APPENDIX E

AGENCY AND PUBLIC COMMENTS ON DRAFT P2TP/ RESPONSE TO COMMENTS

AGENCY AND PUBLIC COMMENTS

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

December 13, 2007

Ms. Carol Wehle
Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

Dear Ms. Wehle:

Thank you for the opportunity to comment on the *Lake Okeechobee Watershed Construction Project Phase II Technical Plan* (Plan), dated November 2007. The Department of the Interior (Department) is supportive of the efforts of the South Florida Water Management District, Florida Department of Environmental Protection and the Florida Department of Agriculture and Consumer Services as they move forward to implement the important Northern Everglades and Estuaries Protection Program (Program) authorized by the Florida Legislature. We commend your staff and the staff of the other involved State agencies for their fast-tracked work on this Plan.

As stated in the Plan, the *primary goal of the new legislation is to protect and restore surface water resources and achieve and maintain compliance with water quality standards in the Lake Okeechobee Watershed, the Caloosahatchee River Watershed, and the St. Lucie Watershed, and downstream receiving waters through a phased, comprehensive, and innovative protection program which includes long-term solutions based upon total maximum daily loads.*

We are pleased that the efforts set forth in the Program will be both consistent with and complimentary to the efforts of the State of Florida in its Acceler8 Program and the State and Federal effort to implement the Comprehensive Everglades Restoration Plan (CERP). There is a widely recognized need for water supply for CERP and the Southern Everglades, both for the natural system and for other water related needs. This interface between the Program and CERP is essential for the success of both efforts. Additionally, implementing storage projects along with mechanisms for distributing water to the Southern Everglades – the downstream receiving waters referred to above -both via Lake Okeechobee and directly from storage reservoirs located in the Northern Everglades will benefit the restoration effort upon which we have embarked.

Implementation of the Plan will also be an important step in reducing phosphorus loads to Lake Okeechobee. Successfully reducing phosphorus loads to the lake should aid both water quality in the Lake and water quality treatment efforts downstream. We look forward to working with you as the Northern Everglades and Estuaries Protection Program moves forward. Detailed technical comments from the United States Fish and Wildlife Service are attached.

Sincerely,

Terrence Salt
Director Everglades Restoration Initiatives

US Fish and Wildlife Technical Comments
Lake Okeechobee Watershed Construction Project
Phase II Technical Plan (Plan)

General:

- Modeling should be done to show consistency with CERP. Plan modeling does not include CERP needs for water. This effort should also include the deep-well injection measures to ensure that these measures do not eliminate water from the surficial water system. DOI - 1
- Boundary conditions to Glades include environmental releases only… Does not include regulatory flows, many of which are necessary to maintain current performance. DOI - 2
- How was C-43 simulated? Using flows from spreadsheet analysis for assurances and ops plan or using SFWMM flows? Need to be consistent with assurances and ops manual for project which used spreadsheet flows. DOI - 3
- What ops were assumed for EAA reservoir? Operations have still not been resolved on EAA. Did the operations that were used create impacts downstream to the natural system? DOI - 4
- Water Quantity Storage Goal – The document states that their storage goal is based on the total volume of discharge from LOK in excess of estuarine needs. This excess water in the estuaries is the same water that CERP plans to capture and redistribute to the Everglades. We need to plan these two projects together to ensure that CERP water will still be available. The Plan could store, treat and release it more beneficially, but can not make it unavailable for CERP implementation. DOI - 5
- Document states that SFWMM includes 1965-2000 and NERSM includes 1970-2005…. If SFWMM boundary conditions were used, how were 2001-2005 values determined? Why were the 1965-1969 years eliminated? DOI - 6
- Concerned that we are promising benefits from multiple projects to multiple recipients. How will we mesh projects together and decide who gets limited benefits? DOI - 7
- The Plan shows large benefits to LOSA cutbacks even on top of incorporating future 2050 demands. Also, the Plan utilizes deep water injection to remove harmful flows during flood events. How does the increase in water consumption from these two activities and the planned storage and treatment facilities affect Everglades Restoration water availability? DOI - 8
- What is the hybrid LOWSM water supply management scheme? DOI - 9
- The document states that historical flows from DBHYDRO were used with SFWMM flows for boundary conditions. Why were historical flows mixed with model predicted flows in the NERSM model? Are these volumes consistent with one another? DOI - 10
- The document states that the future base condition includes all A8 projects, but the list only includes C-43 Reservoir, C-44 Reservoir and STA, and EAA A-1 Reservoir. Which were really included? DOI - 11
- Water supply demands from Kissimmee Watershed north of the project are likely underestimated in this report. When and how will this be addressed? DOI - 12

