," whether that story includes seeking re-authorization or to move forward with authorized separable elements.

Action Taken: Text explaining the need to implement the three projects and connecting canal as one project has been added.

HQUSACE Initial Assessment: This issue is not resolved because the PIR still does not adequately explain the need to implement the three projects and connecting canal as one project. The explanation provided by the District in the 01 March 2005 conference call should be reflected in the PIR. The PIR should explain in detail how the authorized projects described in Section 1.1.4 are interconnected, both surface and subsurface, and why they are inseparable due to potential operation and savings clause problems. It should explain how and why the major components are needed to balance water movements. It appears that this description belongs early in the PIR since it is a primary reason for reexamining the authorized plans. Section 3 should also assess the interconnectedness of the selected plan to support the implementation and authorization recommendations.

CESAJ Response: CESAJ concurs that the PIR should adequately explain the need to implement all of the components of the selected plan as one project. The explanation provided by CESAJ at the 1 March 2006 teleconference will be added, as appropriate, to the PIR in the

Executive Summary, Section 2 (“Existing Conditions/Affected Environment”), Section 3 (“Future Without Project Condition”), Section 4 (“Identification of Problems and Opportunities”), Section 5 (“Formulation and Evaluation of Alternative Plans”), and Section 10 (“District Engineer’s Recommendations”).

Discussion/Action Required: Headquarters agreed that the project should be implemented as one “super” project. The PIR should explain in detail how the authorized projects are interconnected and should be implemented as one project. Incorporate the CESAJ explanation provided at the 1 March 2006 teleconference and discussed at the 4 May 2006 IRC in the final PIR.

Action Taken: The PIR explains in Section 5 (Formulation and Evaluation of Alternative Plans) the interconnectedness of the project features as requested.

HQUSACE Assessment: This issue is **Not Resolved**. There is no indication of where the information offered in the District’s response was included in the FPIR. Without this information, the FPIR offers no rationale at all to establish that each of the various water control and water conveyance features (pump stations, canals, culverts, spillways and weirs) are necessary and that each one is scaled appropriately (i.e., most cost effective means of providing the recommended level of outputs) in accordance with Exhibit G-1, ER 1105-2-100. The response itself still does not establish the function and need for all of the project features at the recommended scale and cost.

Action Taken: Section 5 (Formulation and Evaluation of Alternative Plans) the interconnectedness of the project features has been modified and a specific paragraph on this item was added to Section 3 of the report.

HQUSACE Assessment: The action taken adequately addresses the issue and the comment is **RESOLVED**.

3b. Comment: Authority Needs (17Nov05 PGM #1c). The DPIR should assess and state whether additional authority is needed. If it is needed, then it should be stated in the recommendation. The revised recommendation text and supporting information needs to be reviewed by HQUSACE prior to releasing the draft report. HQUSACE does not believe there is any need to reauthorize the four projects as a single project since the four projects could be implemented in a single effort under existing authority (once the 902 issue is resolved). The description of the recommended plan and the implementation section should discuss the need to implement the projects as one.

HQUSACE Initial Assessment: This issue is not resolved. The PIR needs to explain why deauthorization and reauthorization are necessary in lieu of simultaneous implementation under existing authority. It still appears that the project, with the exception of the C-11 Impoundment, could be implemented without additional authority. Seeking additional authority only where needed may offer more flexibility. For example, if reauthorization is delayed for years because WRDA is not passed, credit might be delayed for the Sponsor’s in-kind work on the SMA and the C-9 Impoundment. In addition, it appears simpler and sufficient to modify the language in

WRDA 2000 as needed to address any authority needs than to deauthorize three projects and authorize a new one.

CESAJ Response: The report recommends de-authorization of the projects initially authorized in Section 601(b)(2)(C) of WRDA 2000, and a new authorization for the recommended plan, which combines the three projects in the WRDA 2000 authorization and an increment of a fourth project also included in the WRDA 2000 authorization. Final recommendations language for the proposed authorization will be further coordinated with SAD and HQ USACE.

Discussion/Action Required: This issue will be resolved, pending the changes discussed in comment 3a above. The policy review team agreed on 04 May 2006 not to contest the proposal to implement the recommended plan as a single project, since there are no clear advantages and disadvantages to the Federal government for either approach.

Action Taken: As noted in response 3a above, the PIR explains in Section 5 (Formulation and Evaluation of Alternative Plans) the interconnectedness of the project features and makes the recommendation as one project in Section 10.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3c. Comment: NEPA Scope. (17Nov05 PGM #Id). Combining three authorized projects, a significant part of a fourth authorized project, and adding ASR into one big project is an alternative, but implementation of four individual authorized projects or combinations of the four must also be considered as realistic alternatives for the EIS. According to 40 CFR 1508.25 it is absolutely correct to discuss the interrelated effects of the four authorized projects in the same impact statement as they are closely related and their effects are cumulative. However, it is not correct to assume that because the projects are linked that they are not separable projects. It is also incorrect to assume the projects may be modified or combined while ignoring the fact they are authorized as separable projects. Further, it is not clear how a justifiable, cost effective project that is already authorized can be eliminated from the final array. 40 CFR 1502.14 requires inclusion and consideration of reasonable alternatives in the EIS. There are differences in beneficial and adverse effects, in extent, timing, severity, and duration that must be discussed. This includes discussing the effects of delaying construction of authorized projects while waiting for Congress to authorize a Super Project that includes components that exceed the 902 limit. Present the yet to be authorized Super Project and the combinations of the separable authorized projects as reasonable alternatives in the EIS

HQUSACE Initial Assessment: This comment is not resolved. 40 CFR 1502.14 says “agencies shall: (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.” The original comment was very clear that since the four already authorized projects could be implemented individually, it is a reasonable to believe each authorized project could be an alternative that must be considered to comply NEPA. The comment was also clear that the various combinations of the separable authorized projects are reasonable alternatives and if a Super Project is to be pursued it would also be a reasonable alternative. The district’s decision to seek deauthorization of any or all of the four authorized

projects does not alter the fact the authorized projects are reasonable alternatives and must be addressed to comply with NEPA implementation regulations. The requirements of the Clean Water Act to consider all practicable alternatives are even more rigid than NEPA's requirement to address all reasonable alternatives. Without the required discussion by 40 CFR 1502.14, this DPIR-DEIS is not in compliance with NEPA.

CESAJ Response: It is CESAJ's position that the four authorized projects could not meet the next-added incremental justification requirement for individual implementation. The Master Implementation Sequencing Plan (MISP) for CERP (version 1.0, issued 1 April 2005), which was developed by USACE and SFWMD in accordance with Section 305.30 of the CERP Programmatic Regulations indicates that the Broward County WPA Project (emphasis added) is a Band One project, with a currently-scheduled construction completion date of 2009. The plan formulation section of the report will be revised to clearly explain the interdependency of the components of the alternatives and state that the only practicable alternatives for achieving project objectives include plans with both the C-11 Impoundment and the Seepage Management Area.

Discussion: Headquarters explained the NEPA and the CWA analyses are not for the purpose of determining the best plan based on economics, but on determining plans that have the least overall adverse effects to the natural environment. As such, the NEPA and CWA analyses of alternatives are neither constrained nor restricted to Corps policy to focus on only plans that meet certain economic criteria. Congress has already determined each authorized project is a separable project; therefore, combinations of these projects are alternatives for implementing.

Action Required: The EIS needs to describe why the various combinations cannot function due to engineering constraints and put these under the heading of alternatives considered but not included in the final array

Action Taken: As noted in response 3a above, the PIR evaluated a stand alone project and also explains in Section 5 (Formulation and Evaluation of Alternative Plans) the interconnectedness of the project features. The environmental effects of these alternatives are also discussed in Section 6 (Environmental Effects).

HQUSACE Assessment: Assuming authority is given to combine the subject projects, this concern is **RESOLVED** by the action taken. If the authority to combine is not forthcoming, this needs to be reevaluated.

3d. Comment: Alternatives Not In Corps Jurisdiction. (17Nov05 PGM #1e). 40 CFR 1502.14 requires inclusion and consideration of reasonable alternatives not within the jurisdiction of the lead agency in the EIS. The Report neither discusses such alternatives nor does it state such alternatives do not exist. A description of the reasonable alternatives not within the Corps' jurisdiction and why it is not acceptable or a statement that such alternatives do not exist is required to demonstrate compliance with the NEPA regulation.

HQUSACE Initial Assessment: This comment is not resolved. According to the response to comment b, SFWMD "*is pursuing construction of the components of the Broward County WPA*

as part of its Acceler8 Program, actual construction of the project will not be delayed by seeking new authorization.” This is a very strong indicator that there are alternatives that do not require Corps participation and entities who can implement these alternatives. To comply with NEPA there should be an explanation as to why these alternatives are not likely or why they should not be considered in detail.

CESAJ Response: CESAJ does not agree that the existence of the Acceler8 program means that there are alternatives for the BCWPA project that do not require USACE participation. The October 13, 2004 letter from Mr. John Paul Woodley, Junior (ASA-CW) and Ms. Marti Allbright (Special Assistant to the Secretary of the Interior) reflects a commitment by the Federal government to work with the State of Florida to “move forward on another suite of CERP projects in a timely manner.” However, it is understood that an additional discussion and explanation of the Acceler8 program and USACE’s role in the Acceler8 program should be included in the draft report (the Executive Summary already addresses expedited construction and implementation via the Acceler8 program). Additional explanation will be added to Section 8 (“Plan Implementation”). Recommendations about crediting for work completed under the Acceler8 program will be included in Section 10 (“District Engineer’s Recommendations”).

Discussion: Headquarters explained that according to 40 CFR 1502.14, CESAJ must concisely explain that only SFWMD and the State have the authority and fiscal capability to implement this project without the resources of the Corps. However to do so would so deplete their financial capability that they would not be able to participate as a cost-share sponsor on the other intricately interrelated projects required to restore the Everglades. Further explain no other Federal agency has the engineering expertise required for this project, so there is no practicable Alternative outside the Corps’ jurisdiction.

Action Required: The District will add a sentence to alternative discussion that explains Corps mandate for performing work in Everglades.

Action Taken: Section 5.3.3.5 was added to report to address the mandate for Corps work on the Everglades.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3e. Comment: Section 902 Criteria (AFB PGM #11) (17Nov05 PGM #Ih and #Iz).

This issue is unresolved. The estimated cost of about \$280,274,000 for the C-11 project in Table 3-4 more than doubles the \$124,837,000 authorized cost. A Section 902 cost analysis must be displayed in the report in accordance with paragraph G-15 and Exhibit G-11 in ER 1105-2-100. Also, the C-9 and WCA 3A/3B SMA costs exceed their respective authorized costs. Sufficient information should be displayed to allow decision-makers to concur that the Section 902 limits are not an issue for those two projects.

HQUSACE Initial Assessment: This issue is not resolved but may become moot once HQUSACE concurs with the scope of modifying the existing authorization. If authorization needs are limited to the C-11 Impoundment and SMA cost, then a Section 902 cost analysis must

be displayed in the report in accordance with paragraph G-15 and Exhibit G-11 in ER 1105-2-100. Also, the C-9 and WCA 3A/3B SMA costs exceed their respective authorized costs. Sufficient information should be displayed to allow decision-makers to concur that the Section 902 limits are not an issue for those two projects.

CESAJ Response: A section 902 analysis is not required, since the recommendation is to de-authorize the projects authorized in Section 601(b)(2)(C) of WRDA 2000 and to seek a new authorization for the project. However, a comparison of project costs to 1999 costs escalated to current price levels (2005 or 2006, whichever is appropriate) for the components included in the selected plan will be provided.

Discussion/Action Required: Include the cost comparison in the PIR.

Action Taken: A cost comparison is included in Table 7-6 of the PIR of the WRDA 200 costs escalated versus the recommended plans costs.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3f. Comment: Compliance With Federal Statutes And Regulations. (17Nov05 PGM #Ij). There is no discussion of compliance with Federal statutes and regulations in the report. Focusing on significant issues is required by the CEQ NEPA regulations (40 CFR 1500.1(b), 1501.7(a) (2) and (3), and 1502.2(b)). Significance based on institutional recognition means that the importance of a resource or is acknowledged in the laws, adopted plans, and other policy statements of public agencies or private groups. Sources of institutional recognition include: Public laws, executive orders, rules and regulations, treaties, and other policy statements of the Federal government. Table 3.4.3 in the P&G lists the Federal statutes and policies that should be considered in all studies as basis for identifying institutionally recognized resources. Other Federal policies subsequent to the publication of the P&G and project area specific policies are to be considered as applicable. Likewise, laws, plans, codes, ordinances, and other policy statements of regional state and local public entities with jurisdiction in the planning area must be considered. Further, 40 CFR 1502.25 requires the draft EIS to list all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal. To comply with NEPA and NEPA regulations, all applicable environmental protection laws, executive orders, rules and regulations, treaties, and other policies must be listed and considered in the EIS.

HQUSACE Initial Assessment: This comment is partially resolved. As described in the original comment Public laws, executive orders, rules and regulations, treaties, and other policy statements of the Federal government are important factors in determining significant resources to be discussed in the EIS. Further compliance with statutes may have substantive effects on the formulation, design and costs of a project. Consideration of and compliance with relevant statutes are among the significant issues that must be highlighted and documented in the EIS. Although this discussion is commonly found in the Summary in compliance with 40 CFR 1502.12 it could appear in a number of other locations. To comply with the original comment the District could have expanded the Section 3.4 to address compliance with both Federal and State statutes, or similarly expanded Section 3.6.3. Whether the topic is found in the

Summary or Section 3 the details of compliance could be placed an attachment to the main document. The concern is that the main document contains no reference to the appropriate Annexes and the appearance that compliance with Federal requirements is not as important as compliance with Florida statutes. The district should add a reference to detailed discussions on compliance with Federal and State statutes to the Summary and expand either 3.4 to include both Federal and State statutes.

CESAJ Response: The final PIR includes Section 9, Summary of Coordination and Environmental Compliance. This section outlines the public outreach, public involvement and coordination with necessary state and federal agencies. A matrix of the Compliance with Environmental Laws, Statutes and Executive Orders is included in Section 9.2.5. Section 9 also includes a section on Compliance with Florida Statutes (Section 9.2.6); Permits, Entitlements and Certifications (Section 9.2.6.1); Compliance with Applicable Water Quality Standards and Permitting Requirements (Section 9.2.7); Coordination with Existing Utilities and Public Infrastructure (Section 9.2.8); and compliance with the Executive Order on Federal Actions to Address Environmental Justice (Section 9.3). Compliance with both state and federal statutes is detailed in Section 9 and includes the following compliance matrix:

9.2.5 Compliance with Environmental Laws, Statutes, and Executive Orders

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
Clean Air Act	PC	PIR/EIS will be coordinated with public agencies. Air emissions permit may be required for large diesel pumps; normally applied for during PED phase.	Draft PIR/EIS (March 2006)	Compliance with Section 309 of CAA will occur with the coordination and review of the PIR/EIS by EPA.
Clean Water Act	PC	404 (b) (1) Evaluation was prepared and included in both the draft and final PIR/EIS. For BCWPA; WQC will be required; (State permit); NPDES permit will be required (State delegation); WQ is expected to improve with project. Private mitigation areas are known to exist in the area proposed for the C-11 impoundment. This issue was fully discussed in the 2001 Feasibility Report/DEIS and was updated by new WRAP analysis which was included in the draft PIR/EIS for review.	404 (b)(1) was prepared and coordinated in the draft PIR/EIS (March 2006).	Full compliance upon issuance of the WQC and NPDES permits by the state.

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
National Environmental Policy Act of 1969	PC	NOI published; scoping meetings held; no new issues have been identified. A public meeting was held.	NOI for WPA FS July 2000; NOI for BCWPA July 2004; Scoping letter for BCWPA September 2004. Draft PIR/EIS circulated for review in March 2006. A public meeting was held on April 18, 2006.	Full compliance upon coordination of the final PIR/EIS and signing of the ROD.
Fish and Wildlife Coordination Act of 1958	C	Funds transferred annually to FWS; PALs received; FWS active team participant and has provided info on fish and wildlife elements on project.	Ongoing. FWS participated in FSM, pre-AFB review. PALs received dated 30 Sep 03, 31 Mar 04 & 26 July 04. Draft FWCA report was issued July 1, 2005. The final FWCA report was issued on May 2006.	Full compliance with issuance of the final FWCA report by USFWS.
Endangered Species Act of 1973	C	List of affected species has been confirmed. The Draft PIR/EIS served as the BA for USFWS. NOAA did not require analysis due to distance from coast.	October 2001 November 2004 The PIR/EIS served as the BA and was coordinated with the USFWS in March 2006.	Full compliance occurred with issuance of concurrence letter dated April 7, 2006 from the USFWS (Annex A).
Magnuson-Stevens Fishery Mgt Act	C	Inland project is not expected to adversely affect Essential Fish Habitat; NOAA will accept DEIS as the EFH assessment.	March 2006	Full compliance after review of the draft PIR/EIS by NMFS.
Fishery Conservation and Management Act	C	The project has been coordinated with NMFS	March 2006	Full compliance after review of the draft PIR/EIS by NMFS.
Coastal Zone Management Act of 1972	PC	Based on a review of the September 2004 scoping notice and comments provided by state reviewing agencies, the state has determined that, at this stage, the project is consistent with the Florida Coastal Management Program.	March 2006 (draft PIR/EIS)	Additional consistency review by the state will occur during coordination of the final PIR/EIS. Full compliance will occur with issuance of the WQC by the state.
Coastal Barrier Resources Act and Coastal Barrier Improvement Act	NA	There are no designated coastal barrier resources in the project area that would be affected by this project. These Acts do not apply.		

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
Marine Mammal Protection Act	C	The West Indian Manatee does occur near some of the project sites. Incorporation of the safeguards used to protect T&E species during construction and operation would protect any marine mammals in the area. Coordination with the USFWS will continue as construction and operational guidelines are incorporated to avoid impacts to this species.	March 2006.	Full compliance after review of the draft PIR/EIS by USFWS.
Marine Protection, Research and Sanctuaries Act	NA	The term "dumping" as defined in the Act (33 U.S.C. 1402)(f) does not apply to this project. Therefore the MPRSA does not apply.		
Estuary Protection Act of 1968	C	It is not anticipated that estuaries would be adversely affected by this project.		
Anadromous Fish Conservation Act	C	Anadromous fish species would not be affected. The project has been coordinated with NMFS.	March 2006 (draft PIR/EIS).	
Migratory Bird Treaty Act and Migratory Bird Conservation Act	C	No migratory birds would be affected by project activities.	March 2006 (draft PIR/EIS).	
Wild and Scenic River Act of 1968	C	No designated Wild and Scenic river reaches would be affected by project related activities.		
Federal Water Project Recreation Act	C	The principles of this Act (PL 89-72) have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2).		
Submerged Lands Act of 1953	NA	The project would not occur on submerged lands of the State of Florida. This Act does not apply.		
Rivers and Harbors Act of 1899	C	The proposed work would not obstruct navigable waters of the US		
National Historic	PC	Three sites determined	February and April 2006	Full compliance will

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
Marine Mammal Protection Act	C	The West Indian Manatee does occur near some of the project sites. Incorporation of the safeguards used to protect T&E species during construction and operation would protect any marine mammals in the area. Coordination with the USFWS will continue as construction and operational guidelines are incorporated to avoid impacts to this species.	March 2006.	Full compliance after review of the draft PIR/EIS by USFWS.
Marine Protection, Research and Sanctuaries Act	NA	The term "dumping" as defined in the Act (3[33 U.S.C. 1402](f) does not apply to this project. Therefore the MPRSA does not apply.		
Estuary Protection Act of 1968	C	It is not anticipated that estuaries would be adversely affected by this project.		
Anadromous Fish Conservation Act	C	Anadromous fish species would not be affected. The project has been coordinated with NMFS.	March 2006 (draft PIR/EIS).	
Migratory Bird Treaty Act and Migratory Bird Conservation Act	C	No migratory birds would be affected by project activities.	March 2006 (draft PIR/EIS).	
Wild and Scenic River Act of 1968	C	No designated Wild and Scenic river reaches would be affected by project related activities.		
Federal Water Project Recreation Act	C	The principles of this Act (PL 89-72) have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2).		
Submerged Lands Act of 1953	NA	The project would not occur on submerged lands of the State of Florida. This Act does not apply.		
Rivers and Harbors Act of 1899	C	The proposed work would not obstruct navigable waters of the US		
National Historic	PC	Three sites determined	February and April 2006	Full compliance will

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
Preservation Act of 1966 and the Archeology and Historic Preservation Act		eligible for inclusion to the National Register of Historic Places have been identified in the project area. Coordination with SHPO and Native American Tribes is ongoing.		be achieved upon completion of the Section 106 process.
RCRA, CERCLA, Toxic Substances Control Act of 1976	PC	One potential site identified; Federal evaluation of potential for action level items is ongoing; site is potentially below Federal action levels for all contaminants.	2005	Full compliance by completion of the draft PIR/EIS. If action-level contamination is identified site will be avoided.
Farmland Protection Policy Act of 1981	PC	Initial coordination with NRCS occurred during scoping. Form AD-1006 submitted to NRCS March 17, 2005. Coordination on-going.	September 2004 March 2005 March 2006 (draft PIR/EIS).	Full compliance expected after completion of the final PIR/EIS
E.O. 11988 Floodplain Management	C	(Floodplain Development). The areas to be converted to Water Preserve Areas are virtually all considered floodplain. The purpose of the EO is to discourage Federally induced development in floodplains. Commitment of lands to WPAs will preclude such development.	1999; 2001	
E.O. 11990 Protection of Wetlands	C	(Wetlands protection) The areas proposed for WPAs are a mosaic of wetlands and uplands. WRAP analysis was done in 2001 and was repeated in 2006 to determine impacts and "lift" of wetlands function related to the proposed project. A net functional "lift" is expected. Full mitigation for previously established private mitigation banks is also proposed.	1999; 2001; Ongoing. WRAP and other analysis of wetlands.	Full compliance at present. If re-analysis of affected mitigation lands indicates additional mitigation is required the full mitigation sequence will be considered.
E.O. 12898 Environmental Justice	C	This E.O. requires consideration of, and avoidance of	March 2006 (draft PIR/EIS).	

Law, Regulation or Policy	Status	Comments	Last Coordinated	Full Compliance Expected
		disproportionately adverse effects on, minority and low-income populations. One such nucleus was identified near a proposed impoundment during the 2001 Feasibility Study. The adverse impacts were avoided by re-drawing project boundaries.		
E.O. 13089 Coral Reef Protection	NA	This project will not adversely impact coral reefs or coral reef resources.		
E.O. 13112 Invasive Species	C	Project will reduce abundance and variety of invasive plant species in the project area.	March 2006 (draft PIR/EIS).	

C: Complies fully; PC: partial compliance due to plan development; NC: non-compliant; NA: not applicable.

Discussion: The information provided is at an appropriate level of detail and the table well presented. However, the following changes need to be included:

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 §176, 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.

Missing Statutes and Executive Orders applicable to the area:

- 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.
- 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.

Action Required: Add information from discussion into Table 9.2.5. of the PIR.

Action Taken: This table has been updated to address the discussions and is now Table 8.7 of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3g. Comment: Statement Recipients. (17Nov05 PGM #II). The DEIS must include a list of agencies, organizations, and persons to whom copies of the statement are sent to comply with the requirements of 40 CFR 1502.10. Add a list of agencies, organizations, and persons to whom copies of the statement are sent.

HQUSACE Initial Assessment: This comment is not resolve. 40 CFR 1502.10 provides a format that must be applied to EISs, unless the agency determines there is a compelling reason to deviate from the recommended format. 33 CFR 230.13, the Corps' NEPA implementation regulation, defers to 40 CFR 1502.10 regarding EIS formats. It is clear the Corps has determined there is no compelling reason to deviate from 40 CFR 1502.10. 40 CFR 1502.10 requires that regardless of what format is used, it "shall include" certain specific paragraphs, one of which is a "*List of Agencies, Organizations, and persons to whom copies of the statement are sent*". Public involvement is critical to the NEPA process and it must be presented as a key part of the project formulation and decision making process, not relegated to an annex and without discussion of the effects of such involvement on the formulation process. To this end, the CEQ Guidelines requires there must be a specific section listed in the EIS Table of Contents titled "*List of Agencies, Organizations, and persons to whom copies of the statement are sent*". The text of the paragraph may be a concise discussion of efforts to contact all interested parties through a number of the means suggested 40 CFR 1506.6(b) that incorporates by reference the complete mailing list found in ANNEX ??, but the paragraph must appear by the prescribed name in the EIS. It is also noted that no list of Draft PIR/DEIS recipients is found in Annex B of the PIR as referenced by the district.

CESAJ Response: The following has been included as Section 9.4.1 *List of Agencies, Organizations, and persons to whom copies of the EIS are sent.*

The following agencies, groups and individuals were sent copies of the draft PIR/EIS:

Native American Tribes

Miccosukee Tribe of Indians of Florida
Seminole Tribe of Florida

Federal Agencies

Advisory Council on Historic Preservation
Federal Emergency Management Agency
Council on Environmental Quality
U.S. Environmental Protection Agency
U.S. Department of Agriculture
 Forestry Service
 Natural Resources Conservation Service
U.S. Department of Commerce

National Oceanic and Atmospheric Administration
Florida Keys National Marine Sanctuary
National Marine Fisheries Service

U.S. Department of Energy
U.S. Department of Housing and Urban Development
U.S. Department of the Interior
Bureau of Indian Affairs
U.S. Fish and Wildlife Service
U.S. Geological Survey
National Park Service
Office of Environmental Policy and Compliance
U.S. Department of Justice
U.S. Coast Guard
U.S. Department of Transportation
Federal Highway Administration
U.S. Public Health Service

State Agencies

Office of the Governor
Florida Department of Agriculture and Consumer Services
Florida Department of Community Affairs
Florida Department of Environmental Protection
Florida State Clearinghouse
Florida Fish and Wildlife Conservation Commission
Florida Department of Transportation
Florida Division of Historical Resources - SHPO
South Florida Water Management District

Regional Governments

Central Florida Regional Planning Council
South Florida Regional Planning Council
Treasure Coast Regional Planning Council

County Governments

Broward County
Miami-Dade County
Palm Beach County

Municipalities

Palm Beach, FL
Medley, FL
Lighthouse Point, FL
Weston, FL
Lauderhill, FL
Ft. Lauderdale, FL
Pembroke Pines, FL
Davie, FL

Hollywood, FL
Southwest Ranches, FL
Delray Beach, FL

Groups

Audubon Society of the Everglades
Biodiversity Legal Foundation
Miami-Dade County Farm Bureau
Dairy Farmers, Inc.
Defenders of Wildlife
Environmental Coalition of Broward County
Environmental Defense Fund
Everglades Coordinating Council
Everglades Foundation
Florida Audubon Society
Florida Biodiversity Project
Florida Defenders of the Environment
Florida League of Anglers, Inc.
Florida Power and Light Company
Florida Sportsman Conservation Association
Florida Wetlands
Florida Wildlife Federation
Friends of Florida
Friends of the Everglades
Izaak Walton League of America, Inc.
Lake Worth Drainage District
League of Women Voters
National Audubon Society
National Parks and Conservation Association
National Park Trust
National Resources Defense Council
National Sierra Club
National Wildlife Federation
Save the Manatee Club
Sierra Club, Florida Chapter
South Florida Agricultural Council
The Environmental Coalition
The Nature Conservancy
The Wilderness Society
Tropical Audubon Society
Trust for Public Lands
World Wildlife Fund

Individuals

A list of individuals who received the draft Project Implementation Report is on file in the Jacksonville District of the Corps at the address shown on the cover page of this document.

Discussion/Action Required: This issue will be resolved by inclusion of the above in the final PIR.

Action Taken: The above response has been included in the final PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3h. Comment: Summary. (17Nov05 PGM #Im). The Summary is incomplete. It is missing plan, costs, significance (why move/store the water?), implementation, etc., and may not fulfill NEPA requirements.

HQUSACE Initial Assessment: This issue is not resolved. The summary has been revised to present the features of the recommended plan, the benefits of the recommended plan, and an implementation plan. However, the benefits are only conceptual, quantified impacts should also be included.

CESAJ Response: The Executive Summary has been revised to include the quantified benefits and impacts from the project. This section is as follows:

BENEFITS OF THE SELECTED PLAN

The selected plan is integral for achieving the system-wide ecosystem restoration and other water-related needs goals and objectives for CERP and for this area of the South Florida region. The BCWPA will contribute to the environmental restoration of south Florida by providing regional water storage that will reduce demands on the Everglades and Lake Okeechobee for water supply. Anticipated fish and wildlife habitat benefits of the project include reduction of drainage at Lake Okeechobee and Everglade wetlands, reestablishment of natural hydro-patterns within existing natural areas, and improvement of water quality in WCA 3. Based on the system formulation and evaluation, the selected plan is expected to provide an aggregated total of 543,781 average annual habitat units for all Everglades ecosystem attributes beneficially affected by the project, in comparison to the no-action alternative. Everglades ecosystem attributes beneficially affected include the Ridge and Slough landscape (one of the defining landscape attributes of the pre-drainage Everglades), tree islands (another defining landscape attribute of the pre-drainage Everglades), and the Everglades Snail Kite (a federally-listed endangered species that inhabits the Everglades ecosystem). An estimated 303,228 average annual habitat units for saw grass and 240,553 average annual habitat units for snail kite are expected from the selected plan. Additionally, the selected plan will increase the spatial extent of habitat for fish and wildlife in the WCA 3A/3B Seepage Management Area compared to future without-project conditions.

The selected plan will provide additional water for the natural system in WCA 3B and Everglades National Park which will be reserved or allocated for the natural system by the State of Florida. The median value of additional water made available in WCA-3B is approximately 2,000 ac. ft. The median value of additional water made available in Everglades National Park is approximately 15,000 ac. ft. The selected plan also provides additional water to meet agricultural, municipal, and Tribal water supply needs.

Further, the BCWPA project is the building block upon which implementation of other CERP projects necessary to fully achieve ecosystem restoration objectives in Everglades National Park and Biscayne Bay depends (e.g., WCA 3A Decompartmentalization; WCA 2B Flows to Everglades National Park; North and Central Lake Belt Storage Areas). Aquifer storage and recovery (ASR) components of CERP which lessen the reliance on surface water deliveries from the natural system to meet water supply and aquifer protection needs associated with the BCWPA project will not function without the storage infrastructure provided by the selected plan. The water storage, seepage management, and conveyance functions necessary for this area of South Florida that are provided by the selected plan cannot be provided by other projects in the CERP.

Project implementation will not reduce the quantity of beneficial water available to fish and wildlife in Water Conservation Area (WCA) 3A, but will transfer a portion of the water budget WCA 3A from pumped discharges at the existing S-9 pump station to water retained in the WCAs as a result of the seepage management feature. The transfer of a portion of the existing legal source for the WCAs and in downstream Everglades National Park from pumped discharges at the S-9 pump station to rainfall retained in the natural system via seepage management is one of the purposes of the project. However, this transfer of a portion of the existing legal sources of water for the WCAs and Everglades National Park does not preclude operations of the C&SF Project to make supplemental deliveries to the WCAs during drought conditions to compensate for water supply releases from the WCAs to the Lower East Coast.

ADVERSE EFFECTS OF THE PLAN

Adverse effects of the plan will be offset by the significant beneficial effects of the selected plan. The design of the selected plan minimizes impacts to existing wetlands, 404 mitigation sites, and fish and wildlife habitat, affected by project features and includes environmentally responsible design features. Except for the existing 404 mitigation sites, no separable fish and wildlife habitat, or flood damage mitigation is required. Adverse effects to the existing 404 mitigation sites will be compensated for as previously described.

Permanent habitat losses due to wetland and upland conversion within the footprint of project features would be offset by the gain in habitat quality in the Everglades (including Everglades National Park) and within the WCA 3A/3B Seepage Management feature. There will be no adverse impacts on minority or disadvantaged populations associated with project implementation.

Construction of the C-9 Impoundment would not adversely affect any known historical resources located within the footprint. It is also not anticipated that the selected plan would have any effect on historical resources within the WCA 3A and 3B seepage management areas. However, the selected plan has the potential to adversely impact known cultural resources within the C-11 Impoundment by ground clearing and changing the water level. These sites are known to contain human remains and have been determined to be potentially eligible for inclusion to the National Register of Historic Places. Further consultation with the SHPO, Native American Tribes and other interested parties is necessary to determine mitigation measures. Possible mitigation measures include avoidance of sites, data recovery or construction of a protective berm around the sites. A prehistoric site to the south of the C-11 Impoundment area is a known mortuary site and will be avoided.

Potential adverse effects of a temporary nature include emission of dust, mobilization of sediments and generation of noise during construction of proposed structures, including excavation, earth moving and embankment and STA construction. USACE construction specifications include appropriate requirements to maintain noise generation, local water contamination and air emissions within required limits.

Discussion/ Action Required: This issue will be resolved by inclusion of the above in the final PIR.

Action Taken: The Executive Summary has been revised to present the features of the recommended plan, the benefits of the recommended plan, the quantified impacts and an implementation plan as noted in the response.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3i. Comment: Savings Clause Analyses (17Nov05 PGM #In). Section 1.3.7.6 on page 1-34 says evaluations continue that will determine compliance with the Savings Clause. Section 2.2.3 on page 2-69 says Savings Clause analyses are incomplete. Page 2-107 indicates that some potential for violating the Savings Clause exists. Sections 3.3.2, 3.3.3, and 3.3.4 on page 3-10 indicate that the effects on existing water supply, identification of beneficial water made available for the natural system and identification of water made available for other water-related needs are not currently available. When will these various analyses be completed? How likely are the results to adversely affect the plan selection and the outputs of the selected plan? HQUSACE endorsement of the recommended plan would be premature if the results of these analyses are likely to impact the selected plan.

HQUSACE Initial Assessment: This issue is not resolved. Section 2.2.3, page 2-70, indicates that Savings Clause analyses have yet to be completed. This appears to conflict with the presentation in Section 3.3. Section 2.2.3 should be revised to be consistent with Section 3.3.

CESAJ Response: This section has been deleted from the final PIR. Project Assurances are described in the main report in Section 8.3 and the Project Specific Assurances and Savings Clause Requirements are described in Appendix G. The SFWMD Flood Protection Analysis for Broward County Water Preserve Areas C-11 and C-9 Impoundments (Final Report) is located in Appendix A.

Discussion/ Action Required: Complete the Savings Clause analyses and incorporate the results.

Action Taken: Project Assurances are described in the main report in Section 8.5 and the Project Specific Assurances and Savings Clause Requirements are described in Annex C. The SFWMD Flood Protection Analysis for Broward County Water Preserve Areas C-11 and C-9 Impoundments (Final Report) is located in Appendix A.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3j. Comment: North New River Canal Improvements (17Nov05 PGM #Io and #Idd). This feature appears for apparently the first time in Section 3.1.1.4, well after the selection of the recommended plan. Where is the plan formulation and evaluation that supports including it in the selected plan?

HQUSACE Initial Assessment: This issue is not resolved. Pages 1-18 and 1-20 state that modification of a reach of the North New River Canal (NNRC) between the C-11 and C-9 impoundments, known as the C-502B Borrow Canal, is part of the recommended plan. This was confirmed by the District in a vertical team conference call on 01 March 2006. The modification of the C-502B Borrow Canal is a component of the North New River Improvements project specifically authorized as part of the CERP. The PIR must describe this authorized project, particularly the portion to be implemented within the BCWPA. The CERP authorization discussion on page 1-6 must cover the North New River Improvements project and the CERP description of this component should be described on page 1-11 along with the other components of interest. The Section 2.2.1 Alternative Plan Descriptions need to indicate the NNRC improvements are part of the alternatives. The descriptions of alternatives in Sections 2.1.6 and 2.2.1 should state whether the NNRC improvement is part of the various alternatives. Section 3.1.1 should describe the NNRC improvement and acknowledge that the canal is already authorized. Section 3 and the recommendations should state that the C-502B Borrow Canal modifications would be implemented as part of the BCWPA project without modifying the North New River Improvement Project authorization in WRDA 2000, Section 601(b)(2)(C)(ix).

It should identify the width and capacity with and without the modification. The NNRC improvement should be identified on Figure 3-1.