Threatened and Endangered Species:

- Caracaras: We are concerned that there may be potential effects to this species as the project will need ~90,000 acres of land for storage and treatment, most of which is currently occupied by caracaras DOI - 13
- Florida Grasshopper Sparrow: This species is present in only a very few locations - all within the Plan project area. The project's management measures will convert uplands to aquatic-based habitat resulting in a loss of lands upon which recovery actions for this species could have occurred. DOI - 14
- Eastern indigo snake: Due to this species secretive nature, we do not have good information on its abundance in the project area. However, we anticipate that it will be present on most of the approximately 90,000 acres needed for implementation of the Plan. DOI - 15
- Florida panther: The panther occurs sporadically in the southern portion of the Plan project area. The Service has a conservation strategy to create migration corridors that will allow this species to move across the landscape and thereby improve is abundance north of the Caloosahatchee River. The Service is concerned that the implementation of the Plan may hamper our abilities to create corridors and improve habitat conditions for this species. DOI - 16

Other Species:

- Swallowtail Kite: This area supports the largest communal roost for swallowtail kites in the country (approximately 60 to 70 percent of the entire U.S. population). The Service is concerned that any Plan projects in this area may reduce the forage for this species and potentially cause it to become federally endangered. DOI - 17

Fisheating Creek:

- We are concerned with the water availability during low water conditions for Fisheating Creek. The Plan may exacerbate low water conditions by pulling too much water out of the creek for storage and treatment. Will savings clause protections apply to this project? If not, we recommend implementation of a minimum flow and level for the creek. DOI - 18
- Fisheating Creek is the last free flowing stream into Lake Okeechobee. We are also concerned that implementation of the Plan will necessitate the installation of a weir or other water control structure in Fisheating Creek. This would cause an unwanted navigation block in the stream and be an impediment to aquatic species that move up and down the stream channel. DOI - 19
- There are numerous cultural resources in the Nicodemus Slough and Fisheating Creek watersheds. We recommend that these resources be properly evaluated and managed during the implementation of the Plan. DOI - 20

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
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REPLY TO
ATTENTION OF

Planning Division
Watershed Planning Section

DEC 13 2007

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL	# of pages ▸ 20
To ARMANDO RAMIREZ	From ERIC BUSH
Dept./Agency SFWMD	Phone # 904-232-1517
Fax # 561-682-5684	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Mr. Armando Ramirez, Project Manager
South Florida Water Management District
3301 Gun Club Road, MS 7640
West Palm Beach, Florida 33406

Dear Mr. Ramirez:

Thank you for the opportunity to review and provide initial comments on the State of Florida's November 2007 draft *Lake Okeechobee Watershed Construction Project, Phase II Technical Plan*. Responsible staff from the South Florida Water Management District, Florida Department of Environmental Protection, and Florida Department of Agriculture and Consumer Services should be commended for producing a comprehensive assessment of the water management problems and opportunities in the Lake Okeechobee Watershed in a compressed time period.

As the State of Florida's partner in the planning, construction, and operation of the Central and Southern Florida (C & SF) Project, the Comprehensive Everglades Restoration Plan (CERP), and other major civil works water management projects in South Florida, the Jacksonville District of the U. S. Army Corps of Engineers supports the State's efforts to develop a plan that will address unmet water storage and water quality needs in the Lake Okeechobee watershed as part of a regional program for restoring the South Florida ecosystem and for providing for other water-related needs, such as water supply and flood control. The draft plan compliments ongoing efforts by the Corps of Engineers to restore the South Florida ecosystem, and when implemented, should further federal and state ecosystem restoration goals and objectives for the South Florida region.

The proposed water quality improvement actions and features in the draft plan represent significant progress toward achieving state water quality standards in the watershed, especially phosphorus levels in Lake Okeechobee. Controlling pollutant loading to Lake Okeechobee and lowering in-lake phosphorus concentrations are essential for achieving regional ecosystem restoration goals and objectives, since much of the "new" water to be delivered by CERP projects is stored in and flows from Lake Okeechobee to sensitive natural system areas downstream.

As with any watershed planning effort involving an area of this size and hydrologic complexity, many of the basic tenets of the draft plan will require further detailed regional and

basin-level analyses to address uncertainties. One uncertainty of particular concern is the plan's potential affects on the availability and timing of deliveries of water throughout the ecosystem. USACE - 1

The CERP was formulated and approved based on many assumptions supported by regional stakeholders and policy-makers about the location, volume, and availability of fresh water throughout the region. Our initial assessment of the proposed 900,000 to 1.3 million acre-feet of storage proposed in the Lake Okeechobee watershed suggests that storing the proposed volumes of water in reservoirs may affect the availability and timing of water deliveries to the Southern Everglades, which could create additional planning challenges for CERP projects.

Another issue that is important to highlight is regulatory implications. The draft plan involves thousands of acres of land in the Lake Okeechobee watershed, and includes many construction projects likely involving the placement of fill material in waters of the U. S. and activities in the vicinity of navigable waters. Permits from the Corps of Engineers issued under Section 10 and Section 404 of the U. S. Clean Water Act (P. L. 92-500) will be required, necessitating preparation of environmental impact statements to comply with the National Environmental Policy Act (NEPA). Pending the outcome of further coordination of this issue with our headquarters, a programmatic environmental impact statement may be recommended. USACE - 2

In closing, let me again compliment the collaborative efforts of the State of Florida agencies charged with preparing the draft plan. It is our understanding that a final plan will be submitted to the Florida Legislature on 1 February 2008. We would be pleased to provide additional comments at that time if requested to do so. The attached document contains additional initial comments compiled by Corps of Engineers Jacksonville District staff. Comments in this letter and the attached document do not necessarily reflect the views of our higher headquarters, the Secretary of Army's office, or the administration. Please telephone Eric Bush at 904-232-1517 or e-mail Eric.L.Bush@usace.army.mil if you have questions about the Jacksonville District's initial comments.

Enclosure

Sincerely,

Stuart J. Appelbaum,
Deputy for Restoration Program
Management

CF: Mike Magley, CESAD

Northern Everglades Initiative
Phase II Technical Plan - Draft Report Comments
SFWMD Comment Period Ending 13-Dec-07

A. General Comments

1. **General.** It appears that all of the Alternatives presented in the Phase II Technical Plan ("the Plan") do not achieve the TMDL. However, the approximate load reduction shortfalls are quantified. The Plan should state more clearly how those shortfalls are going to be addressed. If additional load reduction measures are required to meet the target, than these need to be described in more detail. The only statement regarding this appears on **Page 8-30, Section 8.4,** and seems too general. USACE - 3

2. **General.** Because many elements of the Plan are partially or wholly reliant on future actions of private landowners and/or the federal government which are outside the purview of the State, it should be recognized that in the absence of actions beyond its scope and/or authority, the Plan could foresee-ably fall short of the State's stated expectations. The foundations for many of the planning assumptions and assertions stated in the Plan are not well documented in the report. The author should provide a more thorough discussion of the supporting documentation behind the Plan's key planning assumptions and assertions in order to help the reader understand the potential risks and uncertainties of the Plan. USACE - 4

3. **General.** This report is very general and conceptual. These comments are made without any formal coordination with Corps higher authority and are solely comments of the Jacksonville District. USACE - 5