CESAJ Response: As discussed during the 8 November 2005 teleconference, all references to the North New River Improvements project as part of the BCWPA project and project authorization were removed because the canal widening needed for the BCWPA project is included as a portion of the C-11 Impoundment component. The C-11 feature is identified in CERP as the Western C-11 Diversion Impoundment and Canal. References in the report to the modification of the canal are listed as “associated canal conveyance improvements.”

Discussion/Action Required: The authorized status of the North New River Canal feature must be acknowledged in the final PIR and documented as indicated in the comment. The authorized features of the North New River Canal should be described generally and a description of how the selected plan relates to the authorized plan also included.

Action Taken: The North New River portions of the project are described in the report and summarized costs are provided in Table 7-5 in Section 7.6.1.

HQUSACE Assessment: This issue is **Not Resolved**. The authorized status of the North New River Canal feature must be acknowledged in the report and documented as indicated in the comment. The recommended plan includes modifying and implementing portions of the authorized and not yet constructed North New River Canal (NNRC) project. The PIR very deliberately avoids discussing the NNRC at most opportunities. The PIR must describe the

NNRC as authorized, identify the portions to be modified and implemented in this recommendation, described how the portions would be modified relative to the authorized NNRC plan, and address the effects on and the future plans for the remaining portion of the NNRC project.

Action Taken: Based on further discussion with HQ references to the North New River Improvements authority were removed from the report and a paragraph was added to the report that stating in the introduction Section 1.4 of Main Report Last paragraph:

“The conveyance canal for the BCWPA Project between the C-11 and C-9 canal is referred to as the C502B conveyance canal or the C-11 Diversion Canal. This canal shares the same geography as a portion of the North New River Improvements Project but the improvements to the conveyance canal for the BCWPA Project are not part of the North New River Improvements Project. A further description of this can be found in Section 1.4.1 under WCA Conservation Area 3 Decompartmentalization and Sheetflow Enhancement.”

Also added to the report in the introduction Section 1.4.1 Relationship to other USACE/Non-Federal Sponsor Efforts, Studies, Documents, and Reports

“WCA 3 Decompartmentalization and Sheetflow Enhancement

The North New River (NNR) Improvements Project, or component SS is a major feature of the WCA 3 Decompartmentalization and Sheetflow Enhancement project and stretches from the Everglades Agricultural Area (EAA) Storage Reservoirs South to the Miami Canal and was initially authorized in Section 601 of WRDA 2000. WRDA 2000 also included language under sub paragraph (b)(2)(D) of Section 601 which states:

(b) Comprehensive Everglades Restoration Plan -

(2) SPECIFIC AUTHORIZATIONS -

(D) CONDITIONS.

(iv) MODIFIED WATER DELIVERY. – No appropriation shall be made to construct the Water Conservation Areas 3 Decompartmentalization and Sheetflow Enhancement Project (including component AA, Additional S-345 Structures; component QQ Phase 1, Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3; component QQ Phase 2, WCA 3 Decompartmentalization and Sheetflow Enhancement; and component SS, North New River Improvements) or the Central Lakebelt Storage Project (including components S and EEE, Central Lake Belt Storage Area) until the completion of the project to improve water deliveries to Everglades national Park authorized by Section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8).

The conveyance canal for the BCWPA Project between the C-11 and C-9 canal is referred to as the C502B conveyance canal or the C-11 Diversion Canal. This canal shares the same geography as a portion of the North New River Improvements Project but the improvements to the conveyance canal for the BCWPA Project are not part of the North New River Improvements Project outlined in the Restudy and therefore the implementation of a Broward County Water Preserve Area Project will not violate the cited WRDA language.”

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3k. Comment: Cost Shares (17Nov05 PGM #1r). Table 3-4 provides insufficient information to determine the cost sharing by project. The Federal cost share for each of the four projects ranges from about 39 to 95 percent based on Table 3-4 and 35 to 100 percent based on page 4-2. This may be due to carryover credit. If so, the carryover credit needs to be displayed and discussed in the report. Regardless, the numbers in the table appear to conflict with the 50-50 cost sharing described statements in Section 3.6.4 on page 3-21 and in Section 4 on page 4-2. This needs to be explained or corrected. Also, explain why significant LERRD costs are shown as Federal costs. The CERP cost share requirements should be explicitly presented in the DPIR, including any provisions for credit to the Sponsor for cost beyond the 50 percent non-Federal cost share. The following display should be used for each of the four projects and possibly the ASR feature. A summary table for the complete selected plan would also be included.

Cost Apportionment			
Project			
(October 2005 Price Level)			
Item	Non-Federal Cost	Federal Cost	Total Cost
PED	\$ x,xxx,000	\$ x,xxx,000	\$ x,xxx,000
LERRD	xx,xxx,000	0	xx,xxx,000
Ecosystem Restoration	xxx,xxx,000	xxx,xxx,000	xxx,xxx,000
Recreation	xxx,000	xxx,000	xxx,000
Total	\$ xxx,xxx,000	\$ xxx,xxx,000	\$ xxx,xxx,000
(Percent)	(xx)	(xx)	
Carryover Credit	-zz,zzz,000	zz,zzz,000	0
Total with Credit	\$ xxx,xxx,000	\$ xxx,xxx,000	\$ xxx,xxx,000
(Percent)	(50)	(50)	
HTRW Cleanup	\$ xx,xxx,000	\$ 0	\$ xx,xxx,000
Total	\$ xxx,xxx,000	\$ xxx,xxx,000	\$ xxx,xxx,000

HQUSACE Initial Assessment: This issue is not resolved. The Table 3-5 cost apportionment format is correct per previous HQUSACE input. However, we now understand that “carryover credit” will be addressed at the programmatic level, not necessarily within individual projects. Therefore, the carryover credit might not necessarily be addressed in the PCA for this project. The carryover credit of \$140,907,500 should be deleted and the totals adjusted accordingly in Table 3-5 and Table ES-1. A subsection should be added in Section 3.6 to explain the carryover credit concept and what is currently known about how carryover credit will be implemented.

CESAJ Response: In the final PIR, Table 8-1: Cost Apportionment Table for the Broward County WPA Project (October 2005 Price Level) has been modified per this new comment. The carryover credit (listed as Credit/Payment to Non-Federal Sponsor) has been removed from the table.

TABLE 8-1: COST APPORTIONMENT TABLE FOR THE BROWARD COUNTY WPA PROJECT (OCTOBER 2005 PRICE LEVEL)

Item	Non-Federal Cost	Federal Cost	Total Cost
PED	\$ 22,732,000	\$ 0	\$ 22,732,000
LERRD	\$281,815,000	\$ 0	\$281,815,000
CONSTRUCTION			
Ecosystem Restoration	\$215,031,000	\$ 0	\$215,031,000
Recreation	\$ 494,000	\$ 0	\$ 494,000
Total	\$520,073,000	\$ 0	\$520,073,000
HTRW costs	\$ 600,000		\$ 600,000

A new section has been added, Section 8.2.1.1 (Credit/Payment to Non-Federal Sponsor), which explains the carryover credit concept and what is currently know about how carryover credit will be implemented:

8.2.1.1 Credit/Payment to Non-Federal Sponsor

Credit/Payment to the Non-Federal sponsor will be implemented on a programmatic basis. The BC WPA project will track, on a periodic basis, work-in-kind credit expenses incurred by the non-Federal sponsor. The work-in-kind credit will be reviewed by the Corps team members for accuracy and acceptance. These expenses will be combined with the other CERP projects and totaled at the programmatic level. Based on these periodic checks, carryover credits will be established.

Discussion: Headquarters wondered why there are no Federal costs shown in the revised Table 8-1? The District explained the cost table reflects the Acceler 8 plan, that the sponsor plans to implement the project. It was agreed that the costs in the table should reflect the cost-sharing requirements specified in Section 601 of WRDA 2000, and text should be added to report to explain that the project is currently plan to be implemented via the Acceler 8 program.

Action Required: Table 8-1 will be revised to show 50/50 cost sharing with text added to explain the program wide crediting implication, similar to the language shown in the Site 1 impoundment Project PIR.

Action Taken: Table 8-1 was revised to show a 50/50 cost share with added text consistent with similar language to Site 1.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3l. Comment: Evolution of the Authorized Projects (17Nov05 PGM #It). Evolution of the Authorized Projects. In order to understand the changes from the authorized projects and to assess/confirm the need for additional authorization or lack thereof, certain information should be included. First, the major functions, features and costs of each project as authorized should be displayed. The level of detail does not have to be great, but should include the nominal dimensions (length, width, height, area, capacity) of major features such a impoundments,

canals, levees, water control structures/gates/conduits, access, mitigation, and etc. Costs should include the line items discussed in the “Project Cost Display” comment above. Second, a clear description and the costs of the incremental changes in those features should be displayed, including the features and costs eliminated from the plan and those deferred to future, separate efforts.

HQUSACE Initial Assessment: This issue is NOT RESOLVED pending either the addition of the specified information on the individual projects or HQUSACE concurrence with reauthorizing the four projects as one project.

CESAJ Response: Further discussion and confirmation of the need to provide additional information will be an outcome of the FRC scheduled for 4 May 2006.

Discussion/Action Required: This issue may be resolved by including the information on the evolution of the previously authorized plans to the current recommended plan in the final PIR.

Action Taken: Information is included in Section 5 (Formulation and Evaluation of Alternative Plans) of the PIR on the evolution of the previously authorized plans to the current recommended plan.

HQUSACE Assessment: This issue **will be RESOLVED** once the NNRC project is properly described in the PIR (see comment 3j above).

Action Taken: Based on further discussion with HQ references to the North New River Improvements authority were removed from the report and a paragraph was added to the report that stating in the introduction Section 1.4 of Main Report Last paragraph:

“The conveyance canal for the BCWPA Project between the C-11 and C-9 canal is referred to as the C502B conveyance canal or the C-11 Diversion Canal. This canal shares the same geography as a portion of the North New River Improvements Project but the improvements to the conveyance canal for the BCWPA Project are not part of the North New River Improvements Project. A further description of this can be found in Section 1.4.1 under WCA Conservation Area 3 Decompartmentalization and Sheetflow Enhancement.”

Also added to the report in the introduction Section 1.4.1 Relationship to other USACE/Non-Federal Sponsor Efforts, Studies, Documents, and Reports

“WCA 3 Decompartmentalization and Sheetflow Enhancement

The North New River (NNR) Improvements Project, or component SS is a major feature of the WCA 3 Decompartmentalization and Sheetflow Enhancement project and stretches from the Everglades Agricultural Area (EAA) Storage Reservoirs South to the Miami Canal and was initially authorized in Section 601 of WRDA 2000. WRDA 2000 also included language under sub paragraph (b)(2)(D) of Section 601 which states:

- (b) Comprehensive Everglades Restoration Plan -
- (2) SPECIFIC AUTHORIZATIONS -
- (D) CONDITIONS.

(iv) MODIFIED WATER DELIVERY. – No appropriation shall be made to construct the Water Conservation Areas 3 Decomartmentalization and Sheetflow Enhancement Project (including component AA, Additional S-345 Structures; component QQ Phase 1, Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3; component QQ Phase 2, WCA 3 Decompartmentalization and Sheetflow Enhancement; and component SS, North New River Improvements) or the Central Lakebelt Storage Project (including components S and EEE, Central Lake Belt Storage Area) until the completion of the project to improve water deliveries to Everglades national Park authorized by Section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8).

The conveyance canal for the BCWPA Project between the C-11 and C-9 canal is referred to as the C502B conveyance canal or the C-11 Diversion Canal. This canal shares the same geography as a portion of the North New River Improvements Project but the improvements to the conveyance canal for the BCWPA Project are not part of the North New River Improvements Project outlined in the Restudy and therefore the implementation of a Broward County Water Preserve Area Project will not violate the cited WRDA language.”

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3m. Comment: Monitoring (17Nov05 PGM #Iu). The monitoring efforts and costs for each project during construction and OMRR&R should be described in the presentation of the selected plan.

HQUSACE Initial Assessment: This issue is not resolved. The monitoring activities for the construction phase and after project completion need to be summarized in the main report in Section 3.1. The missing construction cost for monitoring needs to be inserted in Table 3-4. The annual monitoring cost after project completion should be displayed in Section 3.6.2.4.

CESAJ Response: The monitoring activities are described in Section 6.5 (Monitoring Plan and Adaptive Management) and the monitoring costs are described in Section 6.6.3 (Monitoring and Adaptive Management Costs) as follows:

6.5 Monitoring Plan and Adaptive Management

The BCWPA Project is a Category C project according to CERP Guidance Memorandum 23.01 (“Water Quality Considerations for the Project Implementation Report Phase” http://www.cerpzone.org/documents/CGM/cgm_023.01.pdf). As a Category C project, it is a component for which the Comprehensive Plan does not include water quality improvement features or specifically reference water quality improvement as a criterion to be addressed during design. However, when the BCWPA Project is implemented the water discharged must meet the water quality standards established for a Class III waterbody. The BCWPA Water Quality Monitoring Plan (see *Annex G*), will focus on water quality flowing into the project area and being discharged into the C-502A, C-502B, C-11 and C-9 canals.

Each impoundment (C-11 & C-9) has one inflow, one outflow and an emergency spillway. Water quality data will be collected at these locations during flow events in order to determine ambient concentrations and to calculate loading rates. There will also be interior water quality

monitoring sites within each impoundment. The WCA 3A/3B Levee Seepage Management Area (SMA) is primarily rainfall driven. The outflow structures for the SMA will be monitored for water quality during times of flow. The Water Quality Monitoring Plan is broken into baseline, startup and operational phases. Water column and fish tissue samples will be collected on a regular basis as outlined in the monitoring plan, while sediment samples will be collected during baseline and startup monitoring.

The project's performance measures are the same as or similar to the system-wide performance measures developed by RECOVER to evaluate system-wide effects. The RECOVER performance measures are based on CEMs which illustrate conceptual relationships between environmental drivers (such as agricultural or water management practices), stressors (such as reduced storage volume and degraded water quality), the ecological effects of stressors, and key attributes (such as tree island habitat and wading bird populations) of the ecosystem under consideration. Performance measures are established to evaluate the response of the ecosystem attributes to the expected changes resulting from project implementation.

System-wide ecological monitoring will be conducted for the BCWPA Project by RECOVER as part of the Monitoring and Assessment Plan (MAP). The specific parameters of interest to the BCWPA sub-team monitored by RECOVER are summarized in *Annex G*. Monitoring will include mapping vegetation within the project's zone of influence, which is WCA-3A and WCA-3B, including assessments of cattail and tree island communities and coverage. Additionally, wading birds will be monitored as part of the MAP. The MAP lists, and the team is aware of other ongoing monitoring conducted and used for system-wide assessments and adaptive management such as monitoring and recording of water stages within the Everglades (including WCA-3A and WCA-3B) and snail kite monitoring throughout the WCAs. The monitoring program for the BCWPA Project will rely on the MAP and other on-going efforts for assessment of system-wide effects for the purposes of demonstrating the project's success in contributing to the CERP and for the RECOVER team's process of adaptive assessment.

For project-level performance the SFWMD and USACE will monitor impoundment water stages, water quality, and releases (flow) as part of the Project Operating Manual (*Annex D*) and the Water Quality Monitoring Plan (*Annex G*). Fish and wildlife habitat features such as littoral shelves, fish refugia and marsh wetlands will be constructed as part of the project to compensate for impacts to existing 404 permitted mitigation sites (refer to *Section 7.2*). Project-level ecological monitoring will include monitoring these features to evaluate and assess the aquatic functions and benefits to ensure that the projected Functional Capacity Indices are achieved. This monitoring is described in *Annex G*.

An extensive Adaptive Assessment Program that includes a system-wide monitoring and evaluation program is being conducted to support the goals and objectives of CERP. As a region-specific component of CERP, the BCWPA Water Quality Monitoring Plan will be closely coordinated with RECOVER's system-wide Adaptive Assessment Program. This program will provide an opportunity to continue investigating concepts and issues related to the overall BCWPA Water Quality Plan while implementation of the initial project features is underway. The Adaptive Assessment Program will include continued regional and system-wide evaluation and analysis among other planning activities. The BCWPA Water Quality Monitoring Plan will focus on water quality in order to ensure that surface water is not degraded as a result of project

activities. The monitoring plan will provide an outline for quantifying water quality, creating a water budget, measuring constituents of interest (i.e. P and N) and measuring and evaluating pollutant sources.

6.6.3 Monitoring and Adaptive Management Costs

The estimated cost for water quality monitoring during the initial year is \$359,530, which would be construction funded. The estimated cost for water quality monitoring during operations of the project is \$377,662, which would be OMRR&R funded. Ecological monitoring would commence once the project is constructed and would continue for five years. The estimated cost for ecological monitoring during the initial year is \$29,768 which is construction funded. The total estimated cost for this monitoring during the subsequent four years is \$91,720, which is OMRR&R funded.

Monitoring costs were also added in Table 6-1 in the final PIR.

Discussion/Action Required: The Costs in Section 6.6.3 should be rounded to the nearest \$10,000.

Action Taken: The above language is included in the Final PIR with costs rounded in the Section and the rest of the PIR rounded to the nearest \$10,000.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3n. Comment: Separable Compensatory Mitigation (AFB PGM #12) (17Nov05 PGM #Iv).

This issue is unresolved [from the AFB]. Section 3.6.5.3 on page 3-23 says separate compensatory mitigation features are included. Explain why separate features are necessary in lieu of simply segregating a portion of the proposed plan's outputs as mitigation. This is significant because it is highly unusual and normally deemed unacceptable for a restoration project to require compensatory mitigation. The logic needs to be explained in the report.

HQUSACE Initial Assessment: This issue is not resolved. Section 3.6.5.6, page 3-42, states, "... *compensatory mitigation is required for any mitigation area established under a regulatory permit where environmental benefits are eliminated or reduced.*" What is the legal basis for this statement? It appears to be an unnecessary constraint that increases project costs without increasing the outputs. The mitigation sites should be treated as completed actions. Including them and their outputs in the future without-project condition would preclude crediting their outputs towards the proposed plan's benefits. Any changes identified in the with-project condition would be due solely to the proposed plan. Unless losses at the existing mitigation sites would create a net deficit for a particular and significant habitat category in the full with-project condition, the proposed compensatory mitigation features should be deleted.

In the event, the position above is reversed; the following concern must be addressed: Section 3.6.5.6 indicates that the compensatory mitigation plan is currently incomplete. The mitigation plan must be completed in the final PIR and not deferred until the PED or construction phases.

CESAJ Response: The Corps has a legal requirement to replace established mitigation areas adversely impacted by CERP. The ROD for the C&SF Comprehensive Review Study was signed on July 1, 1999, by Mr. Joseph W. Westphal, Assistant Secretary of the Army (Civil Works). The ROD approved the C&SF Comprehensive Plan for implementation including the final recommendations in the Final EIS. Recommendations in the Final EIS, specifically Section 9.6 include requiring compensatory mitigation to offset adverse impacts to established compensatory mitigation sites. In addition, the recommendations in the Final EIS were deemed by Mr. Westphal in the ROD to be technically sound, economically justified, in accordance with environmental statutes, and in the public interest. The existing mitigation areas were established as requirements of Department of the Army permits to meet legal requirements, Section 404(b)(1), and public interest. The permit documents are perpetual contracts and there is a continuing obligation for the permittee to ensure the obligations are satisfied. The Corps is impacting the permittee's ability to meet this obligation and therefore has an obligation to meet the terms of the contract with replacement mitigation. Established mitigation areas that would not be adversely impacted (no net loss or deficit) are not being replaced, only those sites where implementation of the project would result in a net deficit. The final PIR includes a compensatory mitigation, monitoring, and maintenance plan. Section 6.1.4.5 in the final PIR has been revised to read as follows:

6.1.4.5 Conclusions of Replacement Mitigation Plan

With the impoundment of water for prolonged durations in the C-11 and C-9 areas, it is anticipated that the quality of certain habitats will be reduced. Despite the assumption that future-with project effects are expected to be more beneficial to the ecological system than future-without project conditions, compensatory mitigation is required for any mitigation area established under a regulatory permit where environmental benefits are eliminated or reduced. This is required as part of the Record of Decision (ROD) for the C&SF Comprehensive Review Study, which was signed on July 1, 1999. Therefore, if the project is implemented and it reduces the spatial extent and/or adversely affects the functions of the established wetlands, then 89.95 Functional Capacity Units (FCUs) of replacement compensatory mitigation will be needed.

Section 7.2.5 of the final PIR outlines the possible methods of meeting the needed compensatory mitigation as follows:

7.2.5 Conclusions of Replacement Mitigation Plan

As the proposed mitigation measures are insufficient to offset adverse impacts to the existing mitigation areas, additional compensatory mitigation is needed. Although not included in the mitigation evaluation, the plan includes improvements to established mitigation areas outside the project footprint. The "Chimney" or Florida Department of Transportation mitigation area located on the northwest side of the C-9 Impoundment site is outside the project footprint and will not be impacted by the project. This mitigation site is managed by the SFWMD's Land Management Department. The area could use more water to improve the hydroperiod and there would be available water during the wet season and other periods of rainfall that could be discharged to the wetland mitigation site. The plan includes construction of a structure to discharge 50 cubic feet per second to the area. The perimeter does not include a containment berm or seepage collection system so the amount of water released to the area would need to be monitored to make sure the water does not impact adjacent land uses. A WRAP evaluation is being performed to determine the number of FCUs as a result of construction of the structure.

Another option for replacement mitigation to provide additional FCUs includes expanding the marsh creation area by an additional 20.4 acres to the west. This 20.4-acre area which is in the footprint of the C-11 Impoundment project is in private ownership. The original design of the marsh creation from the WPA Feasibility Report included this area. This area is not currently developed and a DA permit would be required to develop the site. It is within the footprint of the project and adjacent to the proposed marsh creation and should be used for additional mitigation. *Table 7-9* below shows how creation of marsh in this area would provide an additional 5.92 FCUs. Added to the 83.92 FCUs, the additional compensation would result in 89.84 FCUs for a net loss of only 0.11 FCU.

TABLE 7-9: ADDITIONAL COMPENSATION MEASURE

Additional Compensation Measure	Polygon	Acres	Existing FCI	Future With FCI	Delta	FCUs
Marsh Wetland	C-11 Impoundment	20.4	0.46	0.75	0.29	5.92
Total						5.92

Finally, consideration can be given for the melaleuca removal efforts of the SFWMD. The Corps regulatory evaluation does not normally award mitigation credit for works performed under a program or plan that is already in place. If the exotic plant removal efforts were not funded by mitigation funds from another project, it is possible that some compensation credit could be provided for this effort. This issue can be explored by the Regulatory Division to determine if a supplanting issue exists and if consideration of some mitigation credit would be appropriate.

During pre-construction engineering and design and following geotechnical exploration and site data collection, refinements to the plan will be made. Additional information at this stage may show that project footprints and configurations can be refined, thereby avoiding or reducing the impact on established mitigation areas or increasing the size of the compensation features such as fish refugia and littoral shelf creation areas. Other habitat features within the impoundments are also proposed, such as tree islands. Additional cost analysis is needed to determine what type of construction material and design will be employed so that that a plan for tree islands can be developed. An approximate acreage and a projection of the level of function and value (FCUs) the tree islands will provide to wetland dependent species will be provided once the additional cost analysis is conducted.

Discussion: Headquarters questioned the need to mitigate for mitigation when the project produces the same type of outputs. The District explained that the compensatory mitigation is required by the Comprehensive Plan (Yellow Book) Programmatic EIS, page 9-50 to 9-51, under 9.6 Fish and Wildlife Mitigation which states in part "... This compensatory mitigation requirement for the Restudy must be derived from sources other than the benefits claimed by the Comprehensive Plan itself. Therefore, a separable compensatory mitigation plan for these impacts may be needed." There are three Dept. of the Army permits affected by this project. The local responsibilities for mitigation will be relieved by this project and the Project will assume the local responsibilities for the replacement mitigation the same as overall project purpose.

Action Required: The costs for replacement mitigation need to be included in the final PIR. The PIR should show the specific costs associated with replacement mitigation and why the existing mitigation sites could not be avoided, and explain that the replacement mitigation proposed is the most cost-effective solution.

Action Taken: Section 6.2 describes the environmental effects of the project to the existing mitigation sites. Section 7.1.3.3 describes how these impacts were offset with the inclusion of the compensatory mitigation measures that both offset these impacts while also providing benefits to the project during extreme high events by providing temporary storage.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3o. Comment: Water Analysis (17Nov05 PGM #Ibb & #In). The analysis of water required to be reserved to benefit the natural system has not been completed yet (see page 3-10 of the main report).

HQUSACE Initial Assessment: This issue is partially resolved. The analysis of water required to be reserved to benefit the natural system has been completed and Section 3.3 has been revised to refer the reader to Annex C for details. However, the summary of the analyses in the main text needs some quantified information to support assertions of more water available and better water quality.

CESAJ Response: Concur; see response to comment 4v. Text describing the quantity of additional water made available to the natural system will be added to the main volume of the report where appropriate.

Discussion/Action Required: The referenced information is adequate. Add text describing the quantity of additional water made available to the natural system in accordance with the PIR template.

Action Taken: Text describing the quantity of additional water made available to the natural system has been added to the Executive Summary and Section 8.5 of the main volume of the report.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3p. Comment: Recreation (17Nov05 PGM #Icc & #IIa). The project now contains a proposal for inclusion of recreational facilities, although the main report contains only a brief mention of the proposal in the main report on page 2-61. This is not specifically noted in Section 3 which describes the Selected Plan or in Section 4 that describes the District Commander's Recommendations. Although the features proposed seem reasonable, they are just conceptual at this time. I note that the cost share recommendations on OMRR&R do not differentiate, reflecting that the feds with cost share recreational features at 50/50. These were part of any previous discussions on the project.

HQUSACE Initial Assessment: This issue is not resolved. The reference to Appendix I does not fulfill the need to describe the proposed recreation features in the main report. The Section 3 description of the Selected Plan should describe all proposed features, including the recreation features. The Section 4 District Commander Recommendations should also mention the recreation features and costs.

CESAJ Response: The final PIR includes a description of the proposed recreation features in the main report in Section 7.1.10. The section is as follows:

7.1.10 Recreational Resources

According to the 2000 Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP), the resource-based activities in which demands are projected to exceed supply in Region 11 (Broward, Dade and Monroe counties) are bicycle riding, camping (tent), freshwater beach activities, freshwater fishing (non-boat), hiking, hunting, nature study, and saltwater beach activities.

The future without this project has no recreation value since the BCWPA impoundments would not exist and the land would not likely be open to the public for recreational purposes. The future with the project is expected to see reduced shortage of recreation facilities and improved biking, horseback riding, hiking, wildlife viewing, nature study, fishing and canoeing activities.

There are potential recreation resources that may be associated directly with the construction of the impoundment. The recreation plan includes vaulted toilets, benches, parking lots, viewing platforms, picnic shelters, canoe launches, and information kiosks at three sites within the BCWPA Project. The uses presently considered compatible with resource protection and passive recreation include: freshwater fishing, horseback riding, hiking, off road bicycling, wildlife viewing and nature study.

The BCWPA Impoundments provide a unique and extensive natural resource-based recreational resource. The restoration of the ecosystem could potentially have important impacts on the value of outdoor recreation in the study area. The hydrologic changes associated with each alternative have been designed to improve the structure and function of the ecosystem in WCA 3A and 3B. These improvements can be expected to provide resource-based recreational opportunities compatible with the protection the natural systems. The land use change could potentially help meet unmet demand for recreation such as bicycle riding, freshwater fishing (non-boat), hiking, and nature study. Many tourists and residents recreate in the natural areas surrounding the study area. With an improvement in the ecology of the study area, the quality of the study area related recreation and/or the number of people who participate in study area related recreation could increase as well. Consequently, the value of outdoor recreation in the study area could also substantially increase.

The study area for the recreation benefit analysis is specific to Broward County, Florida. The 2000 Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) identifies the proposed project area as part of Region 11 comprised of Broward, Dade and Monroe Counties. Recreation deficits through 2010 identified by the SCORP2000 for this region include: bicycle

riding, nature study, freshwater fishing (non-boat), camping (tent), freshwater beach activities, hiking, hunting, and saltwater beach activities.

The total first cost for the recreational features is \$582,000. Interest during construction, which is estimated to last 2 1/2 years at an interest rate of 5.125 percent, is equal to \$37,000. The total investment cost equals the total first cost plus the interest during construction. Total investment cost is \$619,000. The average annual cost of the total investment cost over a 40-year period of analysis at 5.125 percent is \$37,000. *Table 7-3* summarizes the costs by recreation feature.

**TABLE 7-3: COST SUMMARY BY RECREATION FEATURES
(OCTOBER 2005 PRICE LEVELS)**

	<u>Costs</u>
Construction Elements	
Land Bridge	\$217,000
Benches	\$9,000
Concrete Slab & Footings	\$22,000
Trash Barrels	\$4,000
Canoe Launch with Boardwalk	\$37,000
Kiosk	\$30,000
Parking	\$82,000
Toilets	\$50,000
Site Grading and Landscaping	\$3,000
Mob, Demob, and Preparatory Work	\$40,000
Non-Construction	
Preconstruction Engineering and Design (PED)	\$44,000
Construction Management (S&A)	\$44,000
TOTAL FIRST COST	\$582,000
Interest During Construction	\$37,000
TOTAL INVESTMENT COST	\$619,000
Average Annual Cost (5.125 percent interest)	\$37,000
Annual O&MRR&R Cost	\$0
TOTAL ANNUAL COST	\$37,000

The unit day value (UDV) method was selected for estimating recreation benefits associated with the creation of the BCWPA. The UDV approach in recreation benefit analysis consists of two parts: determining value per visit and estimating visitation.

The justification of incurring additional costs for recreation features is derived by utilizing a benefit to cost ratio. The tangible economic justification of the proposed project can be ascertained by comparing the equivalent average annual charges with the estimate of the equivalent average annual benefits, which would be realized over the period of analysis. These average annual recreation benefits and costs are summarized in *Table 7-4*.

Engineering Regulation 1105-2-100 (The Planning Guidance Notebook) provides economic evaluation procedures to be used in all Federal water resources planning studies. The guidelines specified in the ER 1105-2-100 dated 22 April 2000 were observed in preparing this cost analysis. The federally mandated project evaluation interest rate of 5 1/8 percent, an economic period of analysis of 40 years and current prices were used to evaluate economic feasibility.

**TABLE 7-4: SUMMARY OF RECREATION COSTS AND BENEFITS
(OCTOBER 2005 PRICE LEVELS)**

Annual Costs	
Total Recreation Costs	\$582,000
Interest during PED and Construction	\$37,000
Total Investment Cost	\$619,000
Average Annual Cost	\$37,000
Annual Benefits	
Unit Day Value	\$6.00
Average Daily Users	316
Annual Users	115,000
Average Annual Benefit	\$691,000
Benefit to Cost	19 to 1
Net Annual Benefits	\$654,000

This analysis leads to the conclusion that there are nearly 19 times the benefits than the costs. The benefit to cost ratio for the recreation features equals 19 to 1, with net annual benefits equaling \$654,000. *Appendix E* describes the recreation plan in greater detail.

The following was added to Section 10 District Engineer's Recommendations:

Therefore, I recommend that the Broward County Water Preserve Area Project as described in the section of the report entitled "The Selected Plan" be authorized with such modifications thereof as in the discretion of the Chief of Engineers, may be advisable, for construction. The total estimated first cost for the Broward County WPA Project is \$520,073,000 (October 2005 price level). The total first cost for the Broward County WPA project includes recreation features totaling \$494,000. The estimated total annual cost of operation, maintenance, repair, rehabilitation and replacement is \$1,867,000 with an estimated Federal annual cost of \$933,500 and an estimated non-Federal cost of \$933,500.

Discussion/ Action Required: The recreation features are plan components, not affected resources. This section of the report should be moved into the Description of the Selected Plan section of the report.

Action Taken: The recreation section has been moved to section 7.1.4 (The Selected Plan) of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3q. Comment: Sensitivity Analysis (17Nov05 PGM #IIB). The sensitivity analysis in Section 2.3.1.6 on page 2-75 simply presents the differences in the numerical output of the two plans as percentages. A more useful sensitivity test would assess the affect of changes in the driving assumptions on the outputs, and possibly identify the ranges for particular assumptions that would cause the AAHU's for Alternatives 3 and 4 to change disproportionately.

HQUSACE Initial Assessment: This issue is not resolved. Revise this comment as follows: The Section 2.3.1.6 Sensitivity Analysis (page 2-76) simply identifies the degree of change in the habitat outputs that would change the designation of alternatives in the final array as "best buy" plans. This technique is more appropriate for early planning activities prior to screening alternatives. In accordance with paragraph E-4, ER 1105-2-100, it would be far more informative to (1) identify the important environmental, design, and cost variables; (2) characterize to the extent possible the different degrees of risk and uncertainty for each variable; (3) assess the effect on the study results; and (4) suggest possible adjustments, where needed, to manage the risk and uncertainty.

CESAJ Response: Section 5.4.3.5 (Sensitivity Analysis) in the final PIR is now located in the analysis of the best buy plans portion of Section 5 Formulation and Evaluation of Alternative Plans. Other analyses, as suggested above, are located in Section 5.5.6 as follows:

5.5.5 Risk and Uncertainty Analysis

Risk and uncertainty issues associated with ecosystem restoration plan formulation and evaluation were considered in order to characterize risk and uncertainty inherent in the system-wide CERP evaluation framework, individual project implementation, and issues specific to the final array of plans for the BCWPA project. An overview of risk and uncertainty issues is presented in the following sections. The role of the adaptive assessment strategy in addressing risk and uncertainty of ecological response is also discussed.

5.5.5.1 Sequencing and Adaptive Assessment

The CERP consists of 68 major components and six pilot projects. Significant uncertainty associated with the individual components and the comprehensive plan was recognized during the Restudy. There are a large number of potential combinations of these components that may result from differences in design and operational schedules developed through the PIR process. Even as planning efforts for the separate projects evolve, there are also changes in budgets, policies, resource demands, and operation principles. A fundamental implementation principle for the CERP is to utilize adaptive assessment and management in order to continually refine and improve the performance of the CERP. Incremental revisions throughout the planning process of the CERP will lead to optimal designs and operations of projects to improve performance. The order and schedule for project implementation will also be optimized to achieve the desired ecological responses. The utilization of the adaptive assessment policy minimizes the effects of

uncertainty with respect to the effects of CERP projects on the natural system and other water-related needs of the region related to the design and implementation of the CERP.

5.5.5.2 Hydrologic Modeling

To formulate, evaluate, assess and adaptively manage the CERP and individual CERP projects, regional hydrologic simulation models, the South Florida Water Management Model (SFWMM) and the Natural Systems Model (NSM) are utilized by project teams and RECOVER. Both models use two-mile square grids with resolution based on available spatially distributed data. These models have been peer reviewed and represent the best available science and are considered reliable for current decision-making processes (and have been repeatedly used to support decision-making). However, these models depict general hydrologic conditions that are assumed to be representative throughout the individual 4-square mile area (2,560-acre) grid cells that comprise the model, and therefore may not be fine enough in their resolution to simulate minor hydrologic changes that would result from variations in topography, soils, and vegetation within the grid cells, but which may be significant in terms of ecological response.

While the hydrologic models can illustrate effects of alternative plans in relationship to hydrologic targets, it is often difficult to discern the ecological magnitude of the relative differences between alternatives (e.g., a small slope change in a stage duration curve). Furthermore, the simulation models are not sensitive to small changes in hydrology at the cell boundaries. The effects of individual projects, especially if their affect on the regional water management system is relatively small, may be negligible or may not even be discernable using the regional modeling tool. This particular problem creates a lack of scientific certainty with respect to the spatial extent of a project's effects.

5.5.5.3 Hydrologic Performance Measures

Hydrologic performance measures are useful for determining and comparing the effects of alternative plans. However, to determine a plan's output for purposes of depicting NER benefits, it must be assumed that the hydrologic performance measures fully characterize all of the attributes of the ecosystem under consideration (i.e., the response of all of the ecosystem attributes to a plan should be able to be described in hydrologic terms), since the primary system-wide analytical tool is a hydrologic simulation model. This assumption has resulted in uncertainty with respect to the evaluation of system-wide ecological responses because not all ecological attributes can be simply reduced to hydrologic terms. However, to reduce levels of uncertainty, the hydrologic performance measures have been related to effects on certain ecological attributes established in the Conceptual Ecological Models for South Florida Ecosystem Restoration by the environmental subteam.