4. **General.** Any project proposed under the Plan must be examined carefully to understand its potential impact on congressionally authorized projects and their project purposes such as flood control, navigation, water supply and environmental restoration. Some of these projects have been implemented with signed local cooperation agreements in place which stipulate that existing legal commitments must be met. Others have or will seek Corps regulatory permits that must consider the effect of these projects on the public interest and may include future Federal projects, including those under the Comprehensive Everglades Restoration Plan. USACE - 6

5. **General.** The report assumes Federal cost sharing for water quality improvements will occur to help achieve the necessary load reductions. However, some of these costs may not be cost sharable without specific Congressional action. Additionally, it is not certain that some of these Federal projects will be constructed as anticipated (time and configuration). USACE - 7

6. **General.** Section 4.0 begins with a statement that a concerted effort was made to involve all appropriate and relevant agencies. It is unclear the level of coordination with the USACE - 8

Army Corps since much of this effort is dependent upon implementation of the Comprehensive Everglades Restoration Plan.

7. **General.** **Table 9-10** seems to only have included Corps small navigation projects as potential funding sources. This may need to be reviewed. USACE - 9

8. **General.** The report employs a systematic approach to analyzing the problems and opportunities over nine sub-watersheds identified in the report in **Section 5.2, Table 5.1** on **Page 5-2**. The report recognizes CERP projects as part of the proposed solution however it does not address how the planning conditions used to formulate and develop CERP Project Implementation Reports (PIRs) would be impacted by capturing and storing the proposed 900,000 to 1.3 million acre feet of water proposed by the plan north of Lake Okeechobee. If this plan is constructed, it could impact the timing and availability of water throughout other parts of the natural system upon which the analysis used to justify CERP are based. The implementation of this plan could trigger the need to re-examine and re-model all CERP projects reports completed to validate the availability and timing of water to achieve project benefits used to justify the recommended plans. USACE - 10

9. **General.** Some of the areas being proposed for water storage may be located within the boundaries of projects already constructed or under construction such as the proposed use of a portion of the Rolling Meadows Ranch (portions of this property are needed for the Kissimmee River Restoration Project) for a storage reservoir. The report does not contain any mapping which would enable readers/reviewers of the report to determine if any of the proposed locations impose on any lands required as part of ongoing Federal/State projects. This comment is included just to point out that features proposed by the plan must be located so as to not adversely impact currently authorized projects in CERP and the Kissimmee River Restoration Report. If features identified by the plan are found to be located within proposed CERP project footprints, this could change the "without project" conditions and may impact the availability of suitable land on which to locate proposed CERP features, potentially impacting the cost and ability to obtain project benefits. USACE - 11

10. **General.** As stated in other comments, ensure consistency throughout the document regarding the TP load reduction values for the features of all the Alternatives. For some features, there are 3 different values in various locations in the document. USACE - 12

11. **General.** If the values from General Comment (10) above are different because they account for Lake Okeechobee "re-circulated" water treatment, then those values should be identified and separated to avoid confusion, since the Lake O re-circulated water treatment TP load reduction doesn't count towards the TMDL, nor is it counted in the tables that show total TP load reduction for each Alternative (**e.g. Table 7-5 on page 7-18**). This causes confusion when trying to sum the TP load reduction total for each feature and matching it with the "Summary of TP load reduction" tables associated with each Alternative. USACE - 13

12. **General.** Also ensure that the TP load reduction values in the Main Report are consistent with those in the Appendix C, and vice versa. USACE - 14

13. **General.** Unless this reviewer missed it, the document lacks a table, similar to those done for Alternatives 1 through 4, that summarizes the TP load reduction for Modified Alternative 4 (the Plan) broken down for the additional measures that were included to address the shortfall from Alternative 4. Although **Tables 9-2 through 9-4** contain pertinent information, it's difficult to ascertain whether or not the TP load reduction of some of the features included in these tables has already been accounted for in Alternative 4 (**Table 7-7 on page 7-21**). Suggest developing a table (similar to **Table 7-7**) for Modified Alternative 4 that (1) lists the individual load reductions for the features of Modified Alternative 4, (2) lists the total load reduction (estimated?) provided by Modified Alternative 4, and (3) lists the TMDL shortfall or, possibly in this case, the amount over the TMDL. USACE - 15

14. **Section 1.1, Page 1-1, Line 40.** The legislation stated, "... *The Legislature finds that improvement to the hydrology, and water quality and associated aquatic habitats within the of Lake Okeechobee watershed, the Caloosahatchee River watershed, and the St. Lucie River watershed, is essential to the protection of the greater Everglades ecosystem... ... It is the intent of the Legislature that this section the Lake Okeechobee Protection Program be developed and implemented in coordination with the Comprehensive Everglades Restoration Plan and, to the greatest extent practicable, through the implementation of Restudy project components and other federal programs in order to maximize opportunities for the most efficient and timely expenditures of public funds ...*".
Suggest a revision to the discussion of the legislation in Section 1.1 to recognize the relationship and connection of the Northern Everglades Initiative to the Greater Everglades and the importance of development and coordination with CERP. USACE - 16

15. **Section 2.3.2.1, Page 2-8, Line 280.** Lock S-193 has replaced HGS-6. USACE - 17

16. **Section 3.1.10.1, Page 3-13, Line 553.** We suggest the following language for describing the HHD project: "The primary purpose of the Herbert Hoover Dike (HHD) Rehabilitation Project (WRDA 2000 and 2007) is to rehabilitate the HHD to continue to function as authorized by Congress for the containment of water levels within Lake Okeechobee to provide flood protection, water supply and navigation." USACE - 18

17. **Section 3-20, Page 3-20, Line 779.** Does report mean "utilized for Lake Okeechobee discharges on a secondary basis when capacity is available." USACE - 19

18. **Section 3.4, Line 928, Planning Constraints.** The "Comprehensive Everglades Restoration Plan Assurance of Project Benefits Agreement" (a.k.a. "President-Governor Agreement") executed by President George W. Bush and Governor Jeb Bush on 9 January 2002 protects the water made available by CERP projects from being *"permitted for a consumptive use or otherwise made unavailable for the restoration of the natural system"*. Although it is recognized that the water storage and water quality treatment USACE - 20

features included in the draft Technical Plan would store and treat "existing" water in the Lake Okeechobee watershed, some of that existing water would also ultimately be water made available by CERP projects (e.g., Lake Okeechobee Watershed CERP project, Lake Okeechobee ASR CERP project, Lake Okeechobee Regulation Schedule CERP project, Environmental Deliveries to the Caloosahatchee and St. Lucie Estuaries CERP projects, Everglades Rain-Driven Operations CERP project) upon completion and approval of PIRs identifying water made available by those projects. Implementation of Technical Plan components should not preclude future restoration opportunities dependent upon having enough water available in the Lake Okeechobee watershed at the right times to meet other South Florida regional ecosystem restoration needs (particularly in the Everglades, Florida Bay, and Biscayne Bay), unless it is determined that those CERP projects depending on the diversion and storage of "existing" water will not be implemented.

19. **Chapter 2, Page 2-4, Line 96.** Regarding Federal funding: With passage of WRDA 2007, Congressional authorization of some early CERP projects has been achieved. USACE - 21

20. **Chapter 2, Page 2-7, Line 228.** This line references back-pumping from parts of EAA into Lake Okeechobee. Wasn't this practice disapproved by a recent SFWMD Executive Board resolution? USACE - 22

B. Plan Formulation Comments

1. **Page 7-11, Section 7.4.** CERP LOW project employed an identical process (i.e. Land Suitability Model to determine Constraint Free Acreages (CFA)) for the development of Management Measures (MM). SFWMD as lead (with the Corps) sited many alternatives using this method. They created many MM's comprising similar Alternatives as this Plan. Most of these had fatal flaws that prevented further formulation. Some of these experiences will be shared in the comments concerning specific MM's below. USACE - 23