5.5.5.4 Evaluating the Ecological Significance of Hydrologic Change

Hydrologic performance measures illustrate the degree of attainment of specific hydrologic targets in specific areas (e.g., model grid cells, groups of cells known as "indicator regions", or environmental sub-regions of the South Florida ecosystem, such as Water Conservation Area 3A or 3B). However, the significance of change in a hydrologic performance measure with respect to the ecological attribute to which the performance measure applies is somewhat uncertain, especially when evaluating the effects of individual CERP projects. This is because the hydrologic change in a model grid cell, indicator region, or environmental sub-region that may result from individual projects is typically small in relative magnitude. Although target

conditions are usually established for hydrologic performance measures, scientists on project teams often have difficulty determining the meaningfulness of the relatively small differences between plans (including base conditions) indicative of the degree of attainment of target condition (e.g., What is the environmental significance of a slight change in the slope of a stage duration curve?). Typically, a more-or-less-is-better analysis is performed, and can be expressed as a percentage of the degree of attainment of the target. However, when the effects of all plans are relatively equal, it can be difficult to state the meaningfulness (in terms of the ecological response of the attributes affected by the performance measures) of relatively small differences between plans (e.g., 60%, 61%, and 63% attainment). Therefore, there is some uncertainty in predicting the extent of system-wide change in ecological attributes due to relatively small differences in the hydrologic changes associated with incremental implementation of individual CERP projects.

5.5.5.5 Spatial Extent of System-Wide Effects of Alternative Plans

While the hydrologic model used for CERP project plan formulation and evaluation may effectively demonstrate meaningful changes between alternatives in hydrologic performance measures and where those changes occur (in terms of the model's four-square mile grid cells), describing ecological responses to those hydrologic changes over precise areas has proven to be difficult for many projects (for example, a species may be sensitive to topography, vegetation, and soil conditions, which would in turn affect habitat quality), which are "invisible" to the hydrologic model. Thus, determining the differences in the spatial extent of effects resulting from each alternative plan in an array of plans (for a given ecological attribute) has proven to be difficult to estimate with scientifically defensible certainty. This in turn makes the estimation of the spatial extent of the benefit units (habitat quality x spatial extent) uncertain.

5.5.5.6 Variability of Spatial Response

Determining the individual variable spatial response to hydrologic change of each attribute that is evaluated during plan formulation is also uncertain. Each of the conceptual ecological models (CEMs) that are the basis for the system-wide hydrologic performance measures encompass multiple ecological attributes (for example, snail kite populations, water fowl habitats, and diverse mosaic of native vegetation are all attributes of the Lake Okeechobee CEM). Each attribute may vary independently in the spatial extent of response to differences in hydrology. These variations in area make the assignment of "spatial extent" affected by an alternative plan all the more difficult to determine. If "areas affected" for each attribute were simply summed, the issue of double-counting habitat units could arise as multiple attributes could overlap in the same area affected by multiple projects (e.g., several projects will affect Water Conservation Area 3), and thus the same benefit units could be counted more than once. Similarly, without fully understanding how each attribute responds independently to variations in hydrology (and without a sensitive enough hydrologic modeling tool to depict the spatial extent of the attribute response), it is also likely that not enough benefit units (expressed as habitat units) would be counted, thereby understating the beneficial affects of plans.

5.5.5.7 Ecological Response Time within the Natural System

Although the benefits to water supply and water restrictions would commence immediately upon completion of construction and initiation of operations, the transitions associated with changes in the vegetative communities will be more gradual and increase over time as hydroperiods and hydroperiods within the natural system are altered. Depending on the life cycles, different

resources in the natural system will differ in ecological response time. For example, reductions in phosphorous loading within these two areas resulting from project implementation and ecological uptake will allow for natural competition between cattails and saw grass. The total transition of areas dominated by cattail monocultures to a more desirable *Cladium jamaicense* (saw grass) community will likely take a considerable amount of time. However, the apparent shift to saw grass domination would be anticipated in 1 –3 years.

Other ecological benefits would be limited to specific areas, such as snail kite habitat. Since these habitats are dependent on water stages, especially at critical times of year (nesting) beneficial responses are anticipated to begin immediately with the operations of the impoundment. Actual colonization may take several nesting seasons, however, foraging potential benefits would be immediate.

Other attributes in the natural system such as tree islands would also realize immediate benefits from restoration. However, due to different hydropatterns and rates of sedimentation, differences in the timing and magnitude of restoration in these areas would vary across the natural system. It is predicted that these areas would also serve as wading bird nesting areas, but these nesting activities would occur in specific areas and then spread across the entire natural system as restoration activities continue.

5.5.5.8 Modeling of Various Alternatives

There was a level of uncertainty in calculating habitat units for the alternatives in the BCWPA that did not include all three of the project components. Assumptions were made based on the hydrologic functioning of the project between the “full” alternatives and the “partial” alternatives. Because the partial alternatives showed a decrease of hydrologic function, it was assumed that the habitat function would be similarly reduced. Saw grass marsh habitat units could be calculated on the partial alternatives because those units are derived from total phosphorus loading. Other habitat units (snail kite habitat) could not be derived from existing modeling and were therefore estimated based on the differences between the full alternatives and the partial alternatives of saw grass marsh habitat. Because snail kite habitat is similar in structure to saw grass marsh, the percent change in saw grass marsh habitat was applied to snail kite habitat.

Although this produces a higher level of uncertainty in the numbers of habitat units of the partial alternatives, the conceptual ecological response of full versus partial alternatives remains the same – that is, the partial alternatives do not provide nearly the benefits as the full alternatives.

5.5.5.9 Review and Evaluation Context

It is important to consider the BCWPA project in its CERP-related regional context. If the existing water management infrastructure of Central and Southern Florida is viewed as a metaphorical hose capable of delivering water from the northern end of the system to areas downstream, it should likely be viewed as a hose with many leaks. Metaphorically speaking, the BCWPA features were formulated to patch several of the leaks in the hose, so that existing deliveries and water to be made available by other CERP projects will be more apt to stay in the system so that it can be delivered to meet ecosystem restoration targets.

During review of regional model results, several issues became apparent. First and foremost, the BCWPA elements were formulated to keep water in the regional system without adversely affecting existing legal uses of water. Until such time that CERP delivers additional volumes of water, the volume of water to be retained by the BCWPA projects for delivery through the WCA system is likely limited to that volume of runoff captured by BCWPA projects from and later returned to urban areas. The volume of water retained in the natural system is made available via local detention and use of urban runoff for seepage management and to compensate for reductions in water supply deliveries from the regional system that might occur. Benefits anticipated to result from the BCWPA project include reductions in nutrient loading of the WCAs resulting from a greater capacity for local detention/use of urban runoff, and greater capacity to meet hydrologic restoration targets in the Everglades Protection Area and downstream estuaries via retention of water volumes no longer seeping and/or being delivered from the WCAs.

Discussion: This issue is resolved to the extent practicable.

Action Taken: Section 5.4.2.2 reflects the Sensitivity Analysis of the assumptions in the formulation process and the above information is presented in Section 5.6.4 (Risk and Uncertainty) of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3r. Comment: Selected Plan Outputs (17Nov05 PGM #IIe). Section 3 lacks a concise presentation of the outputs for the selected plan. As such, there is no basis for decision makers to conclude that the costs are warranted by the outputs. A summary of the quantitative outputs and their significance is needed. Section 3.5 beginning on page 3-12 discusses contributions to the interim goals and targets, but only qualitatively. It indicates that the selected plan's outputs are significant locally, but not for the Northern Estuaries, Lake Okeechobee, and Southern Estuaries areas. This implies that the selected plan is project may be particularly effective. What portion of the Everglade restoration goals would be provided by the selected plan?

HQUSACE Initial Assessment: This issue is not resolved. Revise this comment as follows: Section 3 needs to present the quantified and other outputs, including the NAI results, for the selected plan as a basis for concluding that the \$0.5 billion investment is warranted. The outputs should be compared to interim or final Everglades restoration goal and/or target quantities to demonstrate a measurable and significant achievement towards recovery. Contributions to goals and targets are discussed in Section 2.3.4 (page 2-82), Table 2-23 (page 2-83), and Section 3.5 (beginning on page 3-14) without defining and quantifying the goal, targets and/or indicators. Quantified goals and targets are needed as a basis for measuring the technical significance of the selected plan.

CESAJ Response: Table 4-2 in Section 4.4.2 (Evaluation Methods and Models) displays the correlation of the evaluation criteria to the CERP goals, project objectives, the metric used, biological response and the region to which it is applied. This table shows the quantified goals and targets as follows:

TABLE 4-2: PERFORMANCE MEASURES AND EVALUATION CRITERIA

PM#	CERP Goal or Requirement	BCWPA Objectives addressed	BCWPA Project Performance Measure	Metric	Target	Biological Response	Region / Spatial Extent	Models	POC
1.0	Enhance Ecologic Values	1, 2, 3, 5, 6	Seepage water retained in the natural system	Difference in seepage quantities across GW transect along the L-37 and L-33 Levees	0 seepage through the L33/L37 levees	Improve fish and wildlife habitat	WCA 3	SFWMM v3.5 Sub regional model for Broward Co.	Jeff Needle
2.0		1, 2, 3	High and low water levels in WCA 3A And WCA 3B	1) Number of events water levels greater than 2.5 ft above ground level or less than -1 ft. below ground level in POR; 2) Duration in weeks of events (weeks/event); 3) Average annual duration (% of year)	Thresholds predicted by NSM	Reductions in high water events/duration will lessen tree island flooding, help prevent conversion from saw grass to cattail, reduce alligator nest flooding, improve wading bird foraging conditions, and provide better hydrology for periphyton. Decreased low water events will provide less risk of muck fires, less loss of organic soils, and better conditions for aquatic vegetation and periphyton	IR (from 2x2 ver. 3.5) 15 & 16 for WCA 3B and 14, 17, 18, 19, 20, 21, 22 for WCA 3A	SFWMM v3.5 NSM 3.5	Yvette Alger
3.0		1, 2, 4	Average annual TP load reduction into WCA 3A	Structural Phosphorus Load (31-year annual average hydraulic load @ 10 ppb); inflows from S-9	Zero for flow (i.e., no inflows through the S-9 pump) and zero for TP load	Restore and maintain natural populations of flora and fauna	WCA 3A and 3B	NA	Yvette Alger

PM#	CERP Goal or Requirement	BCWPA Objectives addressed	BCWPA Project Performance Measure	Metric	Target	Biological Response	Region / Spatial Extent	Models	POC
4.0		1, 2, 3	Snail Kite - foraging habitat vegetation structure	Average duration of inundation events (weeks /event)	156 to 260 weeks inundation duration	Improve Wildlife Habitat	IR (from 2x2 ver. 3.5) 15 & 16 for WCA 3B and 14, 17, 18, 19, 20, 21, 22 for WCA 3A	SFWMM v3.5 NSM 3.5	Yvette Alger
5.0		1, 2, 3, 5, 6	Inundation Duration	1) Number of inundation events; 2) Avg. flood duration (weeks/event); 3) Avg. annual hydroperiod (% of year)	Thresholds predicted by NSM	Inundation pattern affects tree islands, aquatic vegetation communities and, populations of vertebrates and invertebrates (including apple snails, wading birds, and alligators).	IR (from 2x2 ver. 3.5) 15 & 16 for WCA 3B and 14, 17, 18, 19, 20, 21, 22 for WCA 3A	SFWMM v3.5 NSM	Yvette Alger
6.0		1, 2, 3	Apple snail reproduction	Number of years that water levels on Apr 30 fall below ground	Reduced number of years that water levels fall below ground surface prior to May 1 to match NSM	Improve Wildlife Habitat	IR (from 2x2 ver. 3.5) 15 & 16 for WCA 3B and 14, 17, 18, 19, 20, 21, 22 for WCA 3A	SFWMM v3.5 NSM 3.5	Yvette Alger
7.0		1, 2, 3, 5, 6	Stage variability	1) Average weekly depth; 2) Avg. max weekly depth; 3) Avg. min weekly depth; 4) Annual amplitude change (7-day max depth minus 7-day min depth in calendar year)	Thresholds predicted by NSM	Stage variability affects vegetative community structure.	IR (from 2x2 ver. 3.5) 15 & 16 for WCA 3B and 14, 17, 18, 19, 20, 21, 22 for WCA 3A	SFWMM v3.5 NSM 3.5	Yvette Alger

PM#	CERP Goal or Requirement	BCWPA Objectives addressed	BCWPA Project Performance Measure	Metric	Target	Biological Response	Region / Spatial Extent	Models	POC
8.0		1, 2, 3	Restore number & acres of functional tree islands in WCA 3A and 3B	1) Acres of trees islands 2) Number of tree islands	Restore the acres and number of tree islands within the envelope of expected results from NSM	Improve spatial extent of natural habitat.	WCA3A and 3B	SFWMM v3.5 ELVM NSM 3.5	Jennifer Leeds (SFW MD) Yegan g Wu (SFW MD)
9.0		1, 2	Cattail expansion rate reduction	Rate of cattail expansion in WCA 3A and 3B	Reduce rate of cattail expansion to 0	Improve spatial extent of natural habitat.	WCA 3A and 3B	ELVM (SAWCA T module)	Jennifer Leeds (SFW MD) Yegan g Wu (SFW MD)

Discussion: The Table provided in the response is helpful, but headquarters asked how the recommended plan compares to the targets in Table 4-2?

Action Required: The final PIR is to be revised to describe how the recommended plan achieves the targets presented.

Action Taken: Table 7-10 in Section 7.8.2 describes how the recommended plan achieves the targets presented.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3s. Comment: Rounding (17Nov05 PGM #IIg). The cost estimates beginning with Table 2-25 on page 2-87 should be rounded to the nearest \$1000. Otherwise the report implies a level of accuracy and precision that simply does not exist.

HQUSACE Initial Assessment: This issue is not resolved. The cost estimates in Table 2-30 on page 2-105 should be rounded to the nearest \$1,000.

CESAJ Response: All cost tables in the main report have been modified so that the estimates are to the nearest \$1,000. The cost tables are Table 5-8, Table 5-9, Table 5-10, Table 5-11, Table 5-13, Table 5-14, Table 5-15, Table 5-16, Table 5-24, Table 6-1, Table 7-3, Table 7-4 and Table 8-1.

Discussion/Action Required: No discussion. Check all tables and text; round appropriately.

Action Taken: For consistency all costs tables are rounded to the nearest \$10,000 as requested in 3m and previous PIR for Site 1.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3t. Comment: Schedule (17Nov05 PGM #Iik). The schedule presented in Section 3.6.1 on page 3-17 needs to be adjusted for authorization needs. Also, the section should also include milestones for signing the Record of Decision and executing PCA's.

HQUSACE Initial Assessment: This issue is partially resolved. Section 3.6.1 on page 3-18 should note that the Secretary cannot consider awarding credit for the SFWMD design and construction work until the recommended project is authorized and funds are appropriated by Congress. The section now includes milestones for the Record of Decision and PCA.

CESAJ Response: In the final PIR, the schedule is described in Section 8.1.1. A sentence was added regarding credit to the SFWMD. This section now reads:

8.1.1 Schedule

Availability of this Final PIR/EIS is scheduled for July 2006. The Record of Decision (ROD) is anticipated to be signed in November 2006 and a fully executed Project Cooperation Agreement (PCA) is anticipated in November 2007. SFWMD commenced engineering design in late 2004 under the Acceler8 program with survey and subsurface geotechnical investigations. It is anticipated that construction on the C-9 STA/Impoundment and the WCA 3A/3B Seepage Management Area by the SFWMD will begin in July 2006. The construction of the C-11 Impoundment and required canal modifications is expected to begin in August 2006. The Assistant Secretary of the Army for Civil Works (ASA(CW)) cannot consider awarding credit for the SFWMD design and construction work until the recommended project is authorized and funds are appropriated by Congress.

Discussion: The ROD should not be signed until OMB clears the project construction new start, the District should revise the proposed date accordingly. Since the PIR should not commit the ASA(CW) to any particular action, headquarters suggests revising the last sentence to state, "A request for credit for the SFWMD design and construction work will be forwarded to the Assistant Secretary of the Army for Civil Works (ASA(CW)) after the recommended project is authorized and funds are appropriated by Congress."

Action Required: The final PIR language regarding crediting should be consistent with the Site 1 Impoundment Project.

Action Taken: The Final PIR language regarding crediting was formulated utilizing Site 1 and the latest guidance provided by Counsel at HQUSACE.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3u. Comment: OMRR&R (17Nov05 PGM #III). The OMRR&R activities should be described and estimated costs should be displayed for each of the four projects. Similar information should be displayed separately for the recreation features.

HQUSACE Initial Assessment: This issue is not resolved. Revise this comment as follows: Section 3.1.1 should briefly describe the anticipated OMRR&R activities separately for the main project and for recreation. Section 3.6.2.4 should display separate OMRR&R cost estimates for the main project and for recreation since the cost sharing responsibilities are different (100 percent non-Federal for recreation and 50/50 for the rest of the OMRR&R) as discussed in Section 3.6.2.7. The estimated OMRR&R costs displayed on page 4-2 of the District Engineer's Recommendation should be revised accordingly.

CESAJ Response: The original HQ comment was as follows: "The OMRR&R activities should be described and estimated costs should be displayed for each of the four projects. Similar information should be displayed separately for the recreation features." The response to that comment is as follows: "The BC WPA PIR/EIS has been recommended and packaged as a single project. Section 3.6.2.4 reflects the single project with one OMRR&R cost included in the paragraph. OMRR&R features for Recreation have also been reflected as a 100% non-Federal expense."

The final report has been modified. The section number has changed (new section 6.6.2) and is given here in its entirety:

6.6.2 Operation, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R) Cost
Annual operations and maintenance costs were estimated for the construction features of the recommended plan for BCWPA. The operation and maintenance costs were determined by extrapolation from operational costs histories supplied by the South Florida Water Management District (SFWMD), by using industry standard cost data and by using data from past and projected cost trends. The average (OMRR&R) costs are estimated to be \$1,867,000. This includes ecologic and water quality monitoring associated with the project level Adaptive Assessment Program described in *Annex G*. Recreation costs have been estimated at approximately \$5xx,000. The non-Federal sponsor is responsible for 100 percent of the OMRR&R recreation costs.

Discussion/Action Required: The District will revise the final PIR to generally describe the types of OMRR&R activities; e.g., moving, weed control, etc.

Action Taken: Section 7.6.2 includes a description of the types of OMRR&R activities.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3v. Comment: Mitigation/Enhancement/Restoration (17Nov05 PGM #IIIm). Terminology use can cause unintended consequences, particularly regarding Federal budget priorities. The second sentence in Section 3.6.6.3.3 on page 3-27 uses the terms "enhancement" and "restoration" to describe work in a "mitigation" context. All three of these terms trigger different treatments in the Federal budget process. Although, the CERP budget priorities are unlikely to be affected by

this text, questions from higher authority could be reduced by deleting the two words or using other terms. The rest of the presentation on mitigation should probably be checked for any inadvertent use of the terms “*enhancement*” and “*restoration*.” For example, the next paragraph misuses the term “*enhancement*” in four places. Also, Section 1.3.4 on page 1-26 discusses “*the goal of enhancing ecologic values*”. Wouldn’t “*restoring*” be more appropriate?

HQUSACE Initial Assessment: This issue is not resolved. Sections 1.3.4 on page 1-26 and Section 3.6.5.5 on page 3-36 still use term “*enhancement*” in various forms where “*restoration*” or “*mitigation*” would be more appropriate. See paragraph E-28.d, ER 1105-2-100, for a definition and an explanation of why “*enhancement*” is inappropriate.

SAJ Response: The original HQ comment was as follows:
“Mitigation/Enhancement/Restoration. Terminology use can cause unintended consequences, particularly regarding Federal budget priorities. The second sentence in Section 3.6.6.3.3 on page 3-27 uses the terms “*enhancement*” and “*restoration*” to describe work in a “*mitigation*” context. All three of these terms trigger different treatments in the Federal budget process. Although, the CERP budget priorities are unlikely to be affected by this text, questions from higher authority could be reduced by deleting the two words or using other terms. The rest of the presentation on mitigation should probably be checked for any inadvertent use of the terms “*enhancement*” and “*restoration*.” For example, the next paragraph misuses the term “*enhancement*” in four places. Also, Section 1.3.4 on page 1-26 discusses “*the goal of enhancing ecologic values*”. Wouldn’t “*restoring*” be more appropriate?”

The response to that comment is as follows: “The mitigation section has been revised to remove the terms *enhancement* and *restoration*.” That section is now 7.2, in particular section 7.2.4 which is given below.

Regarding the reference to section 1.3.4, that section has been deleted from the report.

7.2.4 Proposed BCWPA Compensatory Mitigation Measures

The 107.7-acre Weston Increment III site, the 2.6-acre White Construction littoral zone, and the 781-acres associated with the Sunset Lakes mitigation areas would not be adversely affected by construction and operation of the impoundments, nor would implementation of the project result in a loss of the spatial extent of wetlands established by these mitigation areas. Consistent with the PEIS, the Corps has determined a compensatory mitigation plan to replace these areas is not needed at this time. Site specific monitoring would be conducted for each impoundment to document and ensure that the environmental benefits of these mitigation areas are not compromised by the project.

The 119.93-acre Weston Increment III mitigation area would be adversely impacted as a result of construction and operation of the C-11 Impoundment. Replacement compensation will be provided within the C-11 and C-9 Impoundments through incorporation of fish and wildlife habitat features. Costs for this work are included in the cost estimate for the selected plan.

The tentatively selected plan for the BCWPA project recommends several fish and wildlife design features that were described in the USFWS Planning Aid Report for the Water Preserve Areas Feasibility Study dated November 22, 1999. Partial compensation for 404 mitigation

losses could be obtained through the implementation of these habitat features and other viable measures which are not part of the future-with project condition that was evaluated for benefits.

The fish and wildlife habitat features presently proposed include partial backfilling of rock mining or borrow pits and the creation of littoral shelves, fish refugia, and marsh wetlands. These features are shown in *Figure 7-2, Figure 7-3 and Figure 7-4*. The WPA Feasibility Report included an additional compensation measure, the removal of exotic plants which is discussed below but not included in *Table 7-8*. It is important to note that these features are presented as compensation opportunities. As recommended by the resource agencies, these opportunities will be refined to maximize habitat during the detail design phase of the project. Descriptions of the proposed fish and wildlife habitat features are presented below.

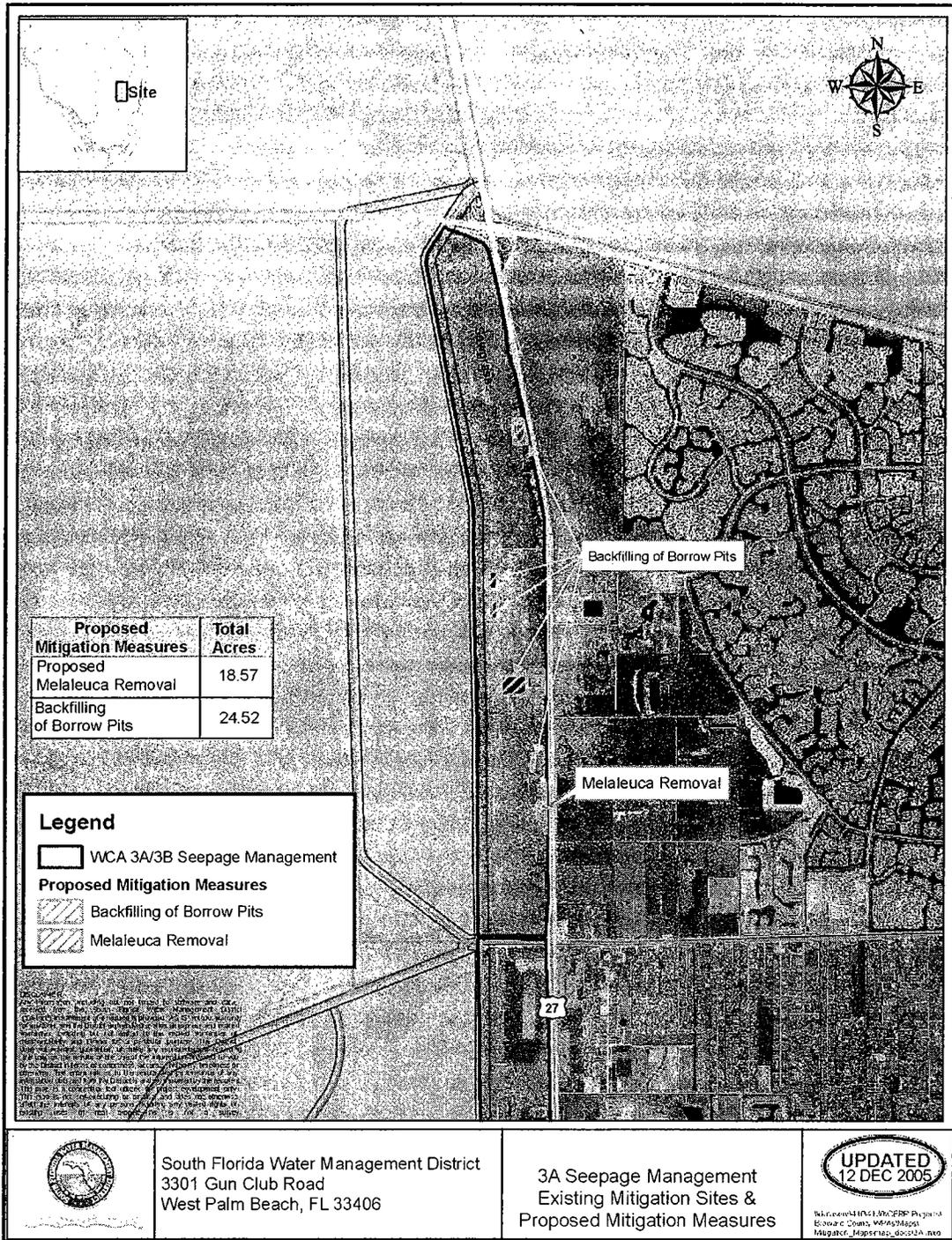


FIGURE 7-4: EXISTING MITIGATION SITES AND PROPOSED MITIGATION MEASURES WITHIN 3A SMA

A multi-agency team performed WRAP evaluations of the WPA during the Feasibility Study. This team evaluated existing conditions, future without project conditions, and future with project conditions for the lands within the WPA components. This evaluation was used by the

multi-agency team which performed the WRAP evaluation of the existing mitigation sites in 2002 to determine the level of wetland function expected to be gained by the compensation measures in order to determine if the measures were adequate to replace the established wetland mitigation areas.

The C-9 and C-11 Impoundment sites were historically part of the Everglades wetland system. Although impacted by agricultural activities, residential development, and mining, the sites are predominantly wetland habitats. Based on the WRAP performed by the multi-agency team, most of the compensation measures would be constructed within existing wetland areas thus the existing condition FCI for the compensation measures shown in *Table 7-8* indicates the level of wetland function currently being provided. It should be noted that a formal wetland jurisdictional determination in accordance with the *Corps 1987 Wetland Delineation Manual* has not been conducted. Prior to implementation of the compensation measures, a jurisdictional determination would be performed by the Corps Regulatory Division and the existing condition for any proposed compensation measure located in areas identified as nonjurisdictional uplands would be adjusted to zero. This would result in a greater delta or lift and therefore more FCUs provided by the compensation measure than estimated herein.

The evaluation and assessment of the functional lift gained for each proposed compensation measure is shown in *Table 7-8*. It should be noted that the evaluation does not make adjustments for the future without-project condition since under this condition, the mitigation areas would remain under perpetual protection. The evaluation also does not include adjustments for temporal lag and risk as included in most regulatory mitigation evaluations. Risk of failure is not anticipated since the work would be performed as part of the Federal project with requirements for monitoring and adaptive management so that benefits are realized. Thus there is little risk of the compensation measures failing. The habitat features will be constructed/implemented as early as feasible prior to or at the same time the mitigation areas are impacted thus there should be no time loss from the point at which the functions at the existing mitigation sites are impacted to the point at which the replacement measures start providing function. Final adjustments to the design of these features and mitigation evaluation will be made during design phase and when the jurisdictional delineation is completed and will include adjustments to the existing condition FCI and future with-project FCI. Site-specific monitoring plans will be developed to evaluate and assess the aquatic resource functions and benefits provided by the habitat features to ensure the projected FCIs are achieved.

7.2.4.1 Backfilling Borrow Pits

Borrow pits and/or mined quarry lakes identified within the design regions will be partially backfilled with excavated spoil material. It is anticipated that peat material unsuitable for the construction of levees but suitable for wetland construction would be utilized. Filling the lakes to depths of 5-6 feet and creating littoral shelves around lake perimeters will establish aquatic plant vegetation. Once the aquatic plant vegetation becomes established, the habitat will begin to support aquatic organisms and provide function and value to wetland dependent species. Wildlife utilization will increase as aquatic and wetland plants will provide cover, food, filtering, and other benefits. The borrow pits would be constructed with shallow littoral zones and varying depths so as to provide strata for flora and fauna.

Approximately 29 acres of borrow pits are proposed to be backfilled in the C-11 Impoundment and 24.52 acres within WCA 3A Seepage Management Area. The existing condition of the borrow pits is 0.43 and 0.52 FCI and the future with-project was estimated to be 0.73 and 0.78 FCI for C-11 Impoundment and WCA 3A Seepage Management Area respectively.

7.2.4.2 Littoral Shelves

Thirty-foot wide littoral shelves will be incorporated into seepage canals at the C-11 and C-9 Impoundments. Littoral shelves would not be constructed in canals used primarily for water conveyance due to maintenance problems.

Construction of the littoral shelves would occur by excavating a shallow sloping self on the landward side of the existing canal banks rather than through creation of shelf within the confines of the existing canal. According to the proposed design, a shelf approximately 30 feet wide with depths of up to 2 feet would be constructed outside of the water conveyance area.

The boundary seepage canals have optimum water levels that are maintained for seepage control. The design takes advantage of the near constant water levels to create an excellent environment for the growth of submerged aquatic vegetation for waterfowl, while maximizing wading bird foraging opportunities by concentrating baitfish within the littoral zones.

Approximately 10.1 acres of littoral shelves are proposed for the C-11 Impoundment and 10.6 acres for the C-9 Impoundment for a total of 20.7 acres of highly productive, 1-2 feet deep littoral shelves. The multi-agency team estimated the future-with project condition of the littoral shelves to provide a FCI of 0.65.

7.2.4.3 Fish Refugia

Fish refugia can be created in C-11 and C-9 Impoundments by the excavation of borrow material inside the impoundments for the purpose of constructing the perimeter levees. The excavation borrow provides shallow water fish refuges during periods when the impoundment pool elevation approaches average ground elevation. Fish refugia would be designed similar to a deepwater marsh, however, in order to achieve maximum usage by wildlife, depths should not be constant but vary similar to a natural system.

Locations proposed include 84.2 acres in the C-11 Impoundment and 51.82 acres in the C-9 Impoundment. The multi-agency team estimated the future with project condition to provide a WRAP FCI of 0.73.

7.2.4.4 Marsh Wetlands

The BCWPA project is proposing the conversion of 102.3 acres of state owned property located in the northern section of the C-11 component, to a marsh wetland. The area can be characterized as a highly degraded wetland dominated by exotic plant species (i.e., Brazilian pepper) and drained as a result of adjacent development. The area can be cleared, graded to suitable wetland elevation, rehydrated, and planted with native wetland plant species. Using the Weston Increment III mitigation sites as a reference, the WRAP FCI is estimated at 0.75 for the future with-project condition.

TABLE 7-8: PROPOSED COMPENSATION MEASURES

Proposed Compensation Measures	Polygon	Acres	Existing FCI	Future With FCI	Delta	FCUs
Shallow Borrow Pits	C-11 Impoundment	29	0.43	0.73	0.3	8.7
Shallow Borrow Pits	WCA 3A	24.52	0.52	0.78	0.26	6.38
Littoral Shelves	C-11 Impoundment	10.1	0.51	0.665	0.155	1.57
Littoral Shelves	C-9 Impoundment	10.6	0.75	0.65	-0.1	-1.06
Fish Refugia	C-11 Impoundment	84.2	0.4	0.73	0.33	27.79
Fish Refugia	C-9 Impoundment	51.82	0.58	0.73	0.15	7.77
Marsh Wetland	C-11 Impoundment	113	0.46	0.75	0.29	32.77
Total						83.92

Discussion/Action Required: Check all text and include corrected information as described above.

Action Taken: The terms “*enhancement*”, “*restoration*” and “*mitigation*” are correctly used throughout the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3w. Comment: Monitoring (17Nov05 PGM #IIIn). Section 3.8 on page 3-35 summarizes the proposed monitoring efforts. The section needs to describe monitoring efforts in two categories, construction funded and OMRR&R. The duration of the construction related monitoring should be identified and the costs displayed as a line item in Table 3-4.

HQUSACE Initial Assessment: This issue is not resolved. The descriptions in Section 3.8 on page 3-47 should be moved to and included in the Section 3.1.1 presentation of the selected plan. Identify any differences between monitoring during construction and OMRR&R. If there are none, say so. The duration of the construction related monitoring should be identified and the costs displayed as a line item in Table 3-4.

CESAJ Response: Monitoring is now described in Section 6.5 of the PIR. Costs are in Section 6.6.3 split into construction and OMRR&R funded. Table 6-1 (formerly 3-4) has been revised to include monitoring costs.

Discussion/Action Required: The duration of the construction related monitoring should be identified and the costs displayed as a line item in Table 3-4.

Action Taken: Costs for monitoring are broken out and described in Sections 7.5 and 7.6 of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3x. Comment: MCACES (17Nov05 PGM #IIo). Summary MCACES estimates should be presented for each of the four projects.

HQUSACE Initial Assessment: This issue is not resolved. As described in Section 1.4 of the Final Draft Guidance Memorandum #1, the Programmatic Regulations require a discussion of any significant changes in cost or scope of the projects from those presented in the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement, dated April 1, 1999. In order to assess whether there are any significant cost changes, this PIR must present the costs for the C-9 Impoundment and STA project, C-11 Impoundment and STA project, WCA 3A/3B Levee Seepage Management project, and the C-502B Borrow Canal feature portions of the recommended plan. Also, basic information on the portion of the North New River Improvements project to be implemented here should be documented in this PIR in order to support and facilitate analyses in the pending PIR (and Section 902 cost limits) on the North New River Improvements project. These costs should be presented in Section 3.1.1 using the same format as Table 3-4.

CESAJ Response: An updated MCACES is included in Appendix B Cost Engineering. The costs have not been shown separately for each component. The issue of authorization requires additional discussion and resolution at the FRC. The modifications to the C-502B Borrow Canal is included as part of the C-11 Impoundment feature. Therefore, the North New River Improvements project does not need to be documented in this PIR (see response to comment j above).

Discussion: The District explained that only a portion of the North New River Canal project as proposed in the Comp Plan is proposed to be included in this project. The remaining original project features are being evaluated as part of the Decentralization (DECOMP) PIR. The District therefore does not want to deauthorize the North New River Canal project. It was agreed the PIR should be modified to describe this overlap. In addition the PIR should indicate the project costs associated with the North New Canal feature.

Action Required: The final PIR, MCACES estimate will be revised to show the costs associated with the North New Canal project elements.

Action Taken: The MCACES costs have been updated to reflect the costs for North New River Broken, but are somewhat difficult to tease out. For ease of review those costs are broken out in Table 7-5 of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3y. Comment: Cultural Resources Survey (17Nov05 PGM #IIp). Page 2-65 states that a survey is underway. The survey needs to be completed and the results incorporated into the final report, including mitigation requirements.

HQUSACE Initial Assessment: This issue is not resolved. Page 2-53 still indicates cultural resources survey and interagency coordination is underway. The survey must be completed and the results incorporated into the final report, including cultural resources mitigation requirements.