2. **Page 7-16.** General comment on plans and MM's. The alternatives in this Plan are heavily dependant on reservoir storage, whereas CERP is heavily leveraged on ASR. CERP A assumes full implementation of ASR for storage of around 236k ac-ft/yr, whereas the various alternatives employ less than 21% ASR implementation (50 k ac-ft/yr). The CERP LOW project uses ASR principally in the Paradise Run Wetland. While this is a good place hydro-geologically for ASR, ASR facilities at this location may be problematic with FWS endorsement/support of Paradise Run Wetland Restoration. Other areas of similar quality will be recommended in the following comments. USACE - 24

3. **Page 9-24, Line 799.** Note CERP A models 236k ac-ft of storage for ASR. USACE - 25

4. **Page 7-17, Section 7.5.2.** Total control of deleterious lake stages amount to approximately 1.1 feet of lake stage (as estimated by POR for lake stage deviations). The 600k ac-ft reservoir would provide this with 50% reserve capacity. Consider re-sizing this to a smaller size compatible with achievable benefits as cost and siting will be a challenge. USACE - 26

5. **Page 7-17, Section 7.5.2.** The CERP LOW team performed extensive siting analysis during formulation for the project. The team could not find sufficient suitable (constraint free) land in excess of 5416 acres and storage of 79.6 k ac-ft. Alternative 2 does not appear to be viable for this reason. USACE - 27

6. **Page 7-18.** The CERP LOW team also performed extensive siting analysis during formulation for the project. The team could not find sufficient suitable (constraint free) land in excess of 4000 acres for an STA. The basin is very "flashy" and reservoirs would be dry most years. The STA alternative required transfers from a second planning area. Recent drought year 2000 illustrates problem of putting large reservoir there. USACE - 28

7. **Page 7-18.** During ASR planning siting study, FEC had great hydro-geological qualities for ASR siting. The 4000 acres that could be feasibly used might be better if employed as a small ASR field that could support 5-10 ASR wells. USACE - 29

8. **Page 7-20.** The CERP LOW team performed extensive siting analysis during formulation of the project. The team could not find sufficient suitable (constraint free) land in excess of 5416 acres and storage of 79.6k ac-ft. This Alternative 4 MM does not appear to be viable for this reason. USACE - 30

9. **Pages 7-15 through 7-20. RASTAs and STAs.** Most of these are sited in areas that have land constraints and water availability constraints that prevent constructing large impoundments. These are also located in areas that have good hydro-geologic properties (in general) to locate ASR wells. This reader recommends coupling ASR with some of these STAs, particularly FECs ISTOK, as this would assist in multi-season supply of water. USACE - 31

C. Restoration Benefits Comments

1. **Section 3.2.2, Page 3-18, Line 721.** It appears that WSE has not provided significant improvement in reducing extreme high stages. If it did, why is LORSS being implemented? USACE - 32

D. ASR-Related Comments

1. **Page 2-4, Line 104.** Implementation of permanent ASR Facilities within the LOW are not currently scheduled for the 2008-2010 period. Currently, there is no PIR level effort to move forward with CERP ASR implementation. Pilot and regional studies are being conducted. There is only one pilot facility within the KR watershed and another one east of Lake Okeechobee. USACE - 33

2. **Page 6-4, Line 122.** ASR wells sitting (best locations—moderate to highly feasible) were determined to be adjacent to Lake Okeechobee. Areas upstream of the reservoir, adjacent to Kissimmee River were judged as low feasibility areas for ASR USACE - 34

implementation. This analysis may have to be redone if other STA/storage features provide opportunities for ASR to further treat and recharge the water into the aquifer. Nearby access to source water is a major constraint for ASR when considering minimizing construction costs.

Groundwater flows in upstream areas of Lake Okeechobee, along middle and upper reaches of the Kissimmee River generally move eastward on the east side of the river and westward west of the river. These groundwater flows could reduce the storage recovery efficiencies within the SFWMD boundary if substantial amounts of the recharged water move beyond the zones where wells could recover that water.

ASR technology certainly provides a tool for the storage of large amounts of water that has to be treated to meeting drinking-water standards before being recharged into the aquifer and which has initially met the quality standards at the source (surface water). Due to regulation constraints, ASR technology used in CERP cannot be designed to treat water which has not met the quality standards at the source. A combination of STA/wetlands and ASR may be warranted if substantially large amount of water can be treated to standards thorough those features before is further treated to drinking water standards by ASR technology as per FDEP and USEPA requirements.

3. **Page 7-11, Line 433.** CERP ASR is not limited to LOW and adjacent watersheds. It is expected the technology will also be used in other part of South Florida. USACE - 35

4. **Page 7-11, Line 452.** CERP ASR is targeting the upper Floridan Aquifer System which contains brackish water. This aquifer was designated by the State as a drinking-water source. There are some concerns that deep-injection wells may dispose of water that could be used for CERP restoration efforts. There are also concerns that the water may migrate upward and affect the water stored by ASR wells which has being treated to drinking-water standards before recharge. Deep-well injection of raw source waters alone poses a serious threat to CERP environmental restoration goals in terms of the overall water balance. USACE - 36

5. **Page 7-16, Line 650.** The Kissimmee ASR Facility is scheduled to undergo cycle testing in calendar years 2009 and 2010 pending the outcome of current drought conditions. Under pilot project authority, the facility would have to be dismantled or converted to a permanent facility under a separate Congressional authorization. It may be possible that further authority may be granted to expand the facility to a multi-ASR wells facility as those envisioned under the CERP. USACE - 37

6. **Page 7-28, Line MM ID 47.** Further reduction of Total Phosphorous (TP) loads will be certainly incidental to the stated plan. Current authority dictates that for CERP ASR features are only authorized to treat source water that meets state water quality standards. USACE - 38

7. **Page 9-17, Line 555.** Kissimmee Pilot – This ASR facility cycle testing schedule anticipates two full cycles and one partial cycle. The first cycle will consist of 30-days of recharge, 30-days storage and 30-days of recovery at an expected nominal rate of 5 USACE - 39

millions of gallons per day (mgd). The second cycle is planned as a 7-month recharge with approximately 2-months of storage and 7-months of recovery at 5 mgd. The last partial cycle will be a 2-month recharge and 2-month storage period. The critical point is that this facility will not be operated continuously.

8. **Page 9-19, Line 650.** The ASR Regional Study is also expected to provide information regarding the best operational strategy to optimize the benefits of the combined surface and underground storage features for environmental restoration and other water-related needs in South Florida. The ASR Contingency Study will devise contingency plans that may be implemented should the pilot projects reveal that ASR technology cannot be implemented at the level of intensity envisioned and described in the Yellow Book. USACE - 40

9. **Page 9-23, Line 282.** The PIR for the Lake Okeechobee ASR features may be completed soon after 2010. However, completion of the PIR does not equate to implementation. Currently, the ASR Regional Study is involved in a pre-PIR effort. If a proactive and accelerated implementation of ASR features is desired as the Plan indicates, State and Congressional authority will have to be sought for incremental implementation of ASR features once federal funding has been secured. USACE - 41

10. **General-ASR.** A full blown PIR process for ASR implementation may be worth careful consideration in the near future, since time is of the essence and ASR opportunities are becoming scarce. USACE - 42

E. Water Quantity Related Comments

1. **Page 1-10, Lines 304 and 305.** The Plan states that Lake Okeechobee fast-track projects included in the recommended plan are eligible for federal cost share. As stated, the CERP-related fast-track projects are integral elements of a broader, multi-watershed project for restoration of the Greater Everglades Ecosystem and as such, their individual contributions to the overarching goals of the CERP are critical to the broader restoration program's success. It is possible that hastened implementation of CERP-related fast-track projects in the Lake Okeechobee watershed could yield noteworthy progress toward satisfaction of CERP's regional water storage needs. However, the Plan appears to discuss in only general terms the links and anticipated benefits of the fast-track projects to their overarching CERP. A more explicit discussion of how, and to what extent, the referenced CERP features might benefit the overarching CERP program would lend more credence to statements regarding eligibility for CERP-related federal cost share. USACE - 43

2. **Page 2-2, Figure 2-1.** The figure shows the project study area and associated hydrologic model boundaries. While