CESAJ Response: A Phase II survey for cultural resources was completed and the information from this assessment was included in Sections 2.14 and 7.1.14 as follows:

2.14 CULTURAL RESOURCES

The National Environmental Policy Act of 1969 requires projects of federal undertaking to identify both known and unknown cultural resources within the project area and the potential effects the project will have on them. Consultation is ongoing with the Florida State Historical Preservation Officer (SHPO) and the Advisory Council on Historical Places (ACHP), in accordance with the Archaeological and Historic Preservation Act of 1974 (PL93-291), as amended; the National Historic Preservation Act of 1966 (PL89-665), as amended through 2000 in accordance with the Section 106 process and Executive order 11593. Site visits, archival research, field investigations, and consultation with the SHPO, Native American Tribes and other concerned parties to make a determination of significance will continue until the Section 106 process is completed. If field investigations and research identifies cultural resources within the project area that are determined to be eligible or potentially eligible for the National Register of Historic Places, further measures will be taken to avoid, minimize, or mitigate adverse impacts to such sites. Project construction will not commence until coordination with the SHPO and other concerned parties is complete.

An archival review in 2005 of the Florida Master Site Files indicated three known cultural resources within the BCWPA project area. Today, the project area is heavily overgrown with invasive vegetation such as Australian pine, melaleuca and Brazilian pepper. Although commercial nurseries, rock mining, and livestock grazing take place within the project area, a review of topographical maps, satellite imagery, and historical aerial photos shows evidence of possible hammocks in and near the project area, which have the possibility to contain additional undiscovered historical properties. A Phase I survey determined there were no undiscovered cultural resources within the C-9 Impoundment; however, three potentially significant prehistoric sites were documented within the C-11 Impoundment. A subsequent Phase II survey of the C-11 area discovered human remains within the three sites and a fourth site immediately outside BCWPA was determined to contain Native American burials. Under Florida Statute 872.05, and upon the discovery of human remains, the appropriate Native American Groups were notified, and the remains immediately re-interred. If any human remains are identified in the data analysis phase, they will be returned to the appropriate site and re-interred. Due to the cultural sensitivity of these sites, further coordination with the Native American Tribes and mitigation is necessary. Consultation and field research is in accordance with the National Historic Preservation Act, as amended; the Archeological and Historic Preservation Act, as amended; Executive Order 11593 and 36 CFR Part 800 (Protection of Historic Properties).

7.1.14 Cultural Resources

“No Action” Alternative

Under the “No Action” alternative, the proposed C-9 and C-11 Impoundment Areas would probably be developed for residential and commercial uses. This would result in the destruction of the three known historical properties within the C-11 Area. A prehistoric site to the south of the C-11 Impoundment is a known mortuary site and will be avoided.

Alternatives F2 and F4

A Phase II Survey was conducted on the three known archaeological sites within the footprint of the proposed C-11 Impoundment. All three sites are middens which contain human remains and both floral and faunal artifacts. All three sites are potentially eligible to the National Register of Historic Places. For all alternatives, land disturbing activities during construction, such as clearing and grubbing, will have an adverse effect on the sites. Once the C-11 Impoundment is constructed, increased water levels could further adversely affect these sites. It is not anticipated that any of these alternatives would have any effect on historical resources within the WCA 3A and 3B seepage management areas. A prehistoric site to the south of the C-11 Impoundment area is a known mortuary site and will be avoided.

Alternatives A3 and A4

In addition to the proposed C-11 Impoundment, Alternatives A3 and A4 include the proposed C-9 Impoundment. A Phase I Survey of the C-9 Impoundment was conducted, however, there are no known archaeological sites located within the C-9 Impoundment footprint. The effects to cultural resources within the C-11 Impoundment would be the same for Alternatives A3 and A4 as for Alternatives F2 and F4. Construction of the C-9 Impoundment would not adversely affect any known historical resources located within the footprint. It is not anticipated that either alternative would have any effect on historical resources within the WCA 3A and 3B seepage management areas.

All five alternatives have the potential to adversely impact known cultural resources within the C-11 Impoundment by ground clearing and changing the water level. These sites are known to contain human remains and have been determined to be significant. Further consultation with the SHPO, Native American Tribes and other interested parties is necessary to determine mitigation measures. Possible mitigation measures include avoidance of sites, data recovery or construction of a protective berm around the sites. A prehistoric site to the south of the C-11 Impoundment area is a known mortuary site and will be avoided.

Discussion/Action Required: This issue will be **resolved** by inclusion of the above response in final PIR.

Action Taken: The most recent information has been incorporated into the PIR in Sections 2.15 and 6.1.15 regarding the cultural resources investigations.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3z. Comment: Project Purpose (17Nov05 PGM #IIq). Section 1.1.3, page 1-7, does not talk about the need for ecosystem restoration, the basis of Federal interest. The pages that follow talk as if the purpose of the project is to move and store water. It's not until Section 1.3.7.5 on page 1-33 that the report reveals that the primary and most pertinent purpose is to restore the ecosystem function. The purpose statements should incorporate the ecosystem restoration purpose from page 1-33 and from pages 1-26 and 1-27.

HQUSACE Initial Assessment: This issue is not resolved. Moving and storing water is a function, not a Federal water resource project purpose. The project purpose needs to be stated in a manner consistent with the primary missions of the Corps of Engineers Civil Works program (see Section 3-1, ER 1105-2-100).

CESAJ Response: The original HQ comment was as follows: Project Purpose. Section 1.1.3, page 1-7, does not talk about the need for ecosystem restoration, the basis of Federal interest. The pages that follow talk as if the purpose of the project is to move and store water. It's not until Section 1.3.7.5 on page 1-33 that the report reveals that the primary and most pertinent purpose is to restore the ecosystem function. The purpose statements should incorporate the ecosystem restoration purpose from page 1-33 and from pages 1-26 and 1-27.

The response to that comment is as follows: This section was rewritten in accordance with draft GM#1 dated February and March 2006. The project purpose of ecosystem restoration should be more clearly understood from this section, Section 1.3, as follows:

Section 1.3 Purpose and Scope

The C&SF project as constructed had unintended negative impacts to WCA 3A and 3B which are part of the remaining historic Everglades. These areas are integral elements of the existing water management system of south Florida, and are adversely affected by municipal water withdrawals and storage of untreated stormwater. Discharges of stormwater into these areas have caused severe eutrophication that, in turn, has created monocultures of cattails. These changes in vegetative structure alter habitat utilization by native fauna. Municipal withdrawals of groundwater from adjacent well fields lead to higher rate of seepage out of the WCAs during the dry season stressing the ecosystem beyond that of natural seasonal change. All of these factors have lead to significant stress on the aquatic environment and the destruction of natural habitat within a portion of the remainder of the historical Everglades.

The purpose of the BCWPA study is to investigate alternative plans to moderate the damaging effects of extreme high and low water events on fish and wildlife habitat in WCAs 3A and 3B and ways to moderate the harmful effect of excess nutrients on Everglades marshes. The 4,312 acre seepage management area component provides an opportunity to increase the spatial extent of functional fish and wildlife habitat within the study area. In addition to improving environmental conditions in WCA 3A and 3B, the BCWPA will also beneficially affect downstream areas of Everglades National Park.

Runoff from western Broward County is presently discharged via the C&SF Project S-9 pump station to WCA 3A to maintain flood protection in the C-11 Canal basin. This creates harmful conditions for fish and wildlife in the Everglades (WCAs), since typically flood control

discharges occur when water levels in the natural system are already high. Capture and storage of excess water in the C-11 Canal basin would minimize the harmful effects of flood control release on water levels in the Everglades and reduce the demand on the regional water management system for water supply and aquifer protection during dry periods, thereby increasing the quantity of water available for fish and wildlife in natural system areas, including the Everglades. Discharges to maintain flood control also result in excess nutrient (phosphorus and nitrogen) loading into Everglades marshes, which causes a shift in vegetative cover and further contributes to loss of ecosystem function (e.g., decline in breeding, nesting and forage areas for fish and wildlife).

Further, natural system water within the Everglades seeps (via groundwater movement into the adjacent canal system) out of the Everglades into developed areas due to the highly transmissive aquifer underlying the study area and the construction of the C&SF Project and associated secondary and tertiary drainage features. Seepage of water out of the natural system also contributes to decline of ecosystem function in the study area, since seepage effects are increased during dry periods when water is withdrawn from the natural system for water supply and protection against salt-water intrusion into drinking water aquifers.

Excess water in the study area is also discharged to tide via the C-9 Canal. Capture and storage of water that is currently released to tide would reduce the demand on the regional water management system for water supply and aquifer protection, thereby increasing the quantity of water available for fish and wildlife in natural system areas, including the Everglades.

Finally, due to intense development in the southeastern coastal area of South Florida (including the effects of drainage and water supply projects such as the C&SF Project), there has been a significant loss in the spatial extent of fish and wildlife habitat throughout the region, and that trend is expected to continue.

The BCWPA PIR carries forward the planning and project implementation of the C-11 and C-9 Impoundments and the WCA 3A/3B Levee Seepage Management Area (SMA) from the Restudy.

Discussion/Action Required: Inclusion of the information in the above response will **resolve** this concern.

Action Taken: Section 1.3 of the PIR has been updated to reflect the intended purpose of this study.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3z² Comment: Comment 2 a [Bishop and Nixon property] (17Nov05 PGM #IIv). RE does not reference the Bishop and Nixon property issues

CESAJ INITIAL RESPONSE: Section F.21 HAZARDOUS, TOXIC OR RADIOLOGICAL WASTE (HTRW) discusses the proposals related to the HTRW on the Bishop-Nixon property.

At the time of the Draft Real Estate Plan, there were two options. The first was for SFWMD, at its expense, to remediate the site at an estimated cost of \$10 million dollars. The second option was for SFWMD to isolate the property with a berm and isolated wetland at an initial cost estimate of \$600,000. The Selected plan now includes the following: "The L-502E Berm is a scrape formed berm surrounding the formerly known as Bishop-Nixon properties/tracts. The tracts are a center of HTRW issues and it was decided by the non-Federal sponsor SFWMD to omit these tracts from the project at this time. The berm will function by containing runoff from the site until such water is proved to have no impact to the surrounding wetlands. For this reason, the berm is to be constructed with surrounding material knowing that the berm will degrade with time. The HTRW is not considered high risk, which allows this assumption to be valid and considered sound design. The berm design crest elevation is 8.00 ft-NGVD, which provides 1.5 feet of levee superiority when 3B SMA is at design wet season control stage of 6.50 ft-NGVD. The design height is also thought adequate, as the FEMA 100-year flood is approximately 8.00 ft-NGVD." This language will be added to the Real Estate Appendix for the Final PIR.

HQUSACE Initial Assessment: – This comment concerning HTRW issues is **partially resolved**. The following must be provided to complete resolution of this comment:

- (1) Bishop/Nixon parcel is described as 10 acres in section E.21 and 7.92 acres in section 3.6.5.3. The District should present consistent acreage information in all sections of the Draft Report and the Real Estate Appendix.
- (2) Section 3.6.5.3 states that due to the \$10 million remediation cost, the SFWMD will not pursue the purchase of the Gateswell/Bishop-Nixon parcel. E.21 leads the reader to believe that SFWMD is still evaluating whether to acquire or isolate the tract. The REP should be consistent with section 3.6.5.3.

CESAJ Response: Section 3.6.5.3 was deleted in the Final PIR. HTRW is addressed in the Final PIR in Sections 2.13 Existing Conditions/Affected Environment and Section 7.1.13 Environmental Effects of the Selected Plan. The acreage in each of these sections for the Bishop/Nixon tracts are 7.92 acres. Appendix F Real Estate Plan, paragraph F.21 Hazardous Toxic or Radiological Waste (HTRW) has been modified as follows:

A review of the HTRW database indicates that there are several solid waste landfills and other waste disposal sites, including potential HTRW disposal sites, located within and in the vicinity of project lands. The 7.92-acre Bishop/Nixon parcel located within the WCA 3A/3B Levee Seepage Management component was identified as a potential HTRW disposal site that necessitated additional environmental assessment. A previous Phase I/II Environmental Assessment addressing the subject parcels was completed by Environmental Consulting & Technology, Inc. (ECT) in November 2002. This investigation was conducted on the periphery of the subject area. In order to refine the potential liability associated with acquiring/excluding the subject properties, a Phase III Environmental Assessment was conducted in November 2003. Based on the Phase III Assessment report, the results of soil sampling indicated detections of various compounds, including metals, pesticides and petroleum constituents. The analytical data indicates that exceedances of the Soil Cleanup Target Levels (SCTLs) were noted in all soil borings and solid waste was detected in every soil boring installed. The soil impacts are directly

attributed to the illicit land filling activities. Groundwater sampling results also indicated positive detections of various compounds. Multiple exceedances of Groundwater Concentration Target Levels (GCTLs) for ammonia, lead, bis(2-ethylhexyl), phthalate, chloroform and benzene were identified. The groundwater impacts are also attributed to the land filling activities. These chemical analyses suggest that there may be an issue associated with the high levels of ammonia detected in the groundwater and the surface soils. Ammonia within the groundwater of the Bishop/Nixon property may pose some risks to aquatic life if the property was converted into a water retention reservoir and the water seeps into the reservoir at rate such that less than a 10-fold dilution (per NOAA 1999) is achieved. In addition, there exists the potential for ammonia and other toxic substances to migrate from the landfill into a water retention reservoir installed in the vicinity of the property.

In an effort to reduce the risks associated with the presence of the landfill, a berm will be constructed around the site excluding it from the WCA 3B SMA. The L-502E Berm is a scrape formed berm surrounding Bishop/Nixon properties/tracts. The berm will function by containing runoff from the site until such water is proved to have no impact to the surrounding wetlands. SFWMD would construct a buffer area surrounding the landfill area with the installation of constructed wetland within the buffer. Construction of the berm, buffer area and wetland is estimated at \$600,000, which would be a 100% non-Federal cost.

HTRW sites east of project lands are not expected to adversely affect project implementation, as the surface and groundwater flow gradients are eastward, away from project lands. Surface and groundwater will be monitored as part of project operations to ensure that HTRW materials in the vicinity of the project lands are not adversely affecting the attainment of project goals and objectives.

Action Required: Incorporate response into final PIR.

Action Taken: Section 3.6.5.3 was deleted in the Final PIR. Section 2.13 and Section 7.1.13 of the Final PIR, paragraph F.21 (Appendix F -- Real Estate Plan) have been modified to incorporate the above information.

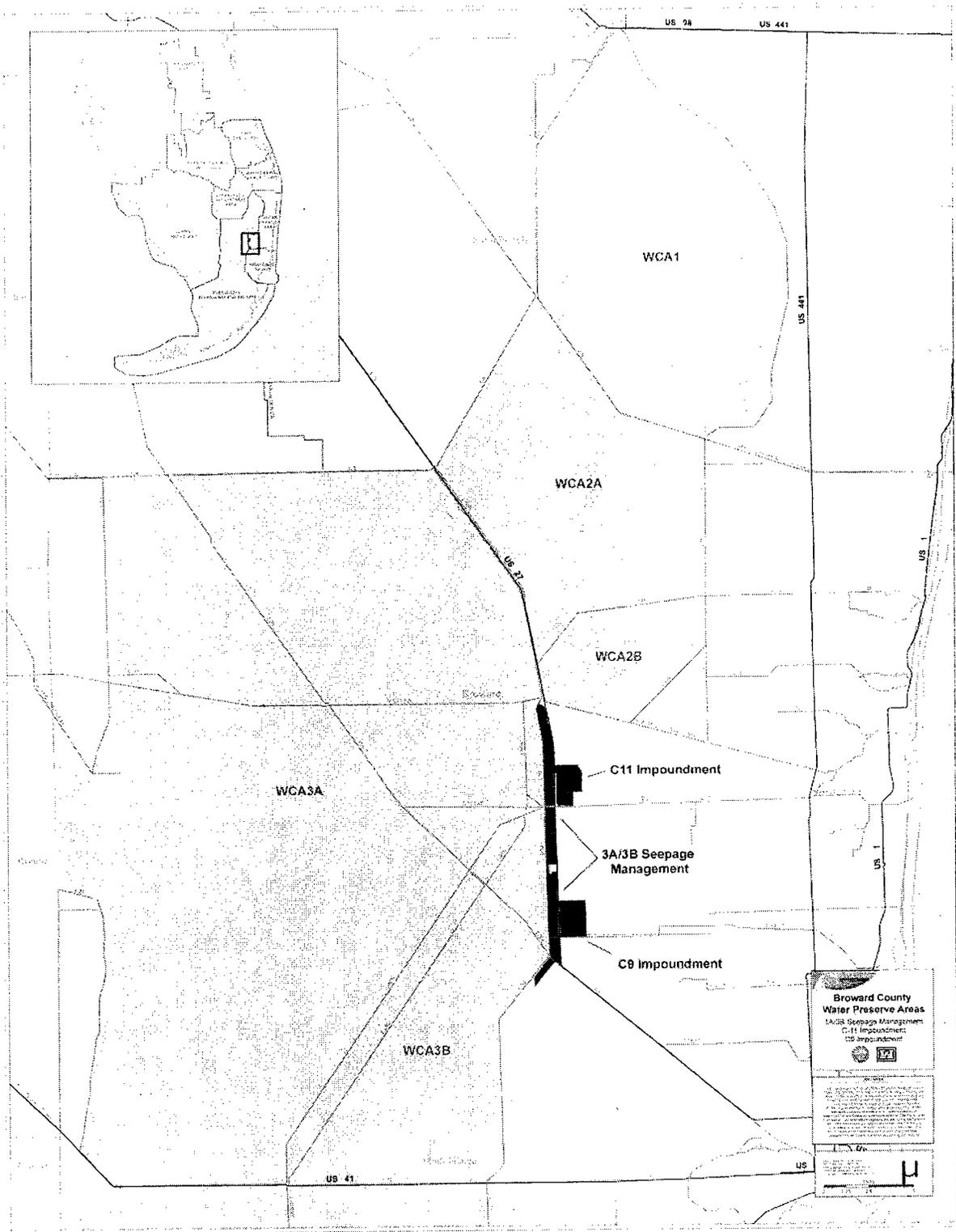
HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

3aa. Comment: Figures 1-1 and 1-2 (17Nov05 PGM #IIR). These figures are not legible. A legend should be added to Figure 1-2.

HQUSACE Initial Assessment: This issue is not resolved. These two figures remain illegible and without a legend. Other figures throughout the report, appendices and annexes are unintelligible because the scales are too small, they were created in color and did not reproduce well in black and white, the legends are not clearly explained, they omit key items discussed in the text they are intended to support, and/or are cluttered with extraneous information. Some are outright useless, e.g. Figures C-60 and C-61. Unless figures actually support and clarify the text, there is no point in including them. Also, a number of figures and tables are presented, particularly in Annex C, with an inadequate explanation of what is depicted. For example,

Figures C-1, C-2 and C-3 show significant differences between lines that are not explained, yet page C-48 says the impacts are insignificant. Most of the figures lack a legend and include undefined acronyms.

CESAJ Response: The original comment was as follows: “These figures are not legible. A legend should be added to Figure 1-2.” The response to that comment is: The figures have been replaced with one figure, which is given below. The figures in the remaining portions of the document will be modified as best as possible to make them more understandable.



Discussion: Regardless of the exact Figure or Drawing referenced, the primary point of the original and subsequent comments is that all Figures must be legible in the final form, including

meaningful titles, legends, scales, north arrow and reference points. When using color as a symbol the author should be mindful of affects of conversion to b&w when the report is duplicated.

Action Required: All figures must be made legible in the final form, including meaningful titles, legends, scales, north arrow and reference points.

Action Taken: All figures have been checked and made legible.

HQUSACE Assessment: This concern is **RESOLVED** to the extent practical.

3aa² Comment: 2 b. & 17 1 [Compensable Interest] (17Nov05 PGM #Iiw). The Appendix states that the utilities have a compensable interest, but does not provide any more detail. Do not need the legal opinion, but should at least briefly discuss the interest each utility owns. Also not clear that the relocation of these utilities constitutes a “Facility Relocation”, the cost of which is an LERRD.

SAJ Response: At the time of the Draft Real Estate Plan, the interests of the utility companies had not been determined. More information on the interests of the utility companies has been received and the interests that each utility owns will be discussed in the Final PIR. The REP will also provide more details on whether the relocation of these utilities constitutes facility relocations.

HQUSACE Initial Assessment: This comment is partially resolved. The following must be provided to complete resolution of this comment:

(1) E.9 notes that preliminary analysis has concluded that each of the utility providers have compensable interests. Is the preliminary analysis referenced an Attorney’s Opinion of Compensability (completed in accordance with ER 405-1-12, Chapter 12)?

(2) E.9 states that three communication towers are located along the C-11 Impoundment area and will not need to be relocated. A.7.1.1.3 states that keeping the facilities in place by design accommodation and raising access elevations would be most compatible with the owners’ needs and if possible and cost effective, this would be the preferred design option. This section does not specifically state that the communication towers will not need to be relocated. These two sections should be consistent.

(3) E.9 should briefly discuss the interest each utility owns

(4) It is still not clear that the relocation of these utilities constitute a “Facility Relocation”, the cost of which is an LERRD

CESAJ Response: (2) The three communication towers within the C-11 Impoundment will not need to be relocated. Keeping the facilities in place by design accommodation and raising access elevations would be most compatible with the owners’ needs and, if possible and cost effective, would be the preferred design option.

(1), (3) Appendix F Real Estate Plan paragraph F.9 has been modified as follows:

F.9 FACILITY, UTILITY RELOCATIONS

Since the Broward County Water Preserve Area (BCWPA) is located in the largely undeveloped area along the western edge of urbanized Broward and Miami-Dade Counties, the need for utility relocation has been minimized. Conflicts with existing or proposed utilities have been avoided by design modification whenever possible. The cases where utility relocation will be required include construction sites for structures and canals, as well as within areas developed for water storage. All known necessary utility relocations are listed, since accounting for the impact of any construction interference is an essential part of project planning. Preliminary Attorney's Opinions of Compensability have been completed and the results of the analysis are provided below:

F.9.1 Florida Power & Light Company

Both high voltage transmission and consumer delivery distribution electrical lines are either close to or cross the BCWPA.

In order to construct both the C-9 and C-11 Impoundments, all the residential and commercial properties contained within the area will be acquired, the associated structures demolished, and the electrical distribution lines relocated, abandoned or salvaged. The BCWPA components that will require electrical utility relocation due to land acquisition are the C-11 Impoundment, 10.0 miles of line and the C-9 STA/Impoundment, 0.5 mile of line.

Aerial electrical lines along entrance of the Holly Lake Community in the middle of Seepage Area WCA 3B will require relocation during canal construction. These electrical lines are owned and maintained by Florida Power & Light Company. Florida Power & Light Company (FP&L) has either an easement interest over the lands or has a permit from the Florida Department of Transportation, Broward County or the local municipality for its electrical lines to be located within the road rights of way. For those areas where FP&L has an easement, these easements represent a compensable interest which will have to be extinguished upon relocation or abandonment of the lines. The compensation would be the relocation or removal of these electrical lines. For those areas where FP&L has a permit to place and operate its electrical lines within the road rights of way from either Florida Department of Transportation, Broward County or the local municipality, a determination was made that a compensable interest exists and therefore FP&L would be entitled to compensation for relocation. The permits were reviewed and contain the following language: "Whenever necessary for the construction, repair, improvement, maintenance, safe and efficient operation, alteration or relocation of all, or any portion of said highway as determined by the Director, Division of Maintenance, any or all of said poles, wires, pipes, cables, or other facilities and appurtenances authorized hereunder, shall be immediately removed from said highway or reset or relocated thereon as required by the Director, Division of Maintenance, and at the expense of the permittee unless reimbursement is authorized." Pursuant to FDOT's Utility Accommodation Manual which defines a relocation as an adjustment of utility facilities by the highway project, FDOT would not reimburse utilities for relocations if the relocations are for the purpose of improving, repairing or maintenance of the road. However, if the purpose is not for highway or road improvements, repairs or maintenance, Florida cases have determined that the entity requiring the relocation must pay for the relocation even if it is a governmental entity. The relocation or removal of these lines are required for the

construction and implementation of an impoundment or seepage management area and not for road construction. Therefore it was concluded that FP&L has a compensable interest in the permitted lines as well as in the areas where it owns an easement interest.

In addition, project effects upon a 500 kV electrical transmission corridor owned by FP&L located within Seepage Management Areas 3A and 3B are being evaluated. The issue centers on the effect that occasionally raising the water level by one or two feet will have on the transmission towers; with the need to assure the towers are not damaged by the project, and that access for maintenance is maintained. Survey data will show how many of the towers in the 14 mile transmission corridor would be affected. It is now estimated that 75% of the towers will be affected by the project. Proposed solutions include elevating access road and base areas, covering the tower bases with a protective coating, raising the towers in place, or moving the towers to new higher base pads adjacent to where now located. Once the potential impacts are known, the most effective plan in agreement with utility company and project interests will be used. FP&L owns fee to all the lands underlying the electrical transmission corridor and therefore it was determined that it has a compensable interest.

F.9.2 Communication Lines and Towers-BellSouth, WiTel Communications, Epik Communications, Broadwing Communications and Northstart Communications

BellSouth

Relocation of telephone lines due to impoundment construction is approximately the same as described above for electrical lines, for a total of about 12.6 miles of line. These BellSouth lines are connected to the FP&L electrical lines and are permitted by FP&L. BellSouth does not have a compensable interest and will be required to remove, relocate or abandon these lines when the FP&L lines are removed, relocated or abandoned.

In addition to aerial lines, BellSouth has about 8.0 miles of underground fiber optic lines and two remote terminal units within the C-11 Impoundment. BellSouth has said that these fiber optic lines will have to be rerouted, since they are an important part of its communication network. An underground BellSouth fiber optic cable that serves a Florida Power and Light Company (FP&L) substation will need to be relocated during construction. Entry to the substation located within WCA 3B Seepage Management Area requires construction of an access bridge over canal C-502B. BellSouth suggested including a protective conduit for the fiber optic cable in the bridge design. BellSouth has a major trunk route that runs alongside Highway U.S. 27 next to the BCWPA. At the Johnson Street entrance to the Holly Lake Mobile Home Community, near the middle of WCA 3B Seepage Management Area, construction of a new access bridge across canal C-502B will require the relocation of a BellSouth underground fiber optic line, which enters the subdivision there.

These underground fiber optic lines are all within the existing road rights of way and are permitted by the Florida Department of Transportation, Broward County or the local municipality. For those areas where BellSouth has a permit to place and operate its electrical lines within the road rights of way from either Florida Department of Transportation, Broward County or the local municipality, a determination was made that a compensable interest exists

and therefore BellSouth would be entitled to compensation for relocation. The permits were reviewed. All FDOT permits contain the following language: "Whenever necessary for the construction, repair, improvement, maintenance, safe and efficient operation, alteration or relocation of all, or any portion of said highway as determined by the Director, Division of Maintenance, any or all of said poles, wires, pipes, cables, or other facilities and appurtenances authorized hereunder, shall be immediately removed from said highway or reset or relocated thereon as required by the Director, Division of Maintenance, and at the expense of the permittee unless reimbursement is authorized." Pursuant to FDOT's Utility Accommodation Manual which defines a relocation as an adjustment of utility facilities by the highway project, FDOT would not reimburse utilities for relocations if the relocations are for the purpose of improving, repairing or maintenance of the road. However, if the purpose is not for highway or road improvements, repairs or maintenance, Florida cases have determined that the entity requiring the relocation must pay for the relocation even if it is a governmental entity. The relocation or removal of these lines are required for the construction and implementation of an impoundment or seepage management area and not for road construction. Therefore it was concluded that FP&L has a compensable interest in the permitted lines as well as in the areas where it owns an easement interest. Permits from Broward County or the local municipalities contain language similar to that in the FDOT permits. It was the conclusion that relocation of the BellSouth fiber optics lines was not for road construction and therefore BellSouth does have a compensable interest under Florida law.

WilTel Communications

WilTel Communications has a major trunk route that runs alongside Highway U.S. 27 next to the BCWPA. In the event fiber optic lines require relocation due to project canal or culvert construction, the preferred relocation procedure involves boring a route underneath and then splicing that line back into the system. WilTel Communications also has a fiber optic route that extends east from U.S. 27 along SW 26th Street to its operational amplifier located on the east side of the C-11 Impoundment on the SBA Communication tower site. It may be necessary to relocate the 6 miles of fiber optic cable leading to and from the operational amplifier. Again these are permitted by FDOT and the FDOT permits contain the same language as in the FP&L and BellSouth permits, and therefore it was determined that WilTel Communications has a compensable interest.

Broadwing Communications, Epik Communications, and Northstart Communications

Broadwing Communications, Epik Communications, and Northstart Communications also have major trunk routes that runs alongside Highway U.S. 27 next to the BCWPA. All have FDOT permits containing the same language as that in the FP&L and BellSouth permits issued by FDOT and therefore have a compensable interest. In the event fiber optic lines require relocation due to project canal or culvert construction, the preferred relocation procedure involves boring a route underneath and then splicing that line back into the system.

AT&T Communications

At the Johnson Street entrance to the Holly Lake Mobile Home Community, near the middle of WCA 3B Seepage Management Area, construction of a new access bridge across canal C-502B,

AT&T cable television service enters the area at this entrance as well, suspended overhead from FP&L poles. These AT&T cable television lines are connected to the FP&L electrical lines and are permitted by FP&L. AT&T Communications does not have a compensable interest and will be required to remove, relocate or abandon these lines when the FP&L lines are removed, relocated or abandoned.

F.9.3 Water and Sewer Lines

The City of Pembroke Pines has a 24-inch water main along the entrance road to the Holly Lake Mobile Home Community, as well as a 12-inch water main near its south end, that will require relocation due to construction of canal C-502B. The 12-inch water line may be accommodated by a surface connection above the canal.

The City of Pembroke Pines has two 10-inch wastewater pipes that enter the Holly Lake Mobile Home Community from U.S. 27 that will require relocation due to construction of canal C-502B. These pipes are located parallel to the Johnson Street entrance, near the middle of Seepage Area WCA 3B.

These lines are located within the right of way of the roads leading into Holly Lakes Mobile Home Community. The City of Pembroke Pines owns and maintains the road and the right of way by virtue of a dedication. It also owns, maintains and operates the underground water and sewer lines. It was determined that the City of Pembroke Pines has a compensable interest in these facilities.

Discussion/ Action Required: The evaluation of impacts to the electrical transmission corridor owned by FP&L will be completed and presented in final PIR.

Action Taken: The evaluation of impacts is discussed in Appendix D, Section D.9 and subsections.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

bb. Comment: Comment 17.7 [Trailer Parks] (17Nov05 PGM #IIx). Need to show that the cost of protecting the two trailer parks is less than the cost of acquisition of the parks and relocation of the trailers. What is current level of protection enjoyed by the 2 parks? Will the proposed features provide a greater level of protection than currently in place?

HQUSACE Initial Assessment: This comment is partially resolved. The following must be provided to complete resolution of this comment:

(1) Design features for the SMA include acquisition of 165 acres in fee title. The Holly Lakes and Jones Trailer Parks are in this area. Are you planning to acquire the trailer parks in fee?

(2) Need to show that the cost of protecting the two trailer parks is less than the cost of acquisition of the parks and relocation of trailers. What is the current level of protection enjoyed

by the two parks? Will the proposed features provide a greater level of protection than currently in place?

CESAJ Response: No lands will be acquired within the Trailer parks for construction of the Holly Lakes or Jones Trailer Park Flood Damage Reduction Systems. The structures required for the Flood Damage Reduction Systems for the Holly Lakes Trailer Park and the Jones Trailer Park will be constructed on lands adjacent to these areas that are owned or that will be acquired in fee by the SFWMD. This has now been included in paragraph F.7.3.

(2) Need to show that the cost of protecting the two trailer parks is less than the cost of acquisition of the parks and relocation of trailers. What is the current level of protection enjoyed by the two parks? Will the proposed features provide a greater level of protection than currently in place?

CESAJ Response: (2)a. The following analysis was previously provided:

An analysis was done for the Jones Trailer Park. The cost of construction of the levee, seepage canal and pump station is \$1,601,500 exclusive of contingency or operation and maintenance costs. The land in this trailer park is comprised of 10.95 acres owned in fee by Nell Jones. There are approximately 50 tenant owned and occupied mobile homes. Each of the tenants lease the mobile home spaces. Estimated land value is approximately \$493,000. However each tenant would have to be relocated, either the mobile home moved or they would be provided DSS housing. Estimated relocation costs for these tenant relocations is \$4,328,000. Therefore it was determined that the cost of construction \$1,601,000 was much less then the cost of acquisition. Holly Lakes Mobile Home Park consists of 577 individual ownerships with an average value (Broward County Property Appraiser's office) of \$80,000 per parcel. Land value based solely on the Broward County Property Appraiser would be \$46,160,000 versus the cost of construction of the flood damage reduction of \$3,798,800. The \$46,160,000 does not include relocation assistance costs, Federal and non-federal administrative costs. Neither of these analyses are included in the Draft PIR and neither analysis will be included in the Final PIR

(2)b. A complete analysis of the current level of protection enjoyed by the two parks and the level of protection provided by the flood damage reduction system to be constructed is found in the Engineering Appendix paragraph 4.2.3.3 Flood Analysis: The two parks will not enjoy a greater level of protection then is currently in place.

Discussion: If SFWMD owns the lands adjacent to the trailer parks that will be used for the Flood Damage Reduction System, what interest do they own? Is it sufficient for project purposes? If SFWMD does not own the land already, cost to acquire the land should be included in total real estate costs

Action Required: Incorporate response into PIR. The PIR should describe that the SFWMD is in design phase and is revisiting the cost effectiveness of providing flood damage protection for the trailer parks and that this may be revisited during PED. The final PIR will be consistent with the findings presented in the draft PIR.

Action Taken: The PIR describes that the SFWMD is in design phase and is revisiting the cost effectiveness of providing flood damage protection for the trailer parks and that this may be revisited during PED. This comments in addressed in Appendix A (Engineering) and Appendix D (Real Estate) of the final PIR.

HQUSACE Assessment: This comment is adequately **RESOLVED** by the action taken.

3cc. Comment: Comment 17 [Fee estate for WCA 3A/3B] (17Nov05 PGM #IIy). Fee estate for WCA 3A/3B list certain activities to be prohibited, but does not analyze the costs/benefit tradeoffs. It assumes the answer without factoring in the cost to preclude the activities.

HQUSACE Initial Assessment: This comment is partially resolved. The comment will be resolved when the District provides all the additional information as requested.

CESAJ Response: Appendix F Real Estate Plan, Paragraph F.7 has been modified as follows:

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 in Section 1.9.3 and the February 2006 in Section 1.10.3 of the Six Program-Wide Guidance Memorandum provide that an analysis to determine the estates required for implementation of a project should be determined using the following guidelines.

Estates Required for CERP Projects

For all lands determined to be required for CERP Projects, the interests required for implementation generally will be fee simple, based on assumptions that all or a significant portion of the rights in the land will be required for project purposes. Although fee acquisition should be the standard estate for CERP projects, lesser estates such as flowage or conservation easements should be considered, as appropriate, if the benefits of the project can still be achieved with the lesser estate. The PIR should provide the rationale for such lesser estates.

To verify the appropriateness of fee simple acquisition or less than fee acquisition, the PIR must include the following analysis and the conclusions must be reflected in the appropriate report sections. The level of detail required for the analysis will vary depending on the project feature involved.

Determine the Rights that Are Required to Construct and Perform Operation, Maintenance, Repair, Rehabilitation, And Replacement (OMRR&R) for the Project:

- Identify the affirmative rights on the land that are required to implement the project.
- In addition to affirmative rights that may be required, identify restrictions on use (restrictive covenants) by the fee owner that are required so as not to interfere with project purposes and outputs.
- Identify the length of time that the affirmative rights or restrictive covenants are needed for the project.

- Determine whether constructed project features may need to be modified over time due to uncertainties in science, formulation, or design (adaptive management).
- Determine whether project land, or portions thereof, will be open for public use (either active or passive uses).

Other Factors to be Considered:

- Compare the cost/value of specific types of easements to fee value.
- Assess potential for severance damages from fee acquisition.
- Determine whether public owners have legal capability to convey fee.
- Assess stewardship/OMRR&R considerations regarding the risk and consequences of encroachment on project land by adjacent owners; the risk and consequences of violation of easement terms by fee owners; and monitoring and enforcement capabilities of Sponsor.
- Assess negative perception by public of private benefits or gain due to landowner reservations where easements are selected.
- Assess whether State Marketable Title Act requires re-recording of easement instruments.

For the analysis, the estates for each of the three project components were determined independently utilizing not only the factors set forth above but Engineering Regulation 405-1-12, Chapter 12, paragraph 12-9 because of the nature of the components. The level of detail for the C-11 Impoundment and the C-9 Impoundment is limited because both have been determined to be essentially to be dam sites.

F.7.1 C-11 Impoundment

The C-11 Impoundment feature includes approximately 1,850 acres, 1,490 acres of storage and 205 acres of wetland marsh area. At the maximum normal pool depth of 4 feet the impoundment has 5,960 ac-ft of storage or 6,780 ac-ft of storage with the wetland marsh area (short duration). Embankment heights are 12 feet above average interior grade. Two windbreaks are located in the middle of the impoundment to reduce the critical wind setup/wave run-up fetch length. A new seepage canal is included along the western, northern, and eastern boundaries. The eastern boundary seepage canal includes a 30-foot wide littoral shelf for habitat improvements. The purpose of the C-11 Impoundment features is to reduce the pumping of untreated agricultural and urban runoff into WCA 3A. The storage pool will also assist in reducing seepage from adjacent natural areas WCA 3A and 3A SMA, provide groundwater recharge, and provide benefits in meeting the agricultural, urban, and saltwater intrusion prevention water supply demands. The project with other elements included in the Broward County WPA project allow operational flexibility to transfer water to the C-9 STA/Impoundment if storage is available, provide water for wetland mitigation areas interior to C-11 Impoundment, and/or use the current option to send water eastward to tide, if conveyance is available.

The impoundment has been determined to be a dam with the levee on all four sides having to meet dam safety criteria. Chapter 12, paragraph 12-9 of ER 405-1-12 requires fee title for dam sites and permanent easements for flowage areas. While standard estates such as a canal easement, levee easement, or possibly a flowage easement (permanent flooding) for the interior areas might be sufficient, the estimated value of these easements would exceed 90 percent of the

fee value of the property. Access to the interior of the impoundment must be restricted. The lands within the impoundment cannot have any structures of any kind and other uses would be extremely limited. Leaving rights outstanding in third parties would also inhibit future operational changes in the Impoundment and the other facilities associated with the Impoundment. All these lands are required in fee.

F.7.2 C-9 Impoundment

The C-9 STA/Impoundment feature includes approximately 1,792 acres, consisting primarily of a 1,650 acre 4-foot deep above-ground impoundment and associated structures, including two pump stations (inflow and seepage), one gated ogee spillway, two gated culvert structures, two fixed weir structures, emergency overflow spillway, and perimeter seepage control canals along the western, northern, and eastern boundaries. At the maximum normal pool depth of 4 feet the impoundment has 6,600 ac-ft of storage. Levee embankment heights are 12 feet above average interior grade. Two windbreaks are located in the middle of the impoundment to reduce the critical wind setup/wave run-up fetch length. The design also includes consideration of providing water for a mitigated wetland marsh area located on the northern boundary. When CERP project component North Lake Belt Storage Area (NLBSA) is constructed and operational, the current CERP plan is for C-9 Impoundment to be transformed into a Stormwater Treatment Area (STA) per 2050 Plan. This will require minimal project configuration change other than relocation of proposed inflow pump station. The purpose of the C-9 STA/Impoundment features is twofold: (1) pump and store excess stormwater runoff from the C-9 Basin to reduce loss of runoff to tide and (2) store diverted Western C-11 Basin runoff to prevent discharge of untreated runoff into WCA 3A by the S-9 Pump Station. The storage pool will also assist in reducing seepage from adjacent natural areas WCA 3B and 3BSMA, provide groundwater recharge, and provide benefits in meeting the agricultural, urban, and saltwater intrusion prevention water supply demands.

The impoundment has been determined to be a dam with the levee on all four sides having to meet dam safety criteria. Chapter 12, paragraph 12-9 of ER 405-1-12 requires fee title for dam sites and permanent easements for flowage areas. While standard estates such as a canal easement, levee easement, or possibly a perpetual flowage easement (permanent flooding) for the interior areas might be sufficient, the estimated value of these easements would exceed 90 percent of the fee value of the property. Access to the interior of the impoundment must be restricted. The lands within the impoundment cannot have any structures of any kind and other uses would be extremely limited. Leaving rights outstanding in third parties would also inhibit future operational changes in the Impoundment and the other facilities associated with the Impoundment. All these lands are required in fee.

F.7.3 WCA 3A/3B Seepage Management Area

The WCA 3A/3B Seepage Management Area (SMA) feature footprint consists of 4,032.38 acres. The WCA 3B Seepage Management Area (3B SMA) is primarily a wetland area also known as the WCA 3B Everglades Buffer Strip. The design includes a new conveyance canal with associated side cast levee and a new levee with associated borrow canal. The design includes a new water control structure, two flood protection systems and three access bridges. The design

also includes considerations for US-27 stormwater runoff and FP&L transmission line easement with associated access road.

The purpose of the Seepage Management Area features is to provide a system to reduce seepage losses from WCA 3 and to establish a habitat buffer between the WCA natural area and urban development occurring to the east. Seepage reduction for WCA 3 helps retain water in the natural system that has been impacted by drawdowns to meet agricultural and urban water supply demands, and prevention of saltwater intrusion into the surficial aquifer. Project modeling demonstrated that controlling higher water levels/stages seasonally in the study area with associated canals reduced seepage losses significantly. Also, controlling water levels seasonally create hydroperiods within the wetland area that are beneficial to improving native flora and fauna.

The 3A SMA and 3B SMA operates for the purpose of managing seepage loss from WCA 3A and WCA 3B, respectively. The management is conducted through creation of a step down seepage area where water levels (surface and water table) are controlled. The 3A SMA will have a control water level of +7.50 ft-NGVD during the wet season and +6.50 ft-NGVD during the dry season. The 3B SMA with a lower average ground elevation will have a control water level (again, surface and water table) of +6.50 ft-NGVD during the wet season and +5.50 ft-NGVD during the dry season.

Of the 4,032.38 acres required for the WCA 3A/3B Seepage Management Area (SMA), the following design features with the estimated total of 165 acres would require fee title. While standard estates such as a canal easement or a levee easement might be sufficient, the estimated value of these easements would exceed 90 percent of the fee value of the property. The structures required for the Flood Damage Reduction Systems for the Holly Lakes Trailer Park and the Jones Trailer Park will be constructed on lands adjacent to these areas that are owned or that will be acquired in fee by the SFWMD.

Structures

S-502B Gated Culverts (replacement for G-86S)

S-515 Gated Culverts

S-516A Triangular-Profile Weir

S-516B Triangular-Profile Weir

Bridges

B-500 FP&L Sub-station

B-501 Holly Lakes Trailer Park

Canals

C-502B Conveyance Canal

C-502A Borrow Canal

C-502B Borrow Canal

C-503 Borrow Canal

Levees

L-502A Levee

L-502B Levee

L-502B Levee (side cast)

- L-503 Levee
- Flood Damage Reduction Systems
- Holly Lakes Trailer Park
 - S-507A Pump Station
 - L-502C Levee
 - C-502C Seepage Canal
- Jones Trailer Park
 - S-507B Pump Station
 - L-502D Levee
 - C-502D Seepage Canal

For the remaining 3,867 acres, approximately 1,100 acres are owned in fee by Florida Power & Light Company within the WCA 3A/3B Seepage Management Area. This approximately 1,100 acres is a transmission line corridor over which it has been determined a perpetual flowage easement (permanent flooding) will be obtained. The issue centers on the effect occasionally raising the water level by one or two feet will have on the transmission towers; with the need to assure the towers are not damaged by the project, and that access for maintenance is maintained. A perpetual flowage easement will be required as water levels in this area will be raised and maintained approximately 2 feet current levels over a greater period of time. The area will not be subject to periodic dry-outs as might normally occur without construction of the WCA 3A/3B Seepage Management Area (SMA). FP&L will be allowed to maintain its existing electrical transmission lines in this area as well as construct and operate additional electrical transmission lines on these lands.

For the remaining approximately 2,767 acres, these lands will also be subject to a step down seepage area where water levels (surface and water table) are controlled. The 3A SMA will have a control water level of +7.50 ft-NGVD during the wet season and +6.50 ft-NGVD during the dry season. The 3B SMA with a lower average ground elevation will have a control water level (again, surface and water table) of +6.50 ft-NGVD during the wet season and +5.50 ft-NGVD during the dry season. In order to maintain these water level controls, a perpetual flowage easement (permanent flooding) would be the required estate. It would give the government the right to permanently overflow, flood and submerge this area. The standard prohibitions contained within the standard perpetual flowage easement (permanent flooding) estate in Chapter 5, ER 405-1-12 would be sufficient to insure the flexibility to operate project. These restrictions and prohibitions include the right to clear and remove any brush, debris and natural obstructions which may be detrimental to the project. The right, title and interest to timber, structures and improvements situated on the land and the prohibition against construction or maintenance of any structures for human habitation and construction or maintenance of any other structures not approved by the government. This estate would also prohibit landfill or excavation not approved by the government. While the perpetual flowage easement (permanent flooding) might be sufficient, the estimated value of this easement would exceed 90 percent of the fee value of the property.

In addition to the standard prohibitions and restrictions on use in the perpetual flowage easement, it was determined that the following list of restrictions and prohibitions on the landowners' use

and affirmative rights would also be required by the government to operate the project in WCA 3A/3B Seepage Management Area. The constraints consist of the following:

A prohibition of livestock is required. The negative effects of allowing cattle, horses, or other livestock on the natural areas will result in continued grazing on desirable upland and wetland plants and the production of manure which can degrade surface and ground water quality on site and off site. Providing road or trail access to each of the grazed parcels would in itself be feasible to maintenance of the water levels.

A prohibition of all agricultural activity is required. Farming activities, such as row or field crops, sod, citrus, ornamental plants, etc are inconsistent with project purposes in this component and would be prohibited.

After consideration of all the affirmative rights required by the government and the restrictions on the landowner(s) use of the properties, it was determined that Perpetual Flowage/Conservation Easement would generally be the minimum interest required over some of the remaining lands. The estimated value of this easement would exceed 95 percent of the fee value of the property. However, as stated above purpose of the Seepage Management Area features is to provide a system to reduce seepage losses from WCA 3 and for all the lands to remain hydrologically impacted in the wet and dry season.

Discussion: There is language provided in F.7.3 about the 1,100 acres owned in fee by FP&LC within the WCA 3A/3B seepage management area. Is this the same area discussed in F.9.1 (500 kV electrical transmission corridor)? If so, F.9.1 should be consistent with F.7.3. F.9.1 leads the reader to believe that all impacts are not known and there is uncertainty about what interest will be needed.

The proposed text changes provide detailed information. However, for 2,767 acres that are a part of the WCA 3A/3B Seepage Management Area, proposed text does not clearly state whether fee or easement will be the required estate.

Action Required: The final PIR will be revised to clarify whether the 2,767 acres is to be acquired in fee or easement.

Action Taken: Appendix D (Real Estate Appendix) of the final PIR has been revised as requested. In addition, the acreage has been updated to 2,983 acres (Page D-53) and will be acquired in easement.

HQUSACE Assessment: RESOLVED by Action Taken

dd. Comment: Para E.7 [Missing Analysis] (17Nov05 PGM #IIz). Not a complete quote; states the following analysis, but does include it.

HQUSACE Initial Assessment: This comment is partially resolved. The comment will be resolved when the District provides all additional information as requested.

CESAJ Response: See response to cc. above.

Discussion/ Action Required: See Action Required for comment/response cc.

Action Taken: See Action Taken to Comment cc above.

HQUSACE Assessment: RESOLVED by Action Taken

4. New Comments. (These comments were added as a result of review of the DPIR/DEIS)

4a. Comment: Study Purpose, Scope and Authority. The executive summary and Section 1 discuss the purpose of the project, but there is nothing in the introductions that state the purpose of the PIR. The executive summary and the main body of the PIR need an opening statement about the purpose of the report, the scope of the analyses, and the need for the recommendation.

CESAJ Response: This has been clarified in the executive summary and Section 1 of the final PIR. The text in the document relating to this is as follows:

From the Executive Summary:

The purpose of this report is to support a new authorization for the project in accordance with the requirements of Section 601(d) of the Water Resources Development Act of 2000 (WRDA 2000). This report also recommends deauthorization of the Water Conservation Areas 3A/3B Levee Seepage Management Project, the C-11 Impoundment and Stormwater Treatment Area Project and the C-9 Impoundment and Stormwater Treatment Area Project, which were initially authorized under Section 601(b)(2)(C)(iv) - (vi) of WRDA 2000. The draft PIR/EIS was circulated for comment in accordance with National Environmental Policy Act (NEPA) review processes. The USACE Chief of Engineers report will be prepared based on this Final PIR.

From Section 1.1, Introduction:

This report documents studies for the Broward County Water Preserve Areas (BCWPA) Project in accordance with the requirements of Section 601(d) of the Water Resources Development Act of 2000 (WRDA 2000) and recommends authorization of this project. The BCWPA project addresses loss of ecosystem function within the Everglades as a result of 1) damaging discharges of runoff from developed areas in western Broward County into the Everglades (Water Conservation Area 3A); 2) excessive nutrient loading to the Everglades and; 3) excessive seepage of water out of the Everglades to developed areas in western Broward County. The project also addressed insufficient quantities of water available in the regional water management system during dry periods to meet municipal, agricultural, and environmental water supply demands. The CERP study areas and the Broward County WPA project area are shown in *Figure 1-1*.

Discussion: Headquarters explained new authorization is the recommendation, not the purpose of the investigation or the PIR. The purpose of this investigation is to update and refine the April

1999 conceptual-level plan, and recommend any changes that might be warranted. The purpose of the PIR is to document the planning process and the recommended changes to the April 1999 plan in a manner that will allow the public, agencies, and decision-makers to make informed decisions.

Action Required: Incorporate response into final PIR.

Action Taken: Final response, that the purpose of this investigation is to update and refine the April 1999 conceptual-level plan, and recommend any changes that might be warranted and the purpose of the PIR is to document the planning process and the recommended changes to the April 1999 plan in a manner that will allow the public, agencies and decision-makers to make informed decisions, has been incorporated into the final PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4b. Comment: WRDA 2000 Plan. The PIR does not identify the plans and costs authorized by WRDA 2000 for the C-9 Impoundment and STA, the C-11 Impoundment and STA, and WCA 3A/3B Levee Seepage Management projects, and the C-502B Borrow Canal portion of the North New River Improvements project. Describe the features, functions, operations, outputs and other impacts of these authorized projects as a basis for assessing the nature and extent of changes recommended in this PIR.

CESAJ Response: Section 1.2., “Report Authority,” of Section 1.0 in the final PIR, identifies the plans and costs authorized by WRDA 2000 for the C-9 Impoundment and STA, the C-11 Impoundment, and WCA 3A/3B Levee Seepage Management projects as follows:

1.2 Report Authority

The Comprehensive Everglades Restoration Plan was approved in Section 601 of WRDA 2000, which states, in part:

(b) Comprehensive Everglades Restoration Plan -

(1) APPROVAL -

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

While components of the Broward County WPA Project were initially authorized in WRDA 2000, this report concludes that they should be de-authorized and the BCWPA Project be authorized in their place. The specific authorization for these components is also contained in Section 601 of the Act, which states:

(2) SPECIFIC AUTHORIZATIONS -

(C) INITIAL PROJECTS. —The following projects are authorized for implementation, after review and approval by the Secretary, subject to the conditions stated in subparagraph (D), at a total cost of \$1,100,918,000, with an estimated Federal cost of \$550,459,000 and an estimated non-Federal cost of \$550,459,000:

(iv) Water Conservation Areas 3A/3B Levee Seepage Management, at a total cost of \$100,335,000, with an estimated Federal cost of \$50,167,500 and an estimated non-Federal cost of \$50,167,500.

(v) C-11 Impoundment and Stormwater Treatment Area, at a total cost of \$124,837,000, with an estimated Federal cost of \$62,418,500 and an estimated non-Federal cost of \$62,418,500.

(vi) C-9 Impoundment and Stormwater Treatment Area, at a total cost of \$89,146,000, with an estimated Federal cost of \$44,573,000 and an estimated non-Federal cost of \$44,573,000.

Congress placed conditions on these authorized projects including the completion of Project Implementation Reports (PIR). These reports include additional study requirements such as cost effectiveness and engineering feasibility as stated in sub paragraph (D) of Section 601 which states:

(D) CONDITIONS.

(i) PROJECT IMPLEMENTATION REPORTS. —Before implementation of a project described in any of clauses (i) through (x) of subparagraph (C), the Secretary shall review and approve for the project a project implementation report prepared in accordance with subsections (f) and (h)

(ii) SUBMISSION OF REPORT. — The Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate the project implementation report required by sub-sections (f) and (h) for each project under this paragraph (including all relevant data and information on all costs).

(iii) FUNDING CONTINGENT ON APPROVAL. — No appropriation shall be made to construct any project under this paragraph if the project implementation report for the project has not been approved by resolutions adopted by the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate.

Section 601(h)(4) of WRDA 2000 further requires that a PIR document the following:

(4) PROJECT-SPECIFIC ASSURANCES-

(A) PROJECT IMPLEMENTATION REPORTS-

(i) IN GENERAL- The Secretary and the non-Federal sponsor shall develop project implementation reports in accordance with section 10.3.1 of the Plan.

(ii) COORDINATION- In developing a project implementation report, the Secretary and the non-Federal sponsor shall coordinate with appropriate Federal, State, tribal, and local governments.

(iii) REQUIREMENTS- A project implementation report shall--

(I) be consistent with the Plan and the programmatic regulations promulgated under paragraph (3);

(II) describe how each of the requirements stated in paragraph (3)(B) is satisfied;

(III) comply with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

(IV) identify the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system;

(V) identify the amount of water to be reserved or allocated for the natural system necessary to implement, under State law, subclauses (IV) and (VI);

(VI) comply with applicable water quality standards and applicable water quality permitting requirements under subsection (b)(2)(A)(ii);

(VII) be based on the best available science; and

(VIII) include an analysis concerning the cost-effectiveness and engineering feasibility of the project.

C-9 Impoundment in the interim does not have an STA element, but with completion of the CERP Component North Lake Belt Storage Area (NLBSA), the impoundment feature may be converted to an STA feature. In the future, an existing and currently active rock quarry will be modified to become the NLBSA. C-9 Impoundment will require minor modifications at that time to function and operate as an STA. C-11 Impoundment does not have a STA associated with it, and no future associated STA is planned. C-11 Impoundment includes the C-502B Borrow Canal, portion of the North New River Improvements project listed under WCA 3 Decentralization Project. No significant deviations in function or operations from the WRDA 2000 Initially Authorized project are presented in the PIR. Seepage management features were added to the PIR to reflect gained onsite knowledge and are recommended for mitigating otherwise possible impacts to existing flood protection systems for public nearby to remain. Basin divide structures were added for prevention of flood impacts during routing of excess water as well in compliance with the Savings Clause regarding no impact to existing levels of service of flood protection. C-11 included an added measure to meet 404 mitigation requirements for relocation of a wetland area. Project implementation will be consistent with the PIR. Monitoring costs are presented incrementally.

No significant extent of changes is recommended for the features, functions, operations, and outputs in this PIR. Therefore, there are no significant impacts. The features, functions,

operations, and outputs are identified in the following, “Table A-1: Quick Structure Fact Sheet” of the Engineering – Appendix A:

Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
C-11 Impoundment				
S-503	Inflow Pump Station	2,575	SE corner on C-11 Canal	Medium pump station, includes 5-450D cfs, 1-250D cfs, 1-75E cfs.
S-504	Gated Spillway	1,000	SW corner on C-11 Canal	2-bay gated ogee spillway.
S-504A	Obermeyer Gate	2,880	E of S-504 in C-11 Canal	3-bay Obermeyer gate; duplicate of existing S-381.
S-504B	Overflow Spillway	450	S embankment btwn the 2 Obermeyers	50-foot emergency overflow spillway, discharges into C-11 Canal.
S-505A	CIT Broad Crested Weir	150	SE corner, N of C-11 Canal	100-foot regular weir.
S-505B	CIT Broad Crested Weir	75	NE corner in C-511 Seepage canal	70-foot combination weir.
(same site)	Ungated Culverts	75	NE corner in C-511 Seepage canal	3-72”CAP ungated culverts, bridge over C-511 seepage canal.
S-505C	CIT Broad Crested Weir	150	SW corner in C-511 Seepage canal	90-foot weir – corrugated weir, same as S-512B.
(same site)	Gated Culverts	150	SW corner in C-511 Seepage canal	3-72”CAP flap gate culverts/bridge prevents backflow from C-11 Canal.
S-506A	Gated Culverts	50	N, connecting Rsrv with Mitigation (A)	1-48”CAP gated culvert. Delivers water to NE Mitigation area.
S-506B	Gated Culverts	50	N, connecting Rsrv with Mitigation (B)	1-48”CAP gated culvert. Delivers water to NW Mitigation area.
S-506C	Stoplog Riser Culverts	17	N, Mitigation (A) to C-511 Seepage canal.	1-72”CAP culvert w/96” Riser. Controls stage in Mitigation (A).
S-506D	Stoplog Riser Culverts	17	N, Mitigation (B) to C-511 Seepage canal.	1-72”CAP culvert w/96” Riser. Controls stage in Mitigation (A)..
C-9 Impoundment				
S-509	Inflow Pump Station	1,075	S, middle on C-9 Canal	Medium pump station, includes 4-250D cfs, 1-75E cfs.

Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
S-510	Gated Culverts	500	S, W of S-509 on C-9 Canal	2-96"CAP gated culverts, control rsrv discharge.
S-510A	Overflow Spillway	450	S mid-embankment	50-foot emergency overflow spillway, discharges into C-9 Canal.
S-511	Gated Culverts	500	SE corner in C-9 Canal	2-96"CAP gated culverts, reverse flow for runoff capture.
S-512A	Seepage Pump Station	150	E, middle on C-509 Seepage canal	Small pump station, includes 2-75E cfs seepage pumps.
S-512B	CIT Broad Crested Weir	150	SW corner in C-509 Seepage canal	90-foot weir – corrugated weir, same as S-505C.
(same site)	Gated Culverts	150	SW corner in C-509 Seepage canal	3-72"CAP flap gate culverts/bridge, prevents backflow from C-9 Canal.
S-512C	CIT Broad Crested Weir	150	SE corner in C-509 Seepage canal	90-foot weir – corrugated weir, same as S-505C.
(same site)	Gated Culverts	150	SE corner in C-509 Seepage canal	3-72"CAP flap gate culverts/bridge, prevents backflow from C-9 Canal.
S-513A	Gated Culverts	50	N, connecting Rsrv with Mitigation	2-48"CAP gated culverts. Delivers water to N Mitigation area.
3A and 3B Seepage Management Area				
S-502B	Gated Culverts	1,000	S of C-11 Canal, at Griffin Road	7-96"CAP gated culverts/bridge. Allows diversion south to C-9 Imp
S-515	Gated Culverts	600	Near junction of C-6 with US27, on C-6	2-96"CAP gated culverts. Separates different WQ waters (C-6 Canal)
S-507A	Flood Pump Station	60	Holly Lakes Trailer on C-502B Canal	Small pump station, includes 2-30E cfs pumps.
S-507B	Flood Pump Station	10	Jones Trailer on C-6 Canal	Small pump station, includes, 1-5E, 1-5D cfs.
S-516A	Triangular-Prof Weir	7.5	Confluence of C-502B and C-6 canals	20-foot weir – triangular weir with upstream/downstream slope of 1 on 1.
S-516B	Triangular-Prof Weir	7.5	Confluence of C-503 and C-6 canals	20-foot weir – triangular weir with upstream/downstream slope of 1 on 1.
B-500	Bridge	1	FP&L Sub-station	Spans across C-502B.

Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
B-501	Bridge	1	Holly Lakes	Spans across C-502B U-Channel
FPL 1-4, FPL 7-19	Ungated Culverts	< 1	Along FP&L access Road within area	Single CAP 48"bar, ungated
FPL 5 6	Ungated Culverts	< 1	Along FP&L access Road, in 3ASMA	Double CAP 48"bar, ungated

Notes:

1. For pump stations, D=Diesel motor driven, E=Electric motor driven.
2. Medium pump station indicates no individual pump is > 450 cfs.
3. Small Pump Station indicates no individual pump is > 250 cfs.
4. For gravity structures, "design capacities" do not imply maximum capacity.
5. CAP=Corrugated Aluminum Pipe
6. Obermeyer Gate is proprietary and is an air bladder actuated gate.
7. CIT=California Institute of Technology developed weir formula for weir with stilling basin commonly used.

Discussion: The discussion of what the PIR recommends should be deleted from this section. The "Authority" section is probably not the best place to describe the authorized plan in detail.

Action Required: Include information from response into final PIR in appropriate section.

Action Taken: The components of the project from the Comp Plan are described in Section 1.4 of the PIR.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4c. Comment: Future Treatment Area. Page x of the Executive Summary and page 1-32 indicate that the C-9 Impoundment would be modified significantly in the future to treat stormwater. Presumably the modifications will be addressed in a future PIR. This PIR needs to explain how the conversion would affect the features, operation, and the benefits (justification) for the current recommended plan. This information is needed to establish that the C-9 portion of the recommended plan should be implemented now even though significant changes are anticipated in the future.

CESAJ Response: The C-9 Impoundment would not require significant modification to convert from a reservoir to an STA. The modifications will involve only one construction feature that can be identified at this time. An internal earthen levee, which will function as a baffle, will be required to create a long flow path from inflow pump station to the discharge gates. This longer flow path will maximize retention time for treatment within the STA. Operationally, the water diverted through the C-11 Canal will be gravity discharged into the proposed NLBSA. The C-9

STA will receive flow from NLBSA by NLBSA in ground reservoir pumping into the C-9 Canal. Water will also be pumped into the STA from the C-9 S-509 pump station. As an alternative, the pump motors from the S-509 pump station may be used by NLBSA for its discharge pumps with relocation and construction of new housing structure. The benefits to the project are increased by the conversion from impoundment to STA operations. Since the C-9 will still pool water aboveground, seepage reduction from the WCA will continue by building of an opposing hydraulic head in same manner as the interim impoundment will. Also, the STA will still contribute to groundwater recharge. Both seepage and recharge benefits are increased farther into and throughout dry times when the benefits to natural system are more significant with the much larger storage reservoir NLBSA. Additionally, the STA will provide treated water that can be released to Biscayne Bay, which will provide a real benefit for the estuarine system.

Discussion/Action Required: The PIR should summarize the anticipated future changes, the decision process for justifying and approving the changes, and the anticipated impacts on the project recommended now.

Action Taken: Sections 5.1 and 5.3 of the PIR summarize the anticipated future changes, the decision process for justifying and approving the changes, and the anticipated impacts on the project recommended now.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4d. Comment: Interim Operations. Section II.B, page C-33, indicates that interim operations will be necessary until the Lake Belt storage area improvements are completed. Both the interim and final operations need to be summarized in Section 3. The presentation of project impacts and outputs need to address the interim and final operations.

CESAJ Response: This “interim” time allows the C-9 STA/Impoundment to receive runoff directly from either the C-11 Impoundment or the C-9 canal basin. The C-11 Impoundment, C-9 Impoundment, and C-502B Conveyance (diversion) canal operate primarily for the purpose of reducing S-9 Pump Station operation in providing flood damage reduction for the Western C-11 Basin. Operation of the S-9 necessitates the opening of the S-381 Obermeyer gate allowing the pumping of untreated agricultural and urban runoff into the natural system of WCA 3. The primary target for the runoff is the C-11 Impoundment until storage availability is reduced to near zero. At that time, if the C-9 Impoundment has storage available, then the S-504A Obermeyer gate is closed to prevent temporary high stages in the C-11 Canal east of the structure from impacting South Broward Drainage District (SBDD) ground storage through seepage influx. The S-504 Spillway is then open for release into C-11 Canal, conveyed west under US-27 to the headwater of S-502B Gated Culverts. The S-502B structure is opened to allow conveyance of diverted water to the headwater of S-30 Gated Culverts on the C-9 Canal. The S-30 structure is opened to allow conveyance east under US-27 to the C-9 Impoundment inflow pump station S-509. The C-9 Canal gated culverts, S-511, may or may not be closed dependent on if excess runoff in the C-9 Canal is desired to be pumped into the C-9 Impoundment as well. The C-9 Impoundment will operate as an impoundment until such time that North Lake Belt Storage Area (NLBSA) comes on-line to receive diverted runoff from the Western C-11

Impoundment. Once NLBSA comes on-line, the C-9 Impoundment will begin functioning as a Stormwater Treatment Area (STA).

The C-9 Impoundment is also recommended for an Aquifer Storage and Recovery (ASR) pilot project/study in this PIR.

2050 Operations:

In the CERP 2050 recommended plan water diverted from Western C-11 Basin and water from C-9 Basin are routed to the North Lake Belt Storage Area (NLBSA). The C-9 STA will treat releases from the North Lake Belt Storage Area (NLBSA). This treated water may be directed to the Northern Biscayne Bay via C-9, or the North Central Biscayne Bay via C-6 (Miami Canal). In addition, the treated water may be used to meet water supply demands on the South Dade Conveyance System.

Discussion/Action Required: Include the information from the response in the final PIR. Include an introductory conceptual-level overview before delving into the various water control operations.

Action Taken: Section 8.4 summarizes the Interim and Future Operations of the project.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4e. Comment: NAI Display – Figure 2-13. Define the labels for all 7 bars in Figure 2-13. Are the 516,000 Saw grass Marsh habit units in the “NAI BCWPA” bar the increment above the future without-project condition? It appears that the actual increment is only about 63,000 habit units; i.e., the difference between the “2050 Base” and “NAI BCWPA” amounts. Average annual habit units should be displayed.

CESAJ Response: This comment is in regards to two separate figures on that page, Figure 2-12 and Figure 2-13. Figure 2-12 shows the saw grass marsh habitat units and Figure 2-13 shows the snail kite habitat units. The bars on each of the figures are labeled. On Figure 2-12, the bars are labeled from left to right as follows: 2050 Base, NAI BCWPA and WPA Selected Plan, 2050. On Figure 2-13, the bars are labeled from left to right as follows: NSM/Sens4, 2000B3, 2050B3 and NAISAP. These figures are located in Section 6 of the final PIR and are Figures 6-4 and 6-5.

Discussion: The NAI and justification sections are poorly written. The justification starts with a concluding statement. The report needs to present figures and tables, explain what the numbers represent. For example, what is the “2050 base?” Is the 452,000 HU estimate for the 2050 point in time or the average through 2050? What projects are part of this base? The reader should be able to interpret the figures without searching for supporting definitions. Conclude project is justified by the numbers presented in figures and tables.

Action Required: The District will rewrite the NAI and justification analysis and include in final PIR.

Action Taken: The NAI analysis has been rewritten and is provided in Section 7.7.2.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4f. Comment: Relationship with Other CERP Projects. The second paragraph on page 2-100 and Table 2-29 list several CERP projects that cannot be constructed or would not attain maximum benefits without the BCWPA in place. Table 2-29 indicates that most of the projects only need the conveyance capability of BCWPA and two need the SMA improvements. None indicate a need for the impoundments. Without further explanation, it also appears the desired conveyance could be accomplished with the proposed C-502B Borrow Canal modifications previously estimated to cost roughly \$20 million (August 2005 draft PIR). The dependency of other CERP projects on BCWPA appears to be overstated because a substantial portion of the other CERP projects could be enabled by modifying the canal only. The table of dependent projects should be supported with a more detailed discussion of the other CERP projects' functional dependence on BCWPA. Since this presentation does not address the various alternatives and appears to focus on the selected plan, it should be moved to Section 3. The discussion should also clearly demonstrate that now is the time to build the selected plan because of its foundation nature.

CESAJ Response: The need for additional storage to provide an alternate source of water for water supply and aquifer protection and to prevent harmful discharges to natural system areas is well-established as a basic premise of the CERP. The two impoundments in the BCWPA project contribute are consistent with that premise and contribute to the achievement of CERP objectives. The canal conveyance improvements (C-502B Borrow Canal modifications) provide greater operational capability for the BCWPA project to achieve the objectives of CERP to which it contributes.

The BCWPA is the foundation infrastructure link that enables construction and operation of some CERP projects that create improved hydroperiods in the Water Conservation Areas while enabling still other projects to provide more water when needed to both Biscayne Bay and Everglades National Park. Canal modifications alone will not accomplish the latter objectives. In this respect, the table does not provide a fully detailed explanation of the relationship and dependency of the other projects to the BCWPA project.

The following text and the table will be added to Section 6 ("The Selected Plan") in the revised PIR:

Relationship of Other Projects in CERP to BCWPA

The BCWPA project provides much of the storage, seepage management, and conveyance infrastructure upon which a substantial portion of the beneficial effects achieved by the CERP in the Water Conservation Areas, Everglades National Park, and Biscayne Bay (including Biscayne National Park) depend. This dependency is a function of the central location of the BCWPA project components (located adjacent to WCAs 3A and 3B in the

central portion of the Everglades) and the hydrologic infrastructure provided by the BCWPA project upon which many other CERP projects rely. The need for additional storage to provide an alternate source of water for water supply and aquifer protection and to prevent harmful discharges to natural system areas is well-established as a basic premise of the CERP.

The two impoundments in the BCWPA project contribute are consistent with that premise and contribute to the achievement of CERP objectives. The canal conveyance improvement (C-502B Borrow Canal modifications) in the BCWPA project provides greater operational capability for the BCWPA project to store more water to achieve the system-wide objectives of CERP to which it contributes. The BCWPA is the foundation infrastructure link that enables construction and operation of some CERP projects that create improved hydroperiods in the Water Conservation Areas while enabling still other projects to provide more water when needed to both Biscayne Bay and Everglades National Park.

Several of the other projects in the CERP cannot be constructed and operated without the BCWPA in place. These projects include the Central Lake Belt Storage Area (CLBSA), North Lake Belt Storage Area (NLBSA), Flows to Eastern WCA 3B, WCA 3 Decompartmentalization and Sheetflow Enhancement, WCA 2B Flows to Everglades National Park, and WPA Conveyance. These projects depend on the features of the BCWPA to store additional water, convey water where needed, or to manage seepage from natural system areas. Other projects in the CERP could be constructed, but would not be able to fully attain the system-wide benefits attributable to those projects without the BCWPA project in place. These projects include the EAA Storage Reservoir, Everglades National Park Seepage Management, and Broward County Secondary Canal System.

In addition to the structural components of CERP listed above, there are operational components of the CERP that would be affected if BCWPA were not constructed. These include revisions to the Lake Okeechobee Regulation Schedule, Everglades Rain-Driven Operations, Environmental Deliveries to Caloosahatchee Estuary, and Environmental Deliveries to St. Lucie Estuary.

The projects listed above comprise approximately one-half of the total cost of the CERP (1999 price levels) and have an impact on approximately 1.5 million acres of the natural system in south Florida. The natural system areas affected by the BCWPA project include Water Conservation Areas 3A and 3B, Everglades National Park, Florida Bay, and Biscayne Bay. This is a significant portion (approximately 55%) of the natural system area of south Florida. Without BCWPA, restoration benefits of the CERP in these areas cannot be fully achieved. *Table 6-2* displays the projects that rely on the BCWPA project and their relationship to BCWPA.

Discussion: Headquarters stated that the conclusive statement of the need for storage based on “basic premises” should be supported by analysis. The District described the basic premise cited in the Comp Plan. It was agreed that the basic premises of the Comp Plan should be described in the final PIR.

Action Required: The District will state the basic premises and source in the final PIR.

Action Taken: Section 7.7.1 of the PIR describes the relationships of other projects and the basic premise of the Comp Plan.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4g. Comment: Next-Added Increment Analysis Presentation. The Next Added Increment (NAI) analysis remains weak and does not provide a convincing case that the tentatively selected plan is justified on a NAI basis as required by Section 385.9(a) of the Programmatic Regulations. The Programmatic Regulations specifically state, "*The alternative plan to be selected should be the plan that maximizes net benefits...on a system wide basis provided that this plan is justified on a next-added increment basis. Alternative plans that are not justified on a next-added increment basis shall not be selected.*" The PIR needs to present information so readers can draw the same conclusions that the District has with regard to justification as the NAI. Though all readers may not fully agree with the conclusions, the District's rationale and basis for making the determination should be clear to the readers. Decision makers, however, should be able to agree with the conclusion of justification. Draft Guidance Memorandum #2 further elaborates this requirement. The PIR should also demonstrate why the project should be built now rather than later, or combined with other elements, or altered as an interim measure. The PIR should display both the costs and the beneficial effects of the project on a next-added incremental basis, and explain why it is justified. The NAI analysis text in Section 2.4.4 should be moved to Section 3 since it does not contribute to the comparison of alternatives and because it is needed to justify the selected plan.

CESAJ Response: The NAI analysis text has been moved to Section 6.7 ("Plan Accomplishments"). Next-added incremental costs and benefits will be displayed in the revised PIR.

The selected plan is a cost effective plan that maximizes net environmental benefits on a system-wide basis and is justified based on a next-added increment analysis. This conclusion is drawn from an evaluation of the next-added incremental effect of the BCWPA project on saw grass marsh and snail kite (an endangered species) habitat, two important indicators of Everglades ecosystem function. Because of the dependency of other CERP projects on the BCWPA project (see response to comment f), deferring implementation of the BCWPA project would defer implementation of other CERP projects which are particularly important for achieving system-wide restoration objectives in Everglades National Park and Biscayne Bay. Altering the selected plan further as an interim measure is not recommended, as that would likely reduce environmental benefits, since storage volumes are already optimized for the two impoundments and the seepage management area.

The following text and figures have been added to Section 6.7:

6.7.2 Project Justification

The selected plan is a cost effective plan that maximizes net environmental benefits on a system-wide basis and is justified on a next-added increment analysis. The project is justified by its beneficial next-added incremental affect on saw grass marsh and snail kite (an endangered species) habitat, two important indicators of Everglades ecosystem function. Because of the dependency of other CERP projects on the BCWPA project (see section 6.7.1), deferring implementation of the BCWPA project would defer implementation of other CERP projects which are particularly important for achieving system-wide restoration objectives in Everglades National Park and Biscayne Bay. Altering the selected plan further as an interim measure is not recommended, as that would likely reduce environmental benefits, since storage volumes are already optimized for the two impoundments and the seepage management area.

Section 385.26 of the CERP Programmatic Regulations requires that the selected plan be “justified on a next-added increment basis”. The regulations further require a series of programmatic guidance memoranda be developed, including guidance for performing plan formulation and evaluation process and next-added incremental justification. Initial drafts of the six programmatic guidance memoranda were completed and made available for public and agency review and comment on 26 April 2005.

Next-Added Increment Benefits

Using saw grass marsh habitat units and snail kite habitat units as benefits metrics, the next added incremental analysis (NAI) was performed by calculating the total NER benefits attributable to the BCWPA project resulting from incremental implementation of the project. The NAI analysis demonstrates that the Selected Alternative Plan alone would produce 515,761 saw grass marsh habitat units and 454,427 snail kite habitat units (*Figure 6-4* and *Figure 6-5*). For the system formulation evaluation, the BCWPA selected plan would produce 528,190 saw grass marsh habitat units and 454,427 snail kite habitat units.

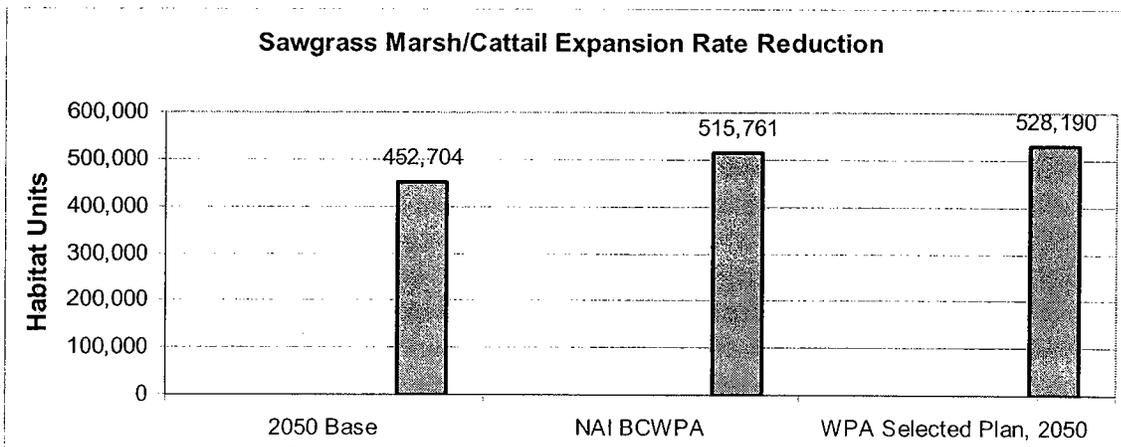


FIGURE 6-4: SAW GRASS MARSH HABITAT UNITS

Snail Kite Habitat Quality in WCA-3

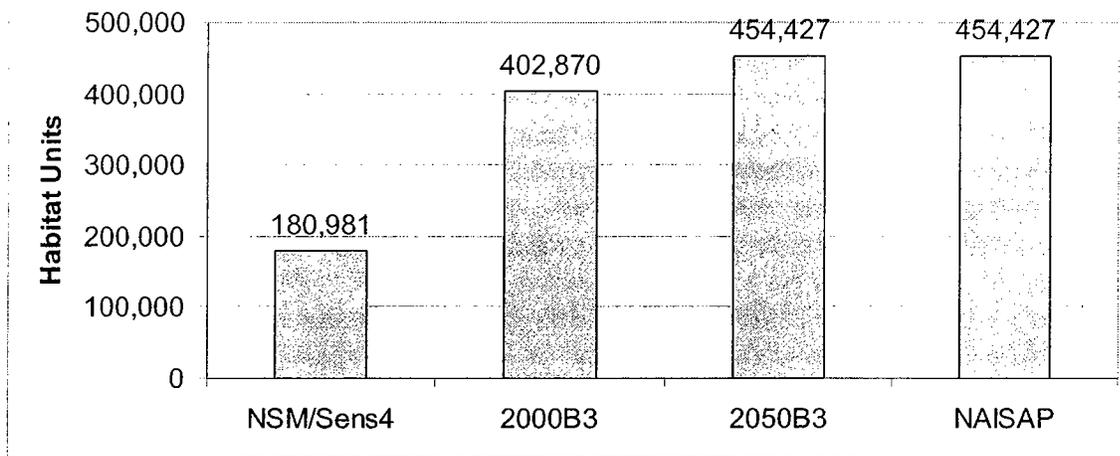


FIGURE 6-5: SNAIL KITE HABITAT UNITS

Discussion/Action Required: See discussion/ action required for comment 4.e. The District will rewrite the justification and NAI sections of the report. The response resolves the concern. Include in final PIR and clearly label figures, i.e., what does each of the bars represent in Figures 6-4 and 6-5? The without project numbers should be clearly labeled and described in text.

Action Taken: A summary of the NAI analysis is included in the new write up in Section 7.7.2 and details of the evaluation are included in Appendix C (Environmental Information)

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4h. Comment: Supporting NAI Analysis. Page 2-111 lists several concerns with the modeling, including: (1) the model of outputs is outdated and has known deficiencies; (2) the models assessing benefits and assurances are not consistent; (3) the scenarios modeled are not necessarily consistent with the NAI analysis methods prescribed for the CERP projects; (4) the with-project scenarios modeled include more incremental differences than just the proposed plan; and (5) the simulated operations are unlikely to be consistent with the actual operations. Page 2-112 downplays these issues by concluding that the plan selection is not likely to be affected. However, it also states that the selected plan might not deliver the anticipated benefits and still comply with the assurance requirements. These issues are significant because they indicate that the project benefits are probably overstated and unreliable, and the assurances might not be achieved. The selection of the model can probably be defended based on the availability of tools at the time the analyses were initiated, even though an improved model is now available. However, the other four issues are not easily dismissed. A revised or new RECOVER run is needed to address these concerns and provide a supportable NAI analysis and project justification.

CESAJ Response: This section of the report will be revised. While it may be concluded from the text in the draft PIR that benefits are “probably overstated and unreliable,” it could just as

easily be concluded that benefits attributable to the project are understated, particularly in light of the fact that the project assurances evaluation identified additional beneficial water delivered to Everglades National Park, which was not characterized in the NAI analysis.

Assurances (i.e., water made available to the natural system and compliance with the Savings Clause) associated with the BCWPA will be complied with. There is a greater level of certainty for the Assurances and Savings Clause evaluations and results, since that work was based on model runs specifically developed for those purposes, and accurately reflects modeling assumptions and operations related to just the effects of the BCWPA project.

If the “new RECOVER run” referred to in the comment actually refers to an updated South Florida Water Management Model run for purposes of updating and improving the NAI analysis, such a decision has significant schedule and budget implications that SAJ and SFWMD managers would need to consider in light of other commitments related to the BCWPA project (i.e., Woodley-Allbright construction dates).

Discussion: The response partially resolves the concern. Headquarters explained the concern is the inconsistent model output for justification of the selected plan and NAI analysis. The District explained that the benefit analysis is performed using the same model as the NAI analysis. The selected plan was justified on a system wide basis using an earlier version of the 2x2 model (ver 3.5) in approximately 2001. Subsequent to the plan evaluation and selection process, a revised model, version 5.4 was developed, approximately 2005. This revised model was used to compute the NAI benefits. The District made a management decision to not rerun the 2X2 model to recompute system wide benefits for the selected plan using the 5.4 version of the 2X2 model based on time and cost. The District pointed out that a peer review of the 2X2 model was performed by IMC (spell out) and IMC also evaluated the application of the model. Headquarters stated that the External ITR to be performed on the final PIR should closely examine the application of the models and whether the versions used are appropriate.

Action Required: The PIR will be revised by rewriting the NAI and justification sections of the report. The IMC will provide peer review of models to the external ITR team. External ITR will review the IMC Peer Review and confirm the proper application of the models was performed.

Action Taken: The PIR was revised by rewriting the NAI and justification sections of the report which included an additional Next Added Increment analysis using a second methodology referred to as BEAM. This analysis validated the original NAI analysis and was provided to the External ITR team as part of the review.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4i. Comment: Peer Review of Modeling. The models used to reach the report’s conclusions (SFWWM, SEEP/W, MODFLOW, GMS) need peer review per OMB’s “Final Information Quality Bulletin for Peer Review” and EC 1105-2-408. 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 approach 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. If that fails, consider asking the Interagency Modeling Center as agents for the Ecosystem Center of Expertise. Add a section in the PIR to present the status of each models' compliance with agency independent technical review, peer review, and certification requirements.

CESAJ Response: MODFLOW, SEEP/W, and GMS tools were not utilized to perform evaluations for the BCWPA project. With respect to the SFWMM, the following information will be added to the Project-Specific Assurances and Savings Clause report (to be included in the appropriate annex):

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."

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.

Discussion/Action Required: The External ITR on the modeling will address conclusions of last peer review. The External ITR will not redo the peer review. The External ITR will focus on the applicability of the model to the BCWPA problem and that the model results are interpreted appropriately.

Action Taken: the Peer Review Report is titled "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." The results for the Peer Review are included in Appendix A and were provided to the ITR team for review. The

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4j. Comment: Description of the Selected Plan. The description of the selected plan lacks basic engineering capability and location information for the plan features. Some of the information in Appendix A should be presented in Section 3 in order to give readers an adequate sense of the scale and capabilities of the proposed plan. This includes the length and height of levee improvements; length, depth, width and capacity of canal improvements; design discharge for pump stations; crest length, height and discharge capacity for weirs and spillways; and diameter and discharge capacity for culverts. The features listed in Section 3 should be shown on site plans within Section 3.

CESAJ Response: The following table and site plan from the Engineering Appendix will be added to the main report in Section 6.1:

Table A-1: Quick Structure Fact Sheet

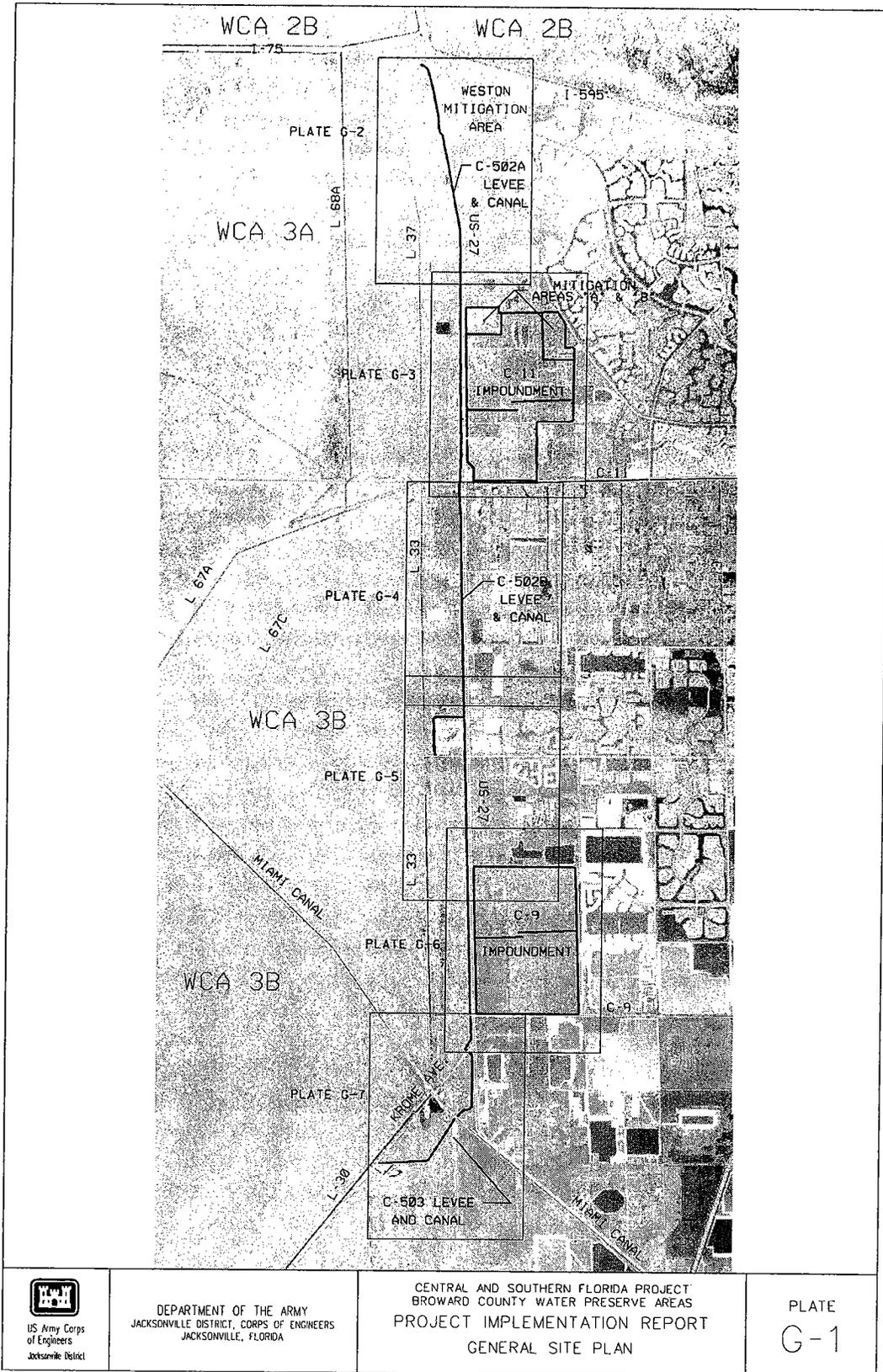
Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
C-11 Impoundment				
S-503	Inflow Pump Station	2,575	SE corner on C-11 Canal	Medium pump station, includes 5-450D cfs, 1-250D cfs, 1-75E cfs.
S-504	Gated Spillway	1,000	SW corner on C-11 Canal	2-bay gated ogee spillway.
S-504A	Obermeyer Gate	2,880	E of S-504 in C-11 Canal	3-bay Obermeyer gate; duplicate of existing S-381.
S-504B	Overflow Spillway	2,000	S embankment btwn 381 and 504A	17' service + 150' emerg spillway, discharges into C-11 Canal.
S-505A	CIT Broad Crested Weir	150	SE corner, N of C-11 Canal	100-foot regular weir.
S-505B	CIT Broad Crested Weir	75	NE corner in C-511 Seepage canal	70-foot combination weir.

Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
(same site)	Ungated Culverts	75	NE corner in C-511 Seepage canal	3-72"CAP ungated culverts, bridge over C-511 seepage canal.
S-505C	CIT Broad Crested Weir	150	SW corner in C-511 Seepage canal	90-foot weir – corrugated weir, same as S-512B.
(same site)	Gated Culverts	150	SW corner in C-511 Seepage canal	3-72"CAP flap gate culverts/bridge prevents backflow from C-11 Canal.
S-506A	Gated Culverts	50	N, connecting Rsrv with Mitigation (A)	1-48"CAP gated culvert. Delivers water to NE Mitigation area.
S-506B	Gated Culverts	50	N, connecting Rsrv with Mitigation (B)	1-48"CAP gated culvert. Delivers water to NW Mitigation area.
S-506C	Stoplog Riser Culverts	17	N, Mitigation (A) to C-511 Seepage canal.	1-72"CAP culvert w/96" Riser. Controls stage in Mitigation (A).
S-506D	Stoplog Riser Culverts	17	N, Mitigation (B) to C-511 Seepage canal.	1-72"CAP culvert w/96" Riser. Controls stage in Mitigation (A)..
C-9 Impoundment				
S-509	Inflow Pump Station	1,075	S, middle on C-9 Canal	Medium pump station, includes 4-250D cfs, 1-75E cfs.
S-510	Gated Culverts	500	S, W of S-509 on C-9 Canal	2-96"CAP gated culverts, control rsvr discharge.
S-510A	Overflow Spillway	2,000	S mid-embankment	17' service + 150' emerg spillway, discharges into C-11 Canal.
S-511	Gated Culverts	500	SE corner in C-9 Canal	2-96"CAP gated culverts, reverse flow for runoff capture.
S-512A	Seepage Pump Station	150	E, middle on C-509 Seepage canal	Small pump station, includes 2-75E cfs seepage pumps.
S-512B	CIT Broad Crested Weir	150	SW corner in C-509 Seepage canal	90-foot weir – corrugated weir, same as S-505C.
(same site)	Gated Culverts	150	SW corner in C-509 Seepage canal	3-72"CAP flap gate culverts/bridge, prevents backflow from C-9 Canal.
S-512C	CIT Broad Crested Weir	150	SE corner in C-509 Seepage canal	90-foot weir – corrugated weir, same as S-505C.
(same site)	Gated Culverts	150	SE corner in C-509 Seepage canal	3-72"CAP flap gate culverts/bridge, prevents backflow from C-9 Canal.
S-513A	Gated Culverts	50	N, connecting Rsrv with Mitigation	2-48"CAP gated culverts. Delivers water to N Mitigation area.
3A and 3B Seepage Management Area				
S-502B	Gated Culverts	1,000	S of C-11 Canal, at Griffin Road	7-96"CAP gated culverts/bridge. Allows diversion south to C-9 Imp

Structure Number	Structure Type	Design Cap (cfs)	Location	Tech Specs
S-515	Gated Culverts	600	Near junction of C-6 with US27, on C-6	2-96"CAP gated culverts. Separates different WQ waters (C-6 Canal)
S-507A	Flood Pump Station	60	Holly Lakes Trailer on C-502B Canal	Small pump station, includes 2-30E cfs pumps.
S-507B	Flood Pump Station	10	Jones Trailer on C-6 Canal	Small pump station, includes, 1-5E, 1-5D cfs.
S-516A	Triangular-Prof Weir	7.5	Confluence of C-502B and C-6 canals	20-foot weir – triangular weir with upstream/downstream slope of 1 on 1.
S-516B	Triangular-Prof Weir	7.5	Confluence of C-503 and C-6 canals	20-foot weir – triangular weir with upstream/downstream slope of 1 on 1.
B-500	Bridge	1	FP&L Sub-station	Spans across C-502B.
B-501	Bridge	1	Holly Lakes	Spans across C-502B U-Channel
FPL 1-4, FPL 7-19	Ungated Culverts	< 1	Along FP&L access Road within area	Single CAP 48"bar, ungated
FPL 5 FPL 6	Ungated Culverts	< 1	Along FP&L access Road, in 3ASMA	Double CAP 48"bar, ungated

Notes:

1. For pump stations, D=Diesel motor driven, E=Electric motor driven.
2. Medium pump station indicates no individual pump is > 450 cfs.
3. Small Pump Station indicates no individual pump is > 250 cfs.
4. For gravity structures, "design capacities" do not imply maximum capacity.
5. CAP=Corrugated Aluminum Pipe
6. Obermeyer Gate is proprietary and is an air bladder actuated gate.
7. CIT=California Institute of Technology developed weir formula for weir with stilling basin commonly used.



US Army Corps
of Engineers
Jacksonville District

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

CENTRAL AND SOUTHERN FLORIDA PROJECT
BROWARD COUNTY WATER PRESERVE AREAS
PROJECT IMPLEMENTATION REPORT
GENERAL SITE PLAN

PLATE
G-1

Discussion/Action Required: The final PIR figures should be revised to show all of the features in the tables and show all of the features of the selected plan. The text should reference the figures.

Action Taken: The final PIR figures were revised to show all of the features in the tables and show all of the features of the selected plan. The text also references the figures.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4k. Comment: Lists and Tables of Contents. A list of figures and a list of tables in the main report would be helpful. Most of the appendices lack tables of contents and lists of figures and tables, making this document more difficult to read than is necessary.

CESAJ Response: A list of tables and figures will be added to the table of contents page for the main report. Table of contents and lists of tables and figures will be added to the appendices and annexes.

Discussion/Action Required: As stated in above response.

Action Taken: A list of tables and figures were added to the table of contents page for the main report. Table of contents and lists of tables and figures were added to the appendices and annexes.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4l. Comment: Commitments for State and Federal Assurances. Section 3.6.5.8, page 3-46, discusses the requirement to reserve the quantity, quality, timing and distribution of existing water determined in this DPIR as available and beneficial. The main report, preferably the description of the selected plan, should present this quantity, quality, timing and distribution of existing water in a clear and concise display.

CESAJ Response: SAJ requests that HQ elaborate on what is needed for “clear and concise display” to present information. A specific format and information to be included should be discussed at the FRC on May 4, 2006.

Discussion: Headquarters asked where does the numbers for the quantity, quality, timing and distribution of existing water considered available and beneficial are displayed in the PIR. The District explained that this PIR was prepared prior to the adoption of a CERP-wide PIR template. The document is being rewritten and reorganized to comply with the standard CERP PIR template.

Action Required: The required information will be displayed in the assurances section of the final PIR with further detail provided in a specific Savings and Assurances Annex.

Action Taken: The required information is displayed in the assurances section (8.5) of the final PIR with further detail provided in a specific Savings and Assurances Annex.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4m. Comment: Water Budget for the Selected Plan. Explain how much water would be cut off from flowing east by the SMA, how much water will no longer come from the east into WCA 3A/3B, and how much water will be captured by the C-11 and C-9 impoundments and returned to the east. Such information should be available in various forms (frequencies, seasonal, entire period of record, etc) for the district to have modeled and project effects and benefits.

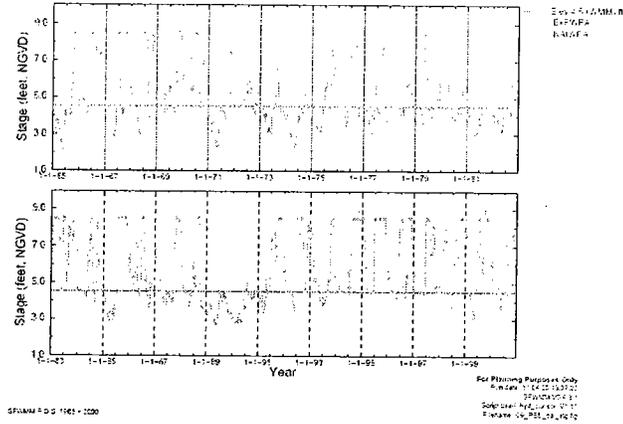
CESAJ Response: The WCA 3A and 3B Seepage Management Areas components reduce seepage from WCA 3A and 3B by reducing the water elevation difference across the L-33 and L-37 Levees raising water elevations in the wetlands immediately east of the Levee borrow canals. Model output from the sub regional groundwater model used for development of this component during the WPA Feasibility Study, the Broward County Modflow model (a.k.a. Broward County Groundwater Flow model), show a reduction from approximately 147,000 acre-feet of seepage in existing condition and future without project conditions to approximately 77,000 acre-feet with the Broward County WPA project in place. That is a reduction of 70,000 acre-feet of seepage losses to the east.

Model Simulation	Groundwater Flow across L-37 and L-33 Levees (acre- feet/year)
95BASE –existing conditions	147,552
D13R – Yellow book-full CERP conditions	36,062
50BASE –future w/o project conditions	147,682
2010WPA- with project conditions	77,493
WPATSP- WPA FS full CERP conditions	99,790

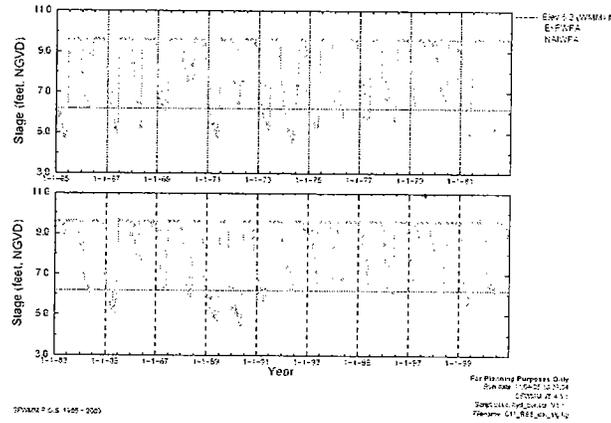
The C-11 and C-9 Impoundments are designed to receive stormwater diverted from the Western C-11 Basin that would otherwise be pumped to WCA 3A. This diversion reduces nutrient loads to WCA 3A and the Everglades Protection Area. Model output from the latest modeling, the SFWMM version 5.4 used for project assurances, was the S-9 pump station pumped 70,800 acre-feet/year of stormwater from the C-11 Western basin to WCA 3A under existing (without project) conditions. Under modeling with project conditions, 22,300 acre-feet/year of stormwater was pumped to WCA 3A. That is a reduction of 48,500 acre-feet/year of stormwater being pumped to the Everglades. Due to the configuration of the basin and the mixing of seepage and stormwater, the numbers conservatively assume all C-11 Western Basin stormwater that isn't diverted to the impoundments is pumped through the S-9 or the S-9A pump station. Also note that this modeling effort did not maximize the off peak bleed down of the C-11 Impoundment to the east through the C-11 east basin due to modeling limitations. The ability to regain storage capacity in the C-11 Impoundment off-peak (after storms) may further reduce S-9 stormwater pumping to the Everglades.

Below are model out graphics including Stage Hydrographs and Stage-Duration Curves for the C-9 and C-11 Impoundments.

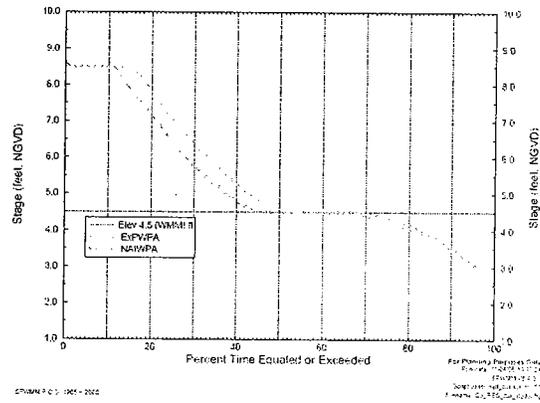
Stage Hydrographs for C-9 Reservoir

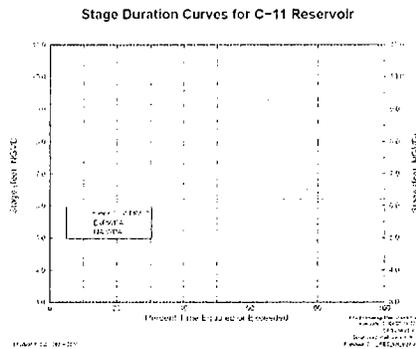


Stage Hydrographs for C-11 Reservoir



Stage Duration Curves for C-9 Reservoir





Discussion/Action Required: Include the information from the response in the PIR. The table of different model results and the figures should be supported with explanations of the simulations and their differences.

Action Taken: Section 6.1.4 of the PIR has been revised and explanations are provided to support the figures.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4n. Comment: Benefits of Moving Water East. It would be helpful to explain and quantify the economic and environmental values of capturing and delivering water eastward from the C-9 Impoundment. Simply saying it would be beneficial but has not been quantified in NER or NED terms is not very helpful. Altering flows is not necessarily good. Explain what they are and why they are good, or at least not harmful.

CESAJ Response: Water will be delivered out of the C-9 Impoundment into the C-9 (aka “Snake Creek”) Canal to maintain canal water levels for both water supply (via groundwater and wellfield recharge) and aquifer protection (against saltwater intrusion). The existing coastal structure is the S-29 structure which controls canal elevations and discharges into the most northerly area of Biscayne Bay. The beneficial economic effects of this function have not been monetized for this project; however, the beneficial environmental effects on natural system areas in the Everglades (resulting from the reduction in water withdrawn from the natural system) were quantified as part of the system formulation and next-added incremental analyses.

It is also generally accepted that there would likely be a beneficial environmental effect on estuarine portions of the Snake Creek Canal and Biscayne Bay in the vicinity of the mouth of the Snake Creek Canal resulting from the delivery of additional fresh water from any source, including the C-9 Impoundment. This incidental environmental benefit, although a positive contribution to ecosystem function in the Biscayne Bay system, is likely to be negligible compared to the overall water budget needs of the Bay and was not quantified for purposes of plan selection or justification.

Discussion/Action Required: The District will clearly describe the beneficial effects of moving the water eastward in the final PIR.

Action Taken: Section 7.7.2.1 of the PIR for benefits to the Snake Creek and Biscayne Bay. It should be noted that benefits to these areas are not harmful and are very minor.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4o. Comment: Credit for In-Kind Services. The District Engineer's Recommendations include crediting the Sponsor for in-kind work completed prior to the execution of a PCA. This recommendation should be supported in the body of the PIR with a section on credit. The section should present the authority (law text) for the credit; state the eligibility requirements for credit; identify the general procedures for securing the Secretary's determination that the work is integral to the project and therefore creditable; and summarize the scope of the work the sponsor intends to complete with in-kind services. This information should be presented in the Section 3 implementation plans along with the Acceler8 plans.

CESAJ Response: The District Engineer's Recommendation section on crediting has been incorporated into Section 6.2.2 of the main body of the PIR (including Acceler8 plans set forward by the non-Federal sponsor). The authority for the credit will be established by Congress in a Water Resource Development Act or other law established. The authority will be established based on the recommendations presented in the Final PIR/EIS as well as the Chief of Engineer's Report.

Discussion: Retroactive credit, i.e. credit for work completed prior to the execution of an agreement that defines the credit, is contrary to Army policy. Is an agreement in place that includes credit for work that the sponsor may implement prior to the PCA execution? Section 6.2.2 needs to state the scope of activities that would be creditable.

Action Required: The final PIR will be revised by using the final approved language on pre-PCA credits from the Site 1 Impoundment Project.

Action Taken: The final PIR reflects the latest coordinated crediting language starting with the Site 1 project.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4p. Comment: Selection and Scale of Project Elements. While the general case for impoundments, seepage control and conveyance capabilities are made, the DPIR does not explain the need for each of the various water control and water conveyance features (pump stations, canals, culverts, spillways and weirs). It does not establish that each one is scaled appropriately (i.e., are the most cost effective means of providing the recommended level of outputs) in accordance with Exhibit G-1, ER 1105-2-100. While a cost effectiveness analysis is not needed, the PIR should explain why each significant feature or modification is needed and why its scale or capacity is appropriate. This information is necessary to confirm that the selected plan will be effective and efficient.

CESAJ Response: Four problem statements are provided in Section 4.2 of the final PIR and are listed here for convenience:

- (1) There is a loss of habitat function and species diversity and abundance in WCA 3 due to severe flooding and drought.
- (2) Discharges of excessive runoff from the Western C-11 Basin through the S-9 Pump Station adversely affects WCA 3 by increasing nutrient loadings to the area, especially total phosphorus. The nutrient loading results in an undesirable shift from communities dominated by saw grass to those dominated by cattails.
- (3) Water that is essential for wildlife habitat is being lost from the WCAs via seepage.
- (4) There is insufficient water available in the regional system to meet urban and environment demands during the extended dry periods.

In terms of the WCA 3, the problems identified are related to excessive inflow water when it is wet (S-9 flood protection pumping), excessive outflow when it is dry (releases and seepage out), excessive nutrient loading (S-9 flood protection pumping), and excessive water lost to tide. A conceptual design that could solve these problems would divert flood protection pumping by S-9 Pump Station into a “surge tank” that provides groundwater recharge and may be released later to meet water demands when the area remains dry for extended period of time. The conceptual design is limited by constraints such as WRDA 2000 Savings Clause, State Assurances, ability to be permitted, and realistic costs. The project as designed and presented meets the scope effectively as set by inter-agency team expectations and is scaled appropriately to manage operations and to achieve benefits claimed in the PIR.

Article I. Control of Seepage Lost from WCA

The region of south Florida that includes the project site has a very high groundwater transmissivity and the storage of water aboveground has limits where it becomes economically unfeasible to control without impermeable barriers. The area does have a layer of limestone caprock, but this material typically has, as near and onsite photos show, many solution cavities (conduits) that produce a high leakage property. The upper semi-confining unit is approximately 80 feet below surface. Therefore, sheet piles (common engineering feature used for impermeable barriers) would have to be fairly deep and installation itself would be costly due to the layer(s) of limestone rock between the caprock and the semi-confining unit. The Restudy did examine the use of sheetpile along the East Coast Protection Levee to eliminate all seepage to the east from WCAs; however, costs were very high compared to the inclusion of a hydraulic barrier or “step down” (Seepage Management Area) and aboveground impoundments (C-11 and C-9). In addition, there were enormous negative impacts to existing natural and mitigation wetlands (demonstrated through SFWMD model), as well as expectations that northern Biscayne Bay would be largely impacted by the reduction of freshwater inflow through the aquifer system affecting the natural salinity envelope. Therefore, the project provides for aquifer/groundwater recharge as a solution to concerns over controlling of seepage lost from WCA 3. The Impoundments are included in following sections; however, the Seepage Management component of the project is discussed in the following.

1) Seepage Management Area

To provide the hydraulic “step down” function, the existing Everglades Buffer Strip lands will form the footprint of the WCA 3A and 3B Seepage Management Area (SMA). The SMA is ideal for this function in that it is adjacent to WCA 3 and has two existing canals/borrows/ditches running parallel to the boundaries that can be controlled separately for different functions. The SMA itself includes wetlands, some with high ecological value and others that were historically wetlands and are candidates for lift as part of restoration. The project will allow seepage from WCA to maintain a controlled seasonal water level within the SMA that benefits the hydroperiods for targeted flora and fauna indigenous of the area. The L-37 and L-33 Levee borrow canals located on the western side (adjacent to WCA 3) have no modifications in feature or operations in the plan at this time, although through future adaptive management, they may provide a means to reduce seepage losses by an operational increase in water levels. However, flow through existing structures may increase in proportion to benefits, but operations will not be allowed that cause negative impact to urban and wetland areas or violate WRDA 2000, State Assurances, or permits.

The SMA component provides a western levee that is intended to maintain a canal parallel with US 27 with varying degrees of water quality from the SMA contained wetlands. In sub-tropical Florida, wet seasons can create substantial pooling and the mixing of these waters is not considered to be advantageous to the project purpose or benefits claimed. The Borrow canal created in construction of the levee, C-502A and southern reach of C-502B (south of C-9 Canal), and the inclusion of the diversion canal, C-502B northern reach) provides an important function in its own design. To meet the WRDA 2000 Savings Clause, the implementation of the project cannot significantly impact existing levels of service of flood protection. The impoundments (discussed next section) will include self-seepage management systems; however, with increases in average water levels in SMA, a means to control seepage created with elevated water levels will be required, though in coordination with the impoundment components. The canals C-502A and C-502B provide the means for that function. Both canals use available existing structures for maintenance of water levels to meet the WRDA 2000 Savings Clause. C-502B at its southern extreme does include a 20-foot long weir to achieve necessary maintenance for this seemingly “cutoff” area for the “without NLBSA” interim.

With the increase in beneficial water levels within the SMA, certain features are necessary to cost effectively mitigate for negative impacts. Two mobile home communities, Holly Lakes Park and Jones Trailer Park, which reside within the project area, will require measures to mitigate for expected increases in seepage into their “local” drainage basins. The Restudy examined the costs associated with the purchase of Holly Lakes Park and the WPA Feasibility Study efforts examined Jones Trailer Park. Both analyses resulted in decisions to mitigate for possible negative impacts with implementation of the project. The use of ring levees with seepage interception/collection canals with pump stations was designed for this purpose. HEC-HMS hydrologic modeling was used to verify design capacity requirements and is included in the Plan.

Florida Power & Light (FPL) has electrical transmission lines/towers with a maintenance access road running parallel to the WCA 3 boundary and near the center of the SMA. At the time of

this report, it is not certain whether mitigation will be required for these existing features with an increase of water levels. Costs associated with road raising, road crossing ungated culverts, and exposed tower coating were included in the cost estimate.

Article II. Control of Seepage Lost from Impoundments

Because of the areal subsurface physical characteristics, liners for impoundment bottoms were examined early during the WPA Feasibility Study efforts and were cost estimated for another project, the OPE Acme Basin B. From results of that cost effective analysis, liners were dropped as real seepage management alternatives for the other WPA impoundments. Therefore, the C-11 and C-9 Impoundments were modeled with a calibrated and peer reviewed MODFLOW model (GMS platform) with results demonstrating a depth of 4 feet (versus 2 and 6 feet) to be the optimal depth that maximizes storage volume and that typical means of seepage control can be utilized, including seepage interception and collection canals with a pump station for return pumping capabilities. The C-9 Impoundment model results demonstrated a higher expected seepage rate than C-11, though with an acceptable risk and uncertainty. However, partially because of this risk and uncertainty, this PIR recommends a study to be authorized to examine the benefits to CERP if the C-9 Impoundment contained an Aquifer Storage and Recovery system that would allow for faster drawdown of the impoundment. The seepage management system for both impoundments was designed primarily from results derived from SEEP2D model runs. Because of limited data available for a Feasibility Study level of engineering, an engineering safety factor of 5 was assigned for the sizing of required canals, culverts and pump stations. The 5-factor remains an appropriate factor relative to known risks and uncertainties in subsurface characteristics of the area. The seepage management system size will be readdressed and finalized in detailed design efforts when additional field data is gained by additional core borings, slug tests and pump tests typical for Corps projects that include a reservoir.

2) C-11 Impoundment

The C-11 Impoundment was selected primarily for four reasons: (1) to divert nutrient loaded water that is currently pumped into WCA 3 into other storage, (2) to enable maintenance of a WCA seepage hydraulic barrier, (3) to replace WCA 3 groundwater seepage to provide aquifer/groundwater recharge, and (4) to meet water demands in the C-11 Basin with runoff collected that would otherwise be lost to tide, thereby replacing the water that would be supplied by the natural system as existing seepage or in the future as direct releases.

To effectively divert nutrient loaded water from WCA 3 via S-9 Pump Station (2880 cfs capacity), the C-11 Impoundment's C-503 Pump Station has a 2575 cfs pumping capacity that includes an electric 75 cfs seepage pump. A portion of the S-9 pumping capacity, approximately 300-500 cfs, is for WCA 3 seepage return for which the constructed C-11 Critical project designed a 500 cfs system to control without the pumping of mixed nutrient loaded water collected in the western C-11 Canal. Therefore, to supplant S-9 Pump Station and not reduce existing level of service of flood protection (per WRDA 2000), and to meet project objectives in function, the C-11 Impoundments S-503 Pump Station pumping capacity is set appropriately.

Since C-11 Impoundment has an optimized 4-foot storage depth due to seepage management concerns, it was clear through Restudy modeling efforts with SFWMMMD and normal spreadsheet analysis that C-11 Impoundment by itself is not efficient nor cost effective in addressing the problem statements. With an available real estate tract of 1500 acres, it takes only 1.2 days to fill the impoundment at full pumping capacity. In the 2050 full build out CERP Plan, North Lake belt Storage Area (NLBSA) was included to complement and supplement the C-11 Impoundment in that 99% of S-9 Pump Station activity was reduced through diversion when online. The C-11 Impoundment is still necessary for two reasons: (1) to act as a surge tank to minimize impact of extreme events and (2) to meet water supply demands with water that would currently be lost to tide as noted earlier. However, since NLBSA real estate will not be available until after the year 2025 due to active and profitable limestone mining activities, the C-9 Impoundment/STA was included in the Plan. The outflow structure, S-504, was designed to meet that of the C-9 Impoundment inflow pump station, S-509.

3) C-9 Impoundment

The C-9 Impoundment with approximately the same size tract as the C-11 Impoundment was selected primarily for five reasons: (1) to supplement C-11 Impoundment diversion of C-11 nutrient loaded water in the “without NLBSA” interim by additional storage capacity, (2) to enable maintenance of a WCA seepage hydraulic barrier, (3) to replace WCA 3 groundwater seepage to provide aquifer/groundwater recharge, (4) to meet water demands in the C-9 Basin with runoff collected that would otherwise be lost to tide, thereby replacing water that would be supplied by the natural system as existing seepage or in the future as direct releases, and (5) with NLBSA online, convert to an STA to treat releases from NLBSA destined for targeted demands, including that of Biscayne Bay that is currently impacted by excessive nutrients through untreated runoff. SFWMMMD modeling demonstrates that as a NAI project system, S-9 pumping is reduced approximately 60-70% of the time with inclusion of the C-9 Impoundment.

With the C-11 Impoundment functioning as a diversionary “surge tank,” it is not necessary to duplicate C-11 Impoundment’s S-503 Pump Station pumping capacity of 2500 cfs. Although the S-509 Pump Station may or may not be used in conjunction with the future NLBSA (number of years in service will be consequential in future design and decision), it is currently designed to have a pumping capacity to match that of an STA. As an STA, the C-9 STA/Impoundment will not be required to have a treated effluent with a constrained limit of 10 ppb TP limit as water supply targets do not include the natural system (future Central Lake Belt Storage Area (CLBSA) has that as main purpose). Releases for water supply will be conveyed in canals, which include a mixture of typical untreated urban water with that of treated water, toward basins to meet their demands and Biscayne Bay demands. The C-9 Impoundment’s S-509 Pump Station is designed with a 1075 cfs pumping capacity that includes an electric 75 cfs seepage pump. Utilizing an internal levee that functions as a flow baffle, 1000 cfs provides what is currently thought to be an acceptable range of flow velocity between 0.10 and 0.20 fps, or 0.14 fps for 1000 cfs inflow. The outflow structure, S-510, was designed with a 500 cfs capacity to meet the expected water supply deliveries during dry season times or low flow conditions as determined by the SFWMMMD model during the “without NLBSA” interim. The structure will be able to sustain the equivalent 1000 cfs inflow during times when water is continuously supplied by NLBSA with a higher maintained operating water level.

C-9 Impoundment's gated divide S-511 culvert structure is designed with a bi-directional flow capacity of 500 cfs. The structure provides two project benefits: (1) allows for higher water levels to be held west of the structure for seepage from WCA 3 reduction benefits and (2) prevents diversion operations from the C-11 Basin from impacting the C-9 Basin inadvertently. The 500 cfs capacity matches that of C-9 Impoundment's minimum outflow discharge requirement for water supply and draw down operations. The structure also allows up to 500 cfs of excess urban runoff to be routed to the impoundment when storage is available and C-11 diversion operations are not in conflict with respect to flow rates being diverted (combination not exceeding S-509 pumping capacity).

4) Seepage Management Area

The reach of the conveyance canal C-502B between the C-11 and C-9 Canals is designed with a capacity to match that of C-11 Impoundment's C-504 diversion discharge capacity and C-9 Impoundment's C-509 pumping capacity of 1000 cfs. A gated structure C-502B provides 1000 cfs flow through capacity while allowing the C-11 Canal to be controlled at a lower elevation during normal operations, seepage return and flood protection.

Article III. Other Necessary Features

The C-11 Impoundment includes a gated divide structure S-504A that is designed for low head loss conveyance capacity of 2880 cfs, matching that of the S-9 Pump Station. The project diverts (without NLBSA interim) approximately 60 to 70% of S-9 pumping; however, until NLBSA comes online, the Western C-11 Basin's ultimate flood protection includes the S-9 Pump Station as there are times C-11 and C-9 Impoundments will be full. The existing gated divide S-381 was constructed as part of accelerated critical project features, including the C-11 Canal. Impact to existing levels of flood protection was noted with design of a smaller predecessor medium head loss spillway that resulted in the low head loss structure that was approved and constructed. S-504A is an identical structure to S-381, but one that has a different function versus seepage return. When diversion operations are occurring, temporary raising of canal levels will be required to provide efficient hydraulic head to gravity convey water to the C-9 Impoundment without forward pumping. Conveyance efficiency is an important parameter in South Florida as topographic relief is on the order of one foot per 10 miles and subsurface is primarily hard limestone (blasting requirements assumed). Another option is forward pumping that would require another 1000 cfs Pump Station with perpetual O&M corresponding to size and usage. S-504A allows canal water level increases on the western side for diversion without corresponding increase and on the eastern side where seepage through the C-11 Canal levee-bank (side-cast constructed, not designed to perform "levee" function) would impact residents in the South Broward Drainage District (SBDD). An alternative pump station for area residents was examined, but cost analysis with O&M demonstrated it not to be the cost effective solution. However, this alternative may be readdressed in detail design when additional geotechnical information is acquired for final seepage analysis.

The C-11 Impoundment includes two separate mitigation areas. Structures associated with these two areas are minimal and adequate documentation may be found within the Engineering Appendix (Appendix A).

Service and auxiliary spillways are related to embankment design. This documentation may also be found within the Engineering Appendix.

A gated S-515 structure located on the C-6 Canal is included in the project. The design flow capacity of the structure is equivalent to that required for the C-6 Canal when water supply deliveries are being made through existing gated S-31 culvert structure. The structure provides two project benefits: (1) allows for higher water levels to be held west of the structure for seepage from WCA 3 reduction benefits and (2) allows for deliveries of excess natural system water produced by the SMA to be made through existing gated S-32 and S-32A structures into the L-30 Levee borrow canal. The structure prevents mixing of nutrient loaded water with the natural system water that is targeted for L-31N or Northeast Shark River Slough.

Discussion: The response does not fully explain why each of the recommended features (listed in the response to comment 4j below) are needed and why they are appropriately sized. For example, why are we recommending the specific width and depth of the C-502-b canal? Why should S-503 have a 2,575-cfs capacity? The PIR must explain why the recommended capacity or capability of each impoundment and the SMA are appropriately sized. And then discuss the need for and sizing of each of the lesser appurtenant features. Presumably the capabilities of the major components drive the sizing of the appurtenant features. The PIR needs to explain the needs and relationships. The District explained that the Comp Plan identified the capacity, the PIR affirmed the capacity. Consequently the appropriate features are designed to achieve that capacity.

Action Required: The District will add a paragraph or two in the description of the selected plan that describes generally how each feature was sized.

Action Taken: Section 7 of the PIR describes the process from the selection of the plan to final plan design which includes the mitigation areas.

HQUSACE Assessment: This issue is NOT RESOLVED. There is no indication of where the information offered in the District's response was included in the FPIR. Without this information, the FPIR offers no rationale at all to establish that each of the various water control and water conveyance features (pump stations, canals, culverts, spillways and weirs) are necessary and that each one is scaled appropriately (i.e., most cost effective means of providing the recommended level of outputs) in accordance with Exhibit G-1, ER 1105-2-100. The response itself still does not establish the function and need for all of the project features at the recommended scale and cost.

Action Required: The District will add a paragraph or two in the description of the selected plan that describes generally how each feature was sized.

Action Taken: A write-up was added to section 7 of the main report which describes all the structures in the project and how they were sized and optimized.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4q. Comment: Irrigation and Water Supply Improvements. Section 3.3.2 on page 3-11 says the project will reduce unmet demands for supplemental irrigation in four basins and improve water supply in two others. What is the scale of these benefits relative to the other outputs of the selected plan and why aren't they quantified with the rest of the selected plan's outputs?

CESAJ Response: The text cited refers to the Savings Clause evaluation, which involves a comparison of a project's effects when implemented to Pre-CERP Baseline (2000) conditions. Compared to 2000 conditions, the BCWPA project will create some modest improvements in the volume of unmet demands for irrigation and municipal water supply. When compared to existing (2005) without-project, the scale of these benefits is insignificant (see section VI.C, "Water Made Available by the Project for Other Water-Related Needs of the Region", of the Draft Project-Specific Assurances and Savings Clause Requirements report). These benefits were not quantified compared to future without-project conditions, since increasing water supply is not a project objective.

Discussion/Action Required: See above response.

Action Taken: See above response.

HQUSACE Assessment: This concern is **RESOLVED** by the action taken.

4r. Comment: Without-Project Water Quality for C-11 Basin Runoff. The DPIR states that C-11 runoff will continue to be discharged to the WCA in the future without project condition and that habitat quality in the WCA will continue to degrade. The District has confirmed that future without project runoff from the C-11 basin will meet applicable State water quality standards. The PIR be explicit about the quality of future without-project runoff from the C-11 basin and describe the actions that non-Federal interests will take to meet applicable State water quality standards.

CESAJ Response: The following can be found in Section 3.6 of the PIR:
In addition to the construction of the critical project, a Best Management Practice (BMP) program is being established within the C-11 West Basin to reduce pollutant loads currently discharged in stormwater to the C-11 West Canal. This program includes implementation of nursery, equine, and turf and landscape BMPs within the basin that will reduce nutrient loadings. Also, drainage districts within the C-11 West Basin have or will implement capital improvement

projects and operational changes to provide additional pre-treatment of stormwater runoff prior to discharge to the C-11 West Canal.

Increased enforcement through the Regulatory branch of the SFWMD is underway within this basin to eliminate point source pollutant discharged to the C-11 West Basin. Increased monitoring of stormwater within the basin has and will continue to identify “hot spots” within the basin in order to focus enforcement efforts.

In summary, the four-pronged approach 1) the Western C-11 Water Quality Improvement Critical Project, 2) the BMP program, 3) the monitoring program and 4) the Regulatory enforcement effort will help reduce excessive nutrient discharges to the EPA and will enhance the SFWMD’s ability to meet the State’s water quality standards.

Discussion/Action Required: See above response.

Action Taken: See above response.

HQUSACE Assessment: This issue is **RESOLVED**.

4s. Comment: C-9 Impoundment Benefits. The District indicated in the 01 March 2006 conference call that the C-9 Impoundment benefits are limited to moderating the affects of discharges in the C-9 area and to Biscayne Bay. The benefits of moderating the discharges should be quantified in the PIR. Also, some measure should be provided of the value the C-9 Impoundment provides as an extension of the C-11 storage, particularly for habitat.

CESAJ Response: In the executive summary there was a sentence that stated “The proposed project would also improve the marine aquatic ecosystem at the mouth of the Canal 9 (C-9) by reducing harmful discharges.” This is not a true statement and the sentence has been deleted from the report.

RECOVER Performance Measure (PM) SE-9 Snake Creek Surface Water Discharges to North Biscayne Bay was evaluated to detect if any project benefits could be claimed for the estuary. The goal of the performance measure is to maintain and improve conditions for the oyster bed growth at the mouth of Snake Creek through controlling the level of freshwater discharge through the S-29 control structure. The CERP target is to maintain the salinity downstream of S-29 at water quality station SK 01 at between 5 and 25 ppt. To achieve this target the average monthly flow should be maintained between 1,120 acre-feet per month and 41,470 acre-feet per month.

Base on a comparison of the average monthly flows through S-29 for the 2050 base (FWO project) and the NAI (2050 w/Broward). The NAI actually discharges more water through S-29 into the estuary. There is more water discharged to the estuary during the dry season which is an improvement, but there is also more water discharged during the wet season when it is not needed.

The average monthly flows for both the NAI and FWO project fall within the PM's target range of flows required to maintain optimum salinity conditions for oyster growth. Therefore, for this PM, there are no additional benefits derived from the NAI over the FWO project condition.

Discussion/Action Required: Include information regarding the benefits that C-9 provides on top of C-11 in the formulation of alternatives in Section 5

Action Taken: The information regarding the benefits that C-9 provides on top of C-11 is included in the formulation of alternatives in Section 5 of the PIR. This feature was evaluated as an added component during the formulation and evaluation of alternatives.

HQUSACE Assessment: This issue is **RESOLVED**.

4t. Comment: Description of the Existing System. A summary of the existing system and its operation, including key water control and conveyance features, is needed as an early part of the existing conditions presentation in Section 1. It should state where the waters go under without-project conditions. All of the pertinent water sources, water control features, conveyance features, and destinations should be identified. A clear without-project condition description is needed before one can understand the analyses leading to the selected plan. A readable, uncluttered figure that shows each feature mentioned and the direction of flows would help greatly.

CESAJ Response:

C-11 Drainage Basin: Excess water in the eastern (low) basin (east of Culvert 13A, basin divide structure) is discharged to the east by way of C-11 (South New River) and S-13 to coastal estuary (tide). Excess stormwater in the western basin (west of Culvert 13A) is pumped from C-11 into WCA 3A by way of S-9 with S-381 open. For normal non-flood operations, S-381 is closed and S-9A return pumps excess seepage water into WCA 3A. If S-13 is not pumping to capacity, additional discharges of excess water from the western basin can be made to the eastern basin by way of Culvert 13A (S-13A) which will discharge to tide.

C-9 Drainage Basin: Excess water in the C-9 basin is discharged to the east to tide. Or if the tailwater stage at S-30 and S-32 is less than 3.0 then excess water in this basin may be discharged through S-30 and S-32 to the Miami Canal.

Discussion/Action Required: Include the information from the response in the final PIR.

Action Taken: This information is included in Section 8.4.1 of the PIR.

HQUSACE Assessment: This issue is **RESOLVED**.

4u. Comment: Selected Plan Features and Operations. This complexity of this project makes it difficult to understand and assess the outputs and issues associated with the Selected Plan, such as the savings clause, assurances and water reservations. This can be addressed first with a

concept-level overview of the project features, functions and operations, followed by more detail on the construct and operation of the major features. A good overview address the rise and fall of water flows over time and seasonally. A simple narrative of the expected operational flow of water within the project and its connection to the system would help more than model data or statistical graphics in depicting how the proposed management and control of water would achieve the ecosystem objectives of the project. To help achieve this, a simple, conceptual-level overview of the elements of the entire selected plan and its operation should be presented in one place, Section 3.1.1, before the project components are described in more detail. Readers should not have to dig through the appendices for this information. Figure 3-1 should show and identify all of the major components and other features of interest including the WCA 3A/3B and the C-502B Borrow Canal. The operation overview should show where the water moves from, how it is conveyed, and where it would be delivered. Key aspects of the operation should be described along with any secondary operation modes, including high runoff and minimum flow conditions. The water storage and movement accomplishments (e.g., volume of storm runoff avoided, volume of seepage prevented, volume of water to Everglades, etc.) should be presented. This will help support the habitat output estimates. A display of the area water budgets with and without the selected plan would help. To support the descriptions of the three projects beginning in Section 3.1.1.1, a conceptual plan (figure) is needed for each one to show all of the new, modified, and existing water impoundment, conveyance and control features or elements necessary to achieve the outputs. The flow of water should be depicted. A conceptual plan view and typical cross-section(s) are needed for each element, including levees, with key dimensions, elevations, and design capacities. Supporting text should briefly describe the movement and control of water through the project elements under the key operation scenarios. A similar section should be added for the C-502B Borrow Canal modifications.

CESAJ Response: Key aspects of the Operations for the Broward County Water Preserve Area (BCWPA) project are described below. The operations for the three components that make up the BCWPA project are described separately though the components work together. The components include the Water Conservation Area (WCA) 3A and 3B Levee Seepage Management Area (SMA) component, the Western C-11 Diversion Impoundment and Canal and the C-9 Impoundment. The BCWPA project works in conjunction with the Western C-11 Water Quality Improvement Critical Project. An overview of the three CERP components and the Critical project operations are described below.

The Western C-11 Water Quality Improvement Critical Project consists of a water control structure and a pump station. Construction for this project was completed in March 2005.

The water control structure, the S-381, divides seepage collected from WCA 3A and 3B in the L-33, L-37 and US 27 borrow ditch with stormwater from the Western C-11 basin. The intent of the structure is to separate the very low nutrient seepage water from urban stormwater from a mostly residential and commercial basin.

The pump station, the S-9A, a 500 cfs pump station is made up of 2-175 cubic feet per second (CFS) pumps and 2-75 CFS pumps. The intent of the pump station is to reduce the amount of pumping at the S-9 pump station which is made up of 3-960 CFS pumps. The S-9 pump, being much large than the S-9 A pumps, not only return seepage collected in the canals but also pump

groundwater and over drain the basin. Pumping the smaller S-9A pumps rather than the larger S-9 pumps and having the S-381 structure in place, allows seepage to be collected and returned without lowering the C-11 canal levels and over draining the basin.

The S-381 structure is operated in conjunction with the C-11 Impoundment (the C-11 Impoundment operations are described below). During storm operations the S-381 will be closed to divert stormwater from the C-11 western basin to the C-11 impoundment inflow pump. If the C-11 and C-9 impoundments are at capacity and storm conditions continue to contribute stormwater to the C-11 west canal, the S-381 will be opened to allow the C-11 west canal to be controlled by pumping the S-9 pump station to maintain the current level of flood protection.

The WCA 3A/3B SMA CERP component's purpose is to reduce the rate and quantity of seepage from WCAs 3A and 3B and to keep high quality water within WCA 3A, improving its hydropattern and increasing the spatial extent of short hydroperiod wetlands along the perimeter of the Everglades Protection Area (EPA). The component is a half-mile wide wetland strip about 13 miles long located between Levees L-33, L-37 and U.S. Highway 27. The water levels within the wetland strip will be held at higher elevations to reduce water level differences across, and thus groundwater seepage across the L-33 and L-37 Levees.

The operational intent is to reduce the rate of seepage losses from Water Conservation Areas (WCA) 3A and 3B by holding water levels higher immediately east of the WCA Levees within the SMA strip. The water levels within the SMA wetland strip will be managed to match wetland hydroperiod targets, higher levels during the wet season and lower during the dry season. Higher water levels will be attained through construction of a berm just west of the US Highway 27 drainage ditch. This berm will eliminate stormwater from draining from the wetland strip to the US27 ditch. The berm will hold rainfall and seepage water from WCA 3 in the strip, the SMA, from the North New River canal south to the Boy Scout camp approximately 2 miles south of the C-9 Canal.

This component reduces approximately 70,000 acre-feet per year of seepage from WCA 3A and 3B through the L-37 and L-33 Levees based on output from the Broward County Modflow model used during the WPA Feasibility Study. The S-9A pump (described in the Western C-11 Water Quality Improvement Critical Project above) will return 74,100 acre-feet per year of seepage from WCA 3A and 3B.

Storm conditions operations: No stormwater is directed to this area, it stores rainfall and seepage. Thus no storm operations occur.

The L-33 and L-37 Borrow Canals will eventually (under a Restudy component to be constructed later) be enlarged to deliver excess water from WCA 2B, 3A and 3B to the Everglades National Park. As part of another future Yellow Book component, Decentralization, the eventual removal of the L-68A Levee will cause higher water levels against the L-37 Levee thus causing more seepage from the WCAs.

The water control structures described in the engineering appendix will control water elevations the SMA. Control levels within the strip may be adjusted based on detailed design modeling and

operational considerations. Operations of water control structures within this component will be to hold water levels in the SMA at a higher or desirable wetland habitat. Any discharges from this component to the SFWMD canals will occur off-peak, (not during storm conditions) to ensure that this project will not impact the level of flood protection that is currently enjoyed. Flood protection of Trailer Park within the SMA will be maintained at current levels as will all development within the projects basin.

Changes to operation levels will occur as additional Yellow Book components are implemented. These future CERP components include Central Lake Belt (CLB) Storage Area, ENP Seepage Management, Flows from WCA 2B to CLB, Flows from WCA 3A & 3B to CLB, North New River Improvements and Deliveries, and WPA Conveyance.

The Western C-11 Diversion Impoundment and Canal CERP component's purpose is to divert stormwater generated in the C-11 Western Basin from being pumped to WCA 3A in order to reduce nutrient loads to the Everglades Protection Area. This component will be operated differently prior to construction of future CERP component - North Lake Belt Storage Area (NLBSA). Since NLBSA will not be fully implemented until 2036, the following operations for the C-11 Impoundment are intended for the foreseeable future.

The operational intent of this component is to divert untreated stormwater from the Western C-11 basin currently pumped into WCA 3A to the C-11 Impoundment.

Storm conditions operations: Diversion of C-11 West basin stormwater occurs through the use of the impoundment's inflow pump station S-503 located at the southeast corner of the impoundment, east of the stormwater/seepage water divide structure, S-381, located south of the impoundment in the C-11 West Canal. As the C-11 Impoundment fills, water is directed out of the impoundment west of the S-381 and then south into an improved US Highway 27 drainage ditch, the C-502B canal, and then pumped into the C-9 Impoundment. Once the C-9 impoundment is at capacity and the C-11 impoundment is at capacity and no capacity exists to discharge stormwater east through existing SFWMD canals system (the C-11 East canal and the C-9 canal), then any additional stormwater from the western C-11 impoundment is pumped through the S-9 pump station to WCA 3A.

The S-9 pump station will continue to be available to ensure the current level of flood protection is maintained though the intent of the project is to minimize the amount of stormwater pumped from the S-9 pump station to the Everglades protection Area. The Broward WPA project will reduce stormwater from 70,800 acre-feet per year to 22,300 acre- feet per year. The reduction, approximately 60 % is conservative since the model assumption was that no stormwater from the C-11 Western Basin was discharge east through the S-13A structure to the C-11 East Basin due to model limitations. In reality, it is operationally desirable to regain impoundment storage capacity by releasing stored water from the impoundment to the east during no rainfall periods, off-peak times with no rainfall forecasted.

During post storm periods, when there is water is in the C-11 Impoundment and the C-11 East Canal (east of S-13A) has returned to its control elevation and no storms are forecast for several

days then bleed down of the impoundment will occur through the S-13A structure and the S-13 structure within the C-11 East basin to make storage available in the impoundment.

When the C-11 impoundment has water in the impoundment, the seepage collection system, made up of perimeter canals, water control structures and pumps, is operated to maintain current groundwater levels. The collection system captures groundwater seepage from the impoundment by intercepting it in the perimeter canals and pumping the seepage back into the impoundment thus maintaining groundwater levels around the outsides of the impoundment. The seepage collection pumps are operated to maintain an elevation in the collection ditch low enough to ensure groundwater water stages down gradient will not be increased. This is to maintain the current level of flood protection.

During dry periods, minimum flows, if the Eastern C-11 Canal has demands due to the new S-381 structure limiting seepage water east, releases will be made from the C-11 impoundment to the east when water is available.

Emergency operations: If water levels within the reservoir exceed 4 feet, excess water will be discharged back to the C-11 Canal west of S-381 via the Emergency Outflow Structure. This excess water will be pumped through the S-9 pump station. All Levees and structures are designed to meet current criteria.

In 2036 North Lake Belt Storage Area (NLBSA) will be implemented. Untreated runoff from the Western C-11 basin will be diverted to NLBSA rather than into WCA 3A. Stormwater stored in NLBSA will be used to recharge coastal canals and make deliveries to Biscayne Bay to meet salinity targets. Treatment for the deliveries will be provided if necessary.

The C-9 Impoundment CERP component's purpose is to divert stormwater generated in the C-11 Western Basin from being pumped to WCA 3A in order to reduce nutrient loads to the Everglades Protection Area.

This component will be operated differently prior to construction of future CERP component - North Lake Belt Storage Area (NLBSA). Since NLBSA will not be fully implemented until 2036, the following operations for the C-11 Impoundment are intended for the foreseeable future. After NLBSA is implemented the C-9 impound will be used for treatment of water sent to the coastal canals for water supply and environmental deliveries.

The operational intent of this component is to receive stormwater delivered from the Western C-11 Impoundment that was diverted from the western C-11 basin (see C-11 Impoundment operations described above).

Storm conditions operations: Diversion of C-11 West basin stormwater occurs through the use of the C-11 impoundment's inflow pump station S-503 located at the southeast corner of the impoundment. When capacity is available in the C-9 Impoundment, water from the C-11 Impoundment is directed out of the impoundment west of the S-381 and then south into an improved US Highway 27 drainage ditch, the C-502B canal, and then pumped into the C-9 Impoundment. Once the C-9 impoundment is at capacity and the C-11 impoundment is at

capacity and no capacity exists to discharge stormwater east through existing SFWMD canals system (the C-11 East canal and the C-9 canal), then any additional stormwater from the western C-11 impoundment is pumped through the S-9 pump stations to WCA 3A.

During post storm periods: If there is water in the C-9 Impoundment and the C-9 Canal has returned to its control elevation at the coastal structure, S-29, and no storms are forecasted for several days, then water from the impoundment will be released to regain storage capacity.

When the C-9 Impoundment has water in the impoundment, the seepage collection system, made up of perimeter canals, water control structures and pumps, is operated to maintain current groundwater levels. The collection system captures groundwater seepage from the impoundment by intercepting it in the perimeter canals and pumping the seepage back into the impoundment thus maintaining groundwater levels around the outsides of the impoundment. The seepage collection pumps are operated to maintain an elevation in the collection ditch low enough to ensure groundwater water stages down gradient will not be increased. This is to maintain the current level of flood protection.

During dry periods, minimum flows, if the S-29 coastal structure is below the design dry season level and water is available in the impoundment then water will be released to the C-9 Canal to maintain the design water level. This rarely occurs due to evaporation and seepage losses from the impoundment.

Emergency operations: If water levels within the reservoir exceed 4 feet, excess water will be discharged back to the C-9 Canal via the Emergency Outflow Structure. All Levees and structures are designed to meet current criteria.

Discussion/Action Required: The response does an excellent job of describing the operations and should be included in the PIR. The figures should be included and show the features identified in the recommended plan.

Action Taken: This information is provided in Section 8.4 of the PIR.

HQUSACE Assessment: This issue is **RESOLVED**.

4v. Comment: Water Made Available for the Natural System. Section 3.3.3 states, “*the project makes additional water available in WCA 3B and Everglades National Park.*” It also says, “*This additional beneficial water ... will be reserved for the natural system in accordance with WRDA 2000.*” Guidance Memorandum #1, page 1-3, requires each PIR to identify the appropriate quantity, timing and distribution of water dedicated and managed for the natural system. It also requires each PIR to identify the amount of water to be reserved or allocated for the natural system under state law necessary to implement the provisions of Sections 601(h)(4)(A)(iv) and (vii) of WRDA 2000. The PIR needs to document the quantity, timing and distribution of water dedicated and managed for the natural system, and specify the amount to be reserved or allocated. The report also needs to explain how the State is going to reserve and transfer waters for the natural system. This information is important for the Corps, other agencies and affected

parties, and the general public to assure that interests are protected and project benefits will occur. The report should explain how and in what manner assurances and savings will be made, as well as the actions to be undertaken to make changes over time. If this information is presented in the appendices or annexes, summary information on the quantities, timing and distribution should be presented in Section 3.3.3.

CESAJ Response: Section VI.B of the Draft Project-Specific Assurances and Savings Clause Requirements report contains detailed information describing the quantity, timing, and distribution of water made available by the BCWPA project for the natural system. Summary level information is presented in the Executive Summary and in the description of the Selected Plan in the main volume of the report. The BCWPA project will result in additional water made available for the natural system in WCA 3B and Everglades National Park, which will be reserved or allocated by the State of Florida. The median (water year) value of water made available in WCA 3B is approximately 2,000 ac. ft. (see Section VI.B.1.5). The median value of water made available in Everglades National Park is approximately 15,000 ac. ft. (see Section VI.B.1.6). This quantitative information has now been added to the summaries of assurances evaluations contained in the main volume of the report.

The President and Governor's agreement that was executed 9 January 2002 pursuant to Section 601(h)(2)(A) of WRDA 2000 ensures that the State of Florida will not permit water for consumptive use or otherwise make water unavailable that is necessary to achieve the benefits of CERP. This agreement is the fundamental backstop that ensures that water necessary to the natural system objectives of individual projects will continue to be available. Under Florida law, one of the statutory requirements for a reservation is that the water to be reserved must be for "the protection of fish and wildlife". Reservation or allocation of water must be completed prior to execution of the Project Cooperation Agreement (per section 601(h)(4)(B)(ii) of WRDA 2000). This information has now been added to the summary of assurances evaluations contained in the main volume of the report.

Section I.D of the Project-Specific Assurances and Savings Clause Requirements report 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.

Discussion/Action Required: This issue will be resolved with the addition of the summary quantitative information cited in the response.

Action Taken: This information is summarized in Section 8.5 of the PIR.

HQUSACE Assessment: This issue is **RESOLVED**.

4w. Comment: Water Made Available for Other Water Related Needs. Section 3.3.4 states, "*the BCWPA project either will result in a slight improvement or has no effect on the quantity of water available for the other water-related needs ...*." Guidance Memorandum #1, page 1-3, requires each PIR to identify the quantity, timing and distribution of water made available for

other water-related needs in the region. To comply, Section 3.3.4 should state the effects on the timing and distribution of water to be made available for other water-related needs in the region in addition to the existing statement about the quantity of water.

CESAJ Response: Section VI.C of the Draft Project-Specific Assurances and Savings Clause Requirements report contains detailed information describing the evaluation of the quantity and distribution of water made available by the BCWPA project for the other water-related needs of the South Florida region. It should be noted that the results of this evaluation indicate that the BCWPA project has almost no net effect on the quantity of water available for water supply and aquifer protection as indicated by met and unmet demands, water restriction events and aquifer protection criteria. Since there is no significant increase in the quantity or change in the distribution of water made available for other water-related needs, timing of those effects is not significant, either.

Discussion/Action Required: Include a summary of this information in the main report.

Action Taken: This information is summarized in Section 8.5 of the PIR.

HQUSACE Assessment: This issue is **RESOLVED**.

4x. Comment: User Categories. Section IV.A on page C-39 states that making a comparable quantity of any water available for each of the user categories is a basic principle for both the Savings Clause and assurances evaluations. Section 3.3.4 should display the amount of additional water that would be provided to each user category and note any water quality changes.

CESAJ Response: This comment intermingles the concepts of the Savings Clause (i.e., don't reduce what the WRDA 2000-listed user categories had in 2000) and the other water-related needs analysis (show how much more water for water supply and aquifer protection is made available, if any). The Savings Clause requires an evaluation of project effects on the WRDA 2000-listed user categories. Section 385.35(b)(3) of the CERP Programmatic Regulations requires the development of a Guidance Memorandum (GM 4) including procedures for identifying the quantity, timing, and distribution of water made available for other water-related needs of the region, and does not require that the identification should be linked to the WRDA 2000-listed user categories. The other water-related needs work that was performed and documented in the Project-Specific Assurances and Savings Clause Requirements report and summarize elsewhere in the BCWPA PIR is consistent with the procedures contained in GM 4. It should be noted that the results of the other water-related need evaluation indicate that the BCWPA project has almost no net effect on the quantity of water available for water supply and aquifer protection as indicated by met and unmet demands, water restriction events, aquifer protection criteria.

Discussion/Action Required: As described in the above response.

Action Taken: See response.

HQUSACE Assessment: This issue is **RESOLVED**.

4y. Comment: Criteria for Meeting Savings and Assurances Requirements. Tables C-4 and C-5 show instances where demands would not be met. Figures C-25 and C-26 show negative numbers for available water under dry conditions. Based on these results, it is not obvious how the plan would fulfill the assurances and savings requirements; especially if the act language is interpreted as absolute (i.e., “almost” is not good enough). The PIR should disclose the criteria applied in determining whether the various legal requirements are being met.

CESAJ Response: The comment refers to Tables C-4 and C-5. Table C-4 on page C-34 is a summary of time windows considered as part of the modeling approach. Therefore, the response is based on the information contained in Tables C-5 and C-6.

The project assurances evaluations (water made available for the natural system and water made available for other water-related needs) completed for this project and consistent with GM 4 involve a comparison of existing without-project (2005) conditions to existing with-project (2005) conditions. The Savings Clause evaluations involve a comparison of Pre-CERP Baseline (2000) conditions to existing with-project (2005) conditions. Therefore, it is improper to draw Savings Clause conclusions from the Project Assurances comparisons because the two evaluations are based on different modeled baselines.

The criteria for the Savings Clause evaluations are contained in Section VI.D and include many performance measures. The performance measures evaluated may vary from project to project.

Figures C-25 and C-26 do show negative values in WCA 2B during portions of the dry season, but the negative volumes of water shown are likely the result of averaging the results for all of WCA 2B combined with the effect of operational rules that were modeled to “deliver” water to meet restoration targets in downstream areas (e.g., WCAs 3A and ENP). Furthermore, water levels in WCA 2B are almost always over target stages, and the modeling results shown illustrate the effects of trying to move water through a compartmentalized system with a hydrologic simulation model. 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 WCA-2B, 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).

Discussion: The comment did indeed cite the wrong tables. Even though different models were used for the different purposes, it is unsettling that the results are not consistent.

Action Required: None.

Action Taken: The information provided in the draft PIR is also provided in the final PIR. As stated in the report once the GM's are finalized the Savings and Assurances will be updated.

HQUSACE Assessment: This issue is **RESOLVED** by CESAJ Response.

4z. Comment: Clean Water Act Section 404(b)(1) Evaluation (Annex C). The 404(b)(1) Guidelines (40 CFR 230) establish restrictions on discharges into waters of the U.S. Under the Guidelines (Section 230.10) no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse impacts. The district finds (page C-16) that all practicable alternatives that meet study objectives involve a discharge of fill material into waters of the U.S. The district has not determined whether other practicable alternatives have greater or lesser adverse impacts. The district's finding of compliance with the Guidelines restrictions needs to state why the recommended alternative would result in the least amount of significant impacts (ER 1105-2-100, page C-48).

CESAJ Response: The following was added to the 404(b)(1) Evaluation:
Alternatives F2 and F4 would have less direct impact on wetlands than the recommended plan (Alt. A4) because they do not include the C-9 Impoundment. However, the environmental benefits to WCA 3 are considerably less (Alt. F2-195,357 average annual habitat units (AAHUs); Alt. F4-189,353 AAHUs) when compared to Alternative A4 (543,781 AAHUs). Alternative A3 would directly impact more wetlands within the C-9 and C-11 Impoundments than Alternative A4 for only a slight gain in AAHUs (17,260) when compared to Alternative A4. Overall the recommended plan (Alt. A4) would have the least significant impact on wetlands than Alternatives F2, F4 and A3.

Discussion/Action Required: Inclusion of the above will resolve the concern.

Action Taken: The above information has been included and is in Annex C of the PIR.

HQUSACE Assessment: Inclusion of the information above in the PIR and Annex C **RESOLVED** this issue.

4aa. Comment: Environmental Justice (EJ). Page F-2 of Appendix F states that the BCWPA team is seeking to identify potential EJ issues and affected populations during the scoping process. However, the EJ discussion in Appendix H (pages H-72 to -73) indicates that an evaluation has already been completed and the district has found that the project will not have any high, adverse and disproportionate impacts on low income, minority or tribal populations. Appendix F should be updated to reflect the findings in Appendix H.

CESAJ Response: The EJ write up that was in Appendix F is now in Section 9.3 and has been revised to be consistent with Section 7.9 and Appendix C (formerly Appendix H).

Discussion/Action Required: Inclusion of the above change will resolve the concern.

Action Taken: Section 9.3 of the PIR has been updated to reflect the required information.

HQUSACE Assessment: This issue is **RESOLVED**.

4bb. Comment: Legal Review. The identification of any legal issues and the status of legal review certification were not provided as required by Exhibit G-5, ER 1105-2-100. Paragraph H-4c, ER 1105-2-100, requires legal review of draft reports. Except for "Annex G", which we can not identify, no evidence of any legal review was provided. Information on legal issues and the status of legal review is needed to confirm that appropriate QA/QC has been or will be completed. This should have been completed prior to public review of the draft report.

CESAJ Response: Certification of legal review was provided on April 3, 2006 for Appendix G (Legislative and Statutory Requirements) in the final PIR as follows:

CERTIFICATION OF LEGAL REVIEW:

Annex G entitled "Legislative and Statutory Requirements" of the Central and Southern Florida Project Broward County Water Preserve Areas Draft Integrated Project Implementation Report/Environmental Impact Statement dated November 2005 (released for public and agency review and comment in March 2006) including all associated documents required by the National Environmental Policy Act, has been fully reviewed by the Office of Counsel, USAED, Jacksonville District, and is legally sufficient.

Date: April 3, 2006

By: Boeth C. Lewis
Assistant District Counsel

Discussion: The requirement for legal review encompasses more than Annex G, it should include the entire report. Paragraph H-4c requires legal review to be completed by the District before the draft report is submitted for policy compliance review.

Action Required: Future draft PIR submittals must indicate that legal review has been completed.

Action Taken: The final PIR submittal includes the certification of legal review.

HQUSACE Assessment: This issue is **RESOLVED**.

4cc. Comment: ITR Documentation. Paragraph H-4c, ER 1105-2-100, requires ITR of draft reports. Exhibit G-5, ER 1105-2-100, requires the submittal of the ITR documentation completed to date. The only ITR documentation provided was on the August 2005 version of the report and a more recent version of Annex C. No information was provided regarding the ITR of

the current version of the report. Information on ITR is needed to confirm that appropriate QA/QC has been or will be completed. This should have been completed prior to public review of the draft report. Also, exactly how did the ITR team confirm that actions were actually taken or implemented in the PIR to resolve their concerns? We note that the comments herein address some of the same concerns that were raised by the ITR team and were supposedly corrected.

CESAJ Response: ITR was not conducted on the November 2005 version of the draft PIR because only the Executive Summary and Savings Clause information (provided in Annex C) were modified since the ITR review of the August 2005 draft PIR. The project team provided responses to the ITR comments and made the necessary changes in the PIR, which **RESOLVE** all ITR comments. Both an internal and external ITR are planned on the final PIR, which will be conducted in May 2006. The ITR documentation from these reviews will be provided with the final PIR.

Discussion/Action Required: Include ITR documentation from the reviews with the final PIR.

Action Taken: Final ITR documentation has been provided with PIR.

HQUSACE Assessment: This issue is **RESOLVED**.

4dd. Comment: Hydraulics and Hydrology ITR. The Hydraulics and Hydrology analyses are a significant part of this project. Documentation of the H&H ITR needs to be provided for review. Given the nature of the C-9 and C-11 impoundments, the proposed design should also be reviewed for dam safety. If the district has determined a dam safety evaluation is not needed they must include a citation of the statute or regulation that exempts these structures from such a review

CESAJ Response: The South Florida Water Management District (SFWMD), Florida Department of Environmental Regulation (FDEP), US Army Corps of Engineers (USACE), and Federal Emergency Management Agency (FEMA) have design standards for dams. SFWMD recognized that current design criteria were too wide open for consistent interpretation. FDEP, SFWMD, and USACE participated in a Dam Safety Workshop in December 2004. In 2005, the following Design Criteria Memorandums (DCMs) were drafted, with many being finalized:

- DCM 1 – Hazard Potential Classification
- DCM 2 – Freeboard Determination
- DCM 3 – Spillway and Drawdown Requirements
- DCM 4 – Minimum Embankment Dimensions
- DCM 5 – Major Pump Station Engineering Guidelines
- DCM 6 – Seismicity and Liquefaction
- DCM 7 – Opinion of Probable Construction Costs
- DCM 8 – Vulnerability Requirements
- DCM 9 – Embankment Instrumentation
- DCM 10 – Construction QA Procedures
- DCM 11 – Post Construction/Inspection/Dam Safety Program

DCM 12 – Value Engineering

These DCMs were to be the basis for Acceler8 and future CERP projects; were to provide building blocks to USACE for Federal guidance development; and were to assist FDEP to prepare dam safety legislation and develop a dam safety program for facilities outside the mining industry.

The design of the embankment for the Broward County WPA Project should be based on the above DCMs. Until DCM 11 is complete, USACE Engineering Circular 1110-2-6061, SAFETY OF DAMS – POLICY AND PROCEDURES, dated 30 April 2004 will be used as interim policy and guidance. This circular prescribes the policy, organization, responsibilities, and procedures for implementation of dam safety program activities within the Corps of Engineers to ensure continued safety, structural integrity, and operational adequacy of dams.

A Hazard Classification Report in accordance with DCM 1 will determine the downstream hazard potential and should also provide the justification for applying dam safety criteria, or justification why it would be exempt.

Discussion: The explanation resolves the concern.

Action Required: The results of the Hazard Classification determination needs to be included in the main report so it is clear the engineering design is consistent with the determination.

Action Taken: Section 8.3.1 of the PIR outlines the process undertaken to evaluate and design the impoundments.

HQUSACE Assessment: This issue is **RESOLVED**.

4ee. Comment: CX Certification of H&H Models. Certification needs to be provided by the appropriate centers of expertise for the models used to complete the H&H analyses.

CESAJ Response: Although the requirement for certification of models by the appropriated Planning Center of Expertise (PCX; in this case, CEMVD) used for H&H analysis in support of plan formulation was established by EC 1105-2-407 on 31 May 2005, as yet, the procedures (including staffing and funding resources) for performing model certification have yet to be finalized. CESAD has a task team working with MVD to set up the procedures for certifying planning models used in CERP projects. It should also be noted that the EC requiring model certification went into effect after the AFB for the BCWPA project. Paragraph 14e of the EC states in part:

“Recognizing that it will take time to develop the too box of certified models for field use, the requirement to use only certified models shall be effective upon certification of particular models, or no later than 18 months from the approval of the programmatic PMP, whichever comes first. In the meantime, proponents will continue to use available models that must be reviewed through the ITR process.”

It should be noted that 18 months has not yet passed since the EC was issued. CESAJ requests that CECW advise as to the status of the programmatic PMP to be developed by CECW-CP (see EC 1105-2-407, paragraph 14a). It should be further noted that modeling assumptions, performance measures, and outputs have been subjected to ITR for the BCWPA project.

Irrespective of the certification requirement, the South Florida Water Management Model, the principal hydrologic model used for plan formulation and evaluation of CERP projects has been well-documented and peer reviewed, and is generally accepted as the best modeling tool for evaluating system wide effects within the South Florida ecosystem. See response to comment 4i.

Discussion/Action Required: Response resolves concern.

Action Taken: See response.

HQUSACE Assessment: This concern is **RESOLVED**.

4ff. Comment: Engineering Design Agreement. Section A.2.2 refers to a forthcoming agreement concerning the engineering design parameters for reservoir design with regard to dam safety. Describe the status of this agreement. Also describe the potential impacts of this agreement on the regulatory considerations, design schedule, and cost associated with the C-9 and C-11 impoundments.

CESAJ Response: The design of the embankment for the Broward County WPA Project should be based on the DCMs referenced above in comment dd. Until DCM 11 is complete, USACE Engineering Circular 1110-2-6061, SAFETY OF DAMS – POLICY AND PROCEDURES, dated 30 April 2004 will be used as interim policy and guidance. This circular prescribes the policy, organization, responsibilities, and procedures for implementation of dam safety program activities within the Corps of Engineers to ensure continued safety, structural integrity, and operational adequacy of dams.

A Hazard Classification Report in accordance with DCM 1 will determine the downstream hazard potential and should also provide the justification for applying dam safety criteria, or justification why it would be exempt.

Discussion: Response resolves concern.

Action Required: Summarize the process used to evaluate and design the impoundments in the PIR.

Action Taken: Section 8.3.1 of the PIR outlines the process undertaken to evaluate and design the impoundments.

HQUSACE Assessment: This concern is **RESOLVED**.

4gg. Comment: 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 draft PIR is silent about VE activities, although presumably the necessary actions have been completed since this project is not eligible for a waiver under Section 911. What were the results of completed VE workshops or studies and what is the status of any ongoing or planned VE efforts for this project?

CESAJ Response: A formal Value Engineering study was conducted during plan formulation phase and is identified as Value Engineering Study CESAJ-05-07C dated August 2005. The VE study was conducted as part of the graduate level studies course by three District Engineering Division and Planning Division staff members through the University of Florida. The report has been process through the PIR PDT and will be further evaluated during DDR / Acceler8 P&S phase.

The VE study recommended five alternatives with 4 of the 5 recommended for future evaluation during the DDR phase. Study items included impoundment levees and structures and recognized potential savings of \$12.9 million. These VE ideas are being carried forward to the DDR phase as additional information is needed including Geotechnical information and supporting modeling for seepage. One idea was rejected to reduce interior embankment sloped to 1V:2H, as this grade impacts access for mowing and recreational uses.

VALUE ENGINEERING CERTIFICATION STATEMENT

CESAJ-DP-O

[Date]

SUBJECT: [_____]

I [_____] certify that this procurement action has completed the Value Management/Value Engineering process. A VM/VE study was completed on [Date]. All VM/VE proposals indicating potential savings over \$1,000,000 have been resolved with approval of the MSC/EC Commander.

SUBMITTED BY:

Project Manager

Discussion/Action Required: Response resolves concern.

Action Taken: See response.

HQUSACE Assessment: This concern is **RESOLVED**.

4hh. Comment: VE Study of Inlet & Outlet Works. The inlet and outlet works specified for impoundments C-9 and C-11 add significant cost to the project. Given the complex nature of the proposed system and their associated costs, a value engineering study of these elements should be considered.

CESAJ Response: The VE study of the inlet and outlet works was done in compliance with The Office of Federal Procurement Policy Act (see response to comment gg above).

Discussion/Action Required: Response resolves concern.

Action Taken: See response.

HQUSACE Assessment: This concern is **RESOLVED**.

REAL ESTATE

4ii. Comment: [Land Acquisition Requirements] The Abstract section shows that the C-11 Impoundment area is 1490 acres; C-9 Impoundment area is 1650 acres; and the Seepage Management Area is 4312 acres. The Executive Summary provides conflicting information. The acreage shown on Page v of the Executive Summary differs from the totals on Pages ix-xi. Also, Section 1 and Section 3 provide different totals. The acreage totals provided for the C-11 and C-9 Impoundment areas in the Real Estate Plan (REP) match the acreage totals in Section 3. The SMA acreage total in the REP is different than the total shown in other parts of the report. The District should present consistent acreage information in all sections of the Draft Report and the Real Estate Appendix.

CESAJ Response: Concur. The acreage for each component will be reviewed for consistency throughout main report and appendices.

Discussion/Action Required: The response resolves the concern. The acreage for each component will be reviewed for consistency throughout main report and appendices.

Action Taken: The acreages have been made consistent throughout the PIR.

HQUSACE Assessment: **RESOLVED**

4jj. Comment: [City of Weston road right-of-way] Section 1.1.5.1.2 mentions that the City of Weston needs to grant a request to SFWMD to vacate a road right-of-way. This is needed prior to construction of the C-11 Impoundment area. A meeting to discuss this issue and others related

to existing utilities and public infrastructure was scheduled for 10 January 2006. Did the meeting take place? Text should be updated to reflect resolved or ongoing discussion on these issues.

CESAJ Response: The SFWMD has and will continue to meet with the City of Weston and other entities on this issue and all aspects of the project to ensure that all necessary right-of ways are in place prior to construction.

Discussion/Action Required: The response resolves concern. Include the latest information in the PIR.

Action Taken: The latest information is reflected in the PIR.

HQUSACE Assessment: RESOLVED

4kk. Comment: [North New River Canal Improvements] E.5.4.2 details discussion on enlarging the canal conveyance as a part of the selected plan, but there is not a similar section in Section 3 (The Selected Plan) of the main report. The REP states that no real estate is required for this feature. Likewise there is no discussion of the North New River Canal improvements in the main report. REP should be consistent with main report. It is unclear if enlarging the canal conveyance a part of the selected plan.

CESAJ Response: Concur. The North New River component was deleted from Appendix F.

Discussion/Action Required: The proposed text change will resolve the concern.

Action Taken: The Real Estate Plan is consistent with the PIR

HQUSACE Assessment: RESOLVED

4ll. Comment: ITR Comment 17. The comment notes that the NNR improvement is not mentioned on Page 3-16. Although the page was probably modified in the Draft, there is still no discussion in Section 3.

CESAJ Response: Concur. The North New River component was deleted from Appendix F.

Discussion/Action Required: The Real Estate Plan needs to be consistent with the final PIR.

Action Taken: The Real Estate Plan is now consistent with the PIR.

HQUSACE Assessment: RESOLVED

4mm. Comment: ITR Comment 23. There is no discussion of the NNR Improvement in the Executive Summary, so ITR Comment 23 of the ITR is still not resolved.

CESAJ Response: Concur. The North New River component was deleted from Appendix F.

Discussion/Action Required: The Real Estate Plan needs to be consistent with the final PIR.

Action Taken: The Real Estate Plan is now consistent with the PIR.

HQUSACE Assessment: RESOLVED

4nn. Comment: [Florida Power and Light Company Estate] E.7.3 notes that approximately 1,100 acres of the total for the SMA is owned by Florida Power and Light Company. It is proposed that a perpetual flowage easement could be obtained versus fee title. E.8 states that it is assumed that fee title is required for all land in the three components. Which interest will be proposed for the FPL land?

CESAJ Response: A Non-standard perpetual Flowage easement (permanent flooding) will be acquired from FP&L (see response to Comment oo. below).

Discussion/Action Required: See comment/response for Comment oo.

Action Taken: Information has been provided in Section D.8.2 of Appendix D.

HQUSACE Assessment: RESOLVED by Action Taken

4oo. Comment: [Flowage Easement estate] E.8.2 provides the language for the Flowage Easement (permanent flooding) estate. Several sentences are left off the standard estate language and should be included (see EC 405-1-11, Exhibit 5-29).

CESAJ Response: A Non-standard perpetual Flowage easement (permanent flooding) will be acquired from FP&L. The estate has been modified as follows:

F.8.2 NON STANDARD ESTATE FLOWAGE EASEMENT (PERMANENT FLOODING) Florida Power & Light Company lands

The perpetual right, power, privilege and easement permanently to overflow, flood and submerge (the land described in Schedule A) (Tract No. ___), (and to maintain mosquito control) in connection with the operation maintenance of the _____ project as authorized by the Act of Congress approved _____, and the continuing right to clear and remove any brush, debris and natural obstructions which, in the opinion of the representative of the non-Federal sponsor in charge of the project, may be detrimental to the project, together with all right, title and interest in and to the timber, structures and improvements situate on the land (excepting electrical transmission lines and towers, (here identify those structures not designed

for human habitation which the representative of the Non-Federal project sponsor determines may remain on the land)); provided that no structures for human habitation shall be constructed or maintained on the land, that no other structures shall be constructed or maintained (excepting electrical transmission lines and towers) on the land except as writing by the representative of the Non-Federal project sponsor in charge of the project, and that no excavation shall be conducted and no landfill placed on the land without such approval as to the location and method of excavation and/or placement of landfill; the above estate is taken subject to existing easements for public roads and highways, other public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easement hereby acquired; provided further that any use of the land shall be subject to Federal and State laws with respect to pollution.

Discussion: Need more background information to ensure the non-standard estate is required and it will meet project needs. SAJ should name the NFS in the estate and list any structure types that could remain on the land. The additional information is needed before the non-standard estate can be approved..

Action Required: Provide additional information on non-standard estate to SAD/HQ for approval.

Action Taken: Information has been provided in Section D.8.2 of Appendix D.

HQUSACE Assessment: RESOLVED by Action Taken

Baseline Cost Estimate.

4pp. Comment: [Additional C-11 Acquisitions] Table E-1 shows that SFWMD has to acquire an additional 112.63 acres more for C-11 impoundment. Text in E.5.1.2 shows 149.47 acres as remaining. Determine which is correct and use it consistently throughout the report.

CESAJ Response: Concur. The tables and text will be modified to be consistent.

Discussion/Action Required: The proposed SAJ action will **RESOLVE** the concern.

Action Taken: All acreages are made consistent in the PIR.

HQUSACE Assessment: RESOLVED by Action Taken

4qq. Comment: [Inconsistent information.] Table E-3 shows that SFWMD acquired 1803.49 acres for the C-9 impoundment. Text in E.5.3.2 shows that SFWMD acquired all 1792 acres. Determine which is correct and use it consistently throughout the report.

CESAJ Response: Concur. The tables and text will be modified to be consistent.

Discussion/Action Required: The proposed SAJ action will resolve the concern.

Action Taken: All acreages are made consistent in the PIR.

HQUSACE Assessment: RESOLVED.

5. Previous Comments that are Resolved (resolved by actions taken in the DPIR/DEIS). No additional responses or discussion are necessary unless the RIT, MSC or District has questions or concerns.

5a. Comment: Combining Authorized Projects (17Nov05 PGM #Ib). Resolution of this issue [authority to build four individual projects vs. seeking authority to build one super project that combined the four] was directed during the AFB, and reiterated in the 1 June 2005 PGM. The district to date has failed to obtain a legal determination that the Corps has authority to combine the authorized projects into a single project as components. Resolution of these issues has direct and significant bearing on formulation, cost sharing and e projects as separate but interrelated projects in a single report. The District has not provided CECW a determination of authority to combine the projects or a report dealing with the projects as separate but interrelated projects. Going to Congress for authorization may/would hold up the implementation of acceptable components while deciding whether to authorize the new Super Plan.

HQUSACE Assessment: This comment is **RESOLVED**. The recommendation in Section 4 is clear that additional authority is required. The recommendation is to seek new authorization for the larger project consisting of previously authorized projects that have been determined to be interdependent. This interdependence is supported throughout the report.

5b. Comment: Final Array Composition (17Nov05 PGM #If). The discussion through page 2-80 uses Alternatives F2, F4, A3 and A4 in the final array. Section 2.3.4 changes the final array to Alternatives F1, F4, and A4 with no explanation regarding why Alternatives F2 and A3 were dropped from the final array and Alternative F1 was added. This tends to negate the previous 82 page explanation of the plan formulation, evaluation and selection. Explain this change.

HQUSACE Assessment: Section 2.3.4 and the remainder of Section 2 were corrected to show Alternatives F2, F4, A3 and A4 in the final array. This concern is **RESOLVED**.

5c. Comment: Aquifer Storage and Recovery (ASR) Feature (AFB PGM #7a) (17Nov05 PGM #I). Was ASR included in the outputs and costs for the alternative plans evaluated? They should not be included since ASR is not being recommended at this time. The improvement in project performance with ASR and the rest of CERP is documented in the Last-Added Analysis. The AFB document does not indicate that Next- and Last-Added Analysis was performed. This needs to be discussed at the AFB.

CESAJ Response: ASR was not included in the analysis of the alternative plans except for the 2050 with project condition. ASR is a CERP component that is expected to be in place in 2050. This discussion was not clear in the AFB material presented and will be clarified in the PIR.

AFB Discussion: HQUSACE stated that the team should not assume that Aquifer Storage and Recovery (ASR) would ever be implemented except with the Last Added Incremental (LAI) analysis. CESAJ clarified that the 2050 condition is with the rest of CERP, assuming all other projects are implemented, so it is the last added increment. ASR is not included in the other runs.

In addition, ASR costs were not included in the cost estimates. Since the ASR is deep-well injection, there would be no impact on project benefits. The Next Added Incremental (NAI) analysis excludes ASR costs and benefits. Benefits are included, but costs are excluded, in the LAI analysis. It was noted that the LAI analysis includes all ASR for CERP, not just BCWPA ASR. The NAI and LAI analysis will be in the preliminary draft PIR.

Action Required: The preliminary draft PIR will include the NAI and LAI analyses of project benefits and clarify that ASR is not being considered for implementation as part of this project, but is part of CERP which is assumed to be in place in the LAI.

Action Taken: The reference to an ASR feature as part of the recommended plan was deleted.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5d. Comment: Concerns of Stakeholders. (17NOV05 PGM #Ii). The draft report/DEIS does not discuss the resolution of concerns raised by interested stakeholders and agencies that are summarized in Section 1.3.2. as required by 40 CFR 1502.12. Readers are referred to an appendix for more detail about these concerns but how the District incorporated those concerns or why they were not addressed is not described. Summarize in the EIS how the District incorporated relevant pro & con concerns of all stakeholders, or why the concerns were not addressed.

Action Taken: Section 1.3.2 has been revised

HQUSACE Assessment: The action taken has **RESOLVED** the concern.

5e. Comment: Cooperating Agencies. (17Nov05 PGM #Ik). The DPIP/DEIS does not meet the requirements of 40 CFR 1501.6 to invite key Federal agencies with jurisdictional authorities or special expertise to be formal NEPA Cooperating Agencies. Section 1.1.5 is titled "CERP Partnerships and Cooperating Agencies". The section describes CESAJ as the lead agency and the relationship of all other agencies is characterized as "participating agencies". As discussed during the AFB and in the PGM, the requirements to invite Cooperating Agencies as defined by 40 CFR 1508.5 are set forth in 40 CFR 1501.6. Further, the Abstract refers to participating agencies as Cooperating Agencies. The DPIP/DEIS must clearly state there are no Cooperating

Agencies as defined by 40 CFR 1508.5 and that no agency was requested to be a Cooperating Agency as required by 40 CFR 1501.6. The Abstract must be corrected to indicate the relationship of all other agencies as “participating agencies”.

Action Taken: Revised the Abstract with the statement “There are no Cooperating Agencies as defined in 40 CFR 1508.5 and no agency was requested to be a Cooperating Agency” satisfies the comment.

HQUSACE Assessment: The action taken satisfies the comment and this concern is **RESOLVED**.

5f. Comment: Project Cost Display (17Nov05 PGM #Ip). There are no cost displays for the selected plan. This does not allow the public or decisionmakers to determine the costs of the four projects in a reasonably quick manner. Tables should be added for each of the four projects based on the example below. A summary table for the overall selected plan should also be provided. While the format is not particularly important, each line item is needed (adjusted for the features of each project). The ASR costs, presuming that the feature is indeed part of the recommended plan, should be displayed either as a separate project or within the information for one or more of the four projects. The costs should be rounded to the nearest \$1,000 to avoid implying a level of accuracy that does not exist. Also, the price level should be displayed.

Table x-x _____ Project Summary of Costs for the Selected Plan (October 2005 Price Level)	
Lands and Damages	\$ _____,000
Relocations	\$ _____,000
Ecosystem Restoration Elements	
Levees	\$ _____,000
Pump Station	_____ ,000
Weirs	_____ ,000
Culverts	_____ ,000
Compensatory Mitigation	_____ ,000
Monitoring	_____ ,000
Adaptive Management	_____ ,000
Subtotal	\$ _____,000
Recreation Elements	
Parking	_____ ,000
Land Bridge	_____ ,000
Boardwalk	_____ ,000
Canoe Launch	_____ ,000
Kiosk/Toilets	_____ ,000
Subtotal	\$ _____,000
Preconstruction Engineering, and Design (E&D)	\$ _____,000
Construction Management (S&A)	\$ _____,000
Total First Cost	\$ _____,000
Interest During Construction	_____ ,000
Total Investment Cost	\$ _____,000
Average Annual Cost (6-3/8 percent)	\$ _____,000
OMRR&R Costs	\$ _____,000
Total Annual Cost	\$ _____,000

Action Required: The PIR must display the cost for the selected plan consistent with the example, with costs rounded to the nearest \$1,000 and the price level shown.

Action Taken: Table 3-4 now displays the cost for the selected plan consistent with the example. It does not include separate tables for each of the four projects as suggested. The costs are rounded to the nearest \$1,000 and the price level is shown.

HQUSACE Assessment: The action taken satisfies the comment; the concern is **RESOLVED**.

5g. Comment: HTRW Cost Displays (17Nov05 PGM #Iq). Section 3.6.5.1 on page 3-21 says there will be significant costs for the assessment and remediation of HTRW. HTRW costs should be included in Table 3-4 as additional non-Federal costs, and included in the final total amount for the non-Federal costs after cost sharing is applied. See the next comment.

Action Required: Include the above described information in the Section 3 of the PIR.

Action Taken: HTRW costs are now included in Table 3-4 as additional non-Federal costs, and included in the final total amount for the non-Federal costs after cost sharing is applied.

HQUSACE Assessment: The action taken satisfies the comment and the concern is **RESOLVED**.

5h. Comment: Cost Shares (17Nov05 PGM #Ir). The Table 3-5 display of cost shares is adequate. However, the phrase “carryover credit” is not explained. An explanation is needed due to the plethora of policy and legal concerns that can apply in credit situations.

Action Taken: The phrase “carryover credit” is explained

HQUSACE Assessment: The concern is **RESOLVED**.

5i. Comment: Plan Selection (17Nov05 PGM #Is). (a) Several discussions in the report appear to be in the wrong order and should be revised or moved. Section 2.3.1.5 at the top of page 2-75 indicates that a plan is not yet selected for recommendation. Section 2.3.1.6 does not select a plan. Yet, Section 2.3.17 on page appears to presume that a plan, apparently Alternative A4 has been selected. Then Section 2.3.2 talks if a plan has yet to be selected. Section 2.4.4 talks about the “*Selected Alternative Plan*” even though it is not yet selected. Section 2.4.5 on page 2-100 selects Alternative A4. (b) Since the analyses of the alternatives is scattered over a hundred pages, a summary display of the key numbers driving the selection should be presented either just preceding or within this section.

Action Taken: Section 2.3.1.7 was removed and Table 2-28 was added.

HQUSACE Assessment: The action taken **RESOLVES** the concern.

5j. Comment: Compensatory Mitigation (17Nov05 PGM #Iw). Section 3.6.5.3 on page 3-22 says the proposed plan includes compensatory mitigation to offset adverse impacts on existing mitigation projects that were required under permit requirements for non-Corps development work. It says that compensation must be derived from sources other than the benefits claimed for the CERP plan. Do the benefits claimed for the proposed plan acknowledge use the outputs of these existing mitigation areas as the without-project (base) condition? This question is pertinent in confirming that we are not double-counting outputs. Table 3-6 indicates that the proposed plan would decrease the outputs of the existing mitigation areas. The FDOT mitigation

site is described in the without-project conditions. The Weston Increment 3, White Construction, Sivore Construction, and Sunset Lakes mitigation sites should also be described in the without-project conditions.

HQUSACE Assessment: Although it is still not clear how the existing compensatory mitigation is addressed in the with- and without-project conditions, the mitigation site outputs are very small relative to the proposed plan and therefore double counting, in the unlikely event that it even occurs, would not affect the plan selection or justification. This issue may also be moot depending on the final resolution of the comment above titled, “*Separable Compensatory Mitigation (AFB PGM #12) (17Nov05 PGM #Iv)*.” This concern is **RESOLVED**.

5k. Comment: Compensatory Mitigation Justification (17Nov05 PGM #Ix). Section 3.6.6.3.5 on page 3-33 indicates that the proposed compensatory mitigation features would provide about 275 functional capacity units (FCU) to offset net losses of 84 FCU, that is 327% compensation. Since we would incur specific and presumably higher costs to achieve this compensatory mitigation, relative to the rest of the proposed project, we need to justify the level of mitigation. What are the reasons for overcompensating? The CE/ICA analysis justifying the selection of mitigation features and the level of mitigation needs to be presented in the report.

Action Taken: The analysis has been revised and the proposed mitigation, if found warranted above, appears reasonable. A more detailed CE/ICA analysis to justify the selection of mitigation features and the level of mitigation is not warranted given the cost of mitigation is estimated at only \$470,000. This issue may also be moot depending on the final resolution of the comment above titled, “*Separable Compensatory Mitigation (AFB PGM #12) (17Nov05 PGM #Iv)*.”

HQUSACE Assessment: The concern is **RESOLVED**.

5l. Comment: RECOVER (17Nov05 PGM #Iy). The RECOVER analyses appear to be incomplete because they do not acknowledge the North New River features as part of the selected plan.

HQUSACE Assessment: This issue is **RESOLVED** based on the response that the connecting canal (C-502B Borrow Canal) was included in the RECOVER simulations.

5m. Comment: Integral to CERP (17Nov05 PGM #Iaa). Section 4 makes a point of finding that each of the primary components of the project is “an integral part of CERP.” It is not clear the purpose of these statements. The statements do not include a recognition that the State intends to construct the cited components under Acceler8 and it seems premature to conclude that projects the sponsor envisions constructing in advance of the PCA are integral to CERP.

HQUSACE Assessment: This issue is **RESOLVED** based on the response that the statement that the BCWPA project is “an integral part of CERP” is a direct quote from the draft WPAFS.

The research completed in that study concluded that “the WPA concept is an integral part of the Comprehensive Everglades Restoration Plan (CERP). Ecologic restoration of the Everglades will require a significant increase in the quantity of water available. The WPA provides a critical source for this new water. The vital interrelationship of BCWPA and the rest of CERP is better defined throughout the report.

5n. Comment: Storage Volume (17Nov05 PGM #Iic). Page 2-82 says that Alternative A4 has the greatest storage volume of the final alternatives. This statement conflicts with the dimensions shown in Table 2-3, which indicate that Alternative A3 would have a much greater nominal capacity (20,326 AF) than Alternative A4 (13, 326 AF). Which is correct?

Action Taken: The discrepancy regarding the alternative with the greatest storage volume has been corrected.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5o. Comment: Water Volume (17Nov05 PGM #IId). Table 2-24, page 2-83, last line titled, “1.1 Water Volume” presents reservoir storage areas in acres. The use of area is a poor measurement of volume because the alternatives use different depth combinations. This line of the table should present the increase in either the gross or average annual storage volume in acre-feet.

Action Taken: Table 2-23 now presents water volumes in units of acre-feet.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5p. Comment: Implementation of Alternatives (17Nov05 PGM #IIf). Section 2.3.5.1.1.1 discusses the implementation of Alternative A4 without discussing the implementation of the other alternatives in the final array. Analyses prior to a screening point or plan selection should be applied evenly to all alternatives.

Action Taken: All alternatives are treated equally in Section 2.3.6.1.1.1 (revised section number).

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5q. Comment: O&M Costs (17Nov05 PGM #IIh). Page 2-87 says O&M costs were estimated for each alternative and “*aggregated*”. What is meant by “*aggregated*”?

Action Taken: The entire Regional Economic Impact analysis was revised.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5r. Comment: Table 2-25 (17Nov05 PGM #Ili). Page 2-88 states that the construction costs and real estate costs are shown in Table 2-25 for each alternative. However, Table 2-25 only includes costs for Alternative A4. It appears that columns are missing for the other alternatives.

Action Taken: The table was revised to display costs for all alternatives in the final array.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5s. Comment: AAHUs (17Nov05 PGM #IIj). Why are the AAHUs in Table 2-32 on page 2-100 (563,109) different from those presented in Table 2-16 (561,041)?

Action Taken: Table 2-30 was corrected.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5t. Comment: Other Efforts (17Nov05 PGM #IIs). In Section 1.1.6 on pages 1-12 through 1-14, it is not apparent which projects are part of CERP, other Corps, or other entities. The owner/operator of each project should be stated.

Action Required: Indicate the owner/operator of each project.

Action Taken: Clarification was added to the Section 1.1.6 opening statement.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.

5u. Comment: Project Needs (17Nov05 PGM #IIl). The paragraph beginning with “The BCWPA ...” on page 1-16 and the rest of Section 1.2 include information that should not be presented until after the authorized project or the proposed modifications are presented.

Action Taken: Section 1.2 was revised.

HQUSACE Assessment: This comment is **RESOLVED** by the action taken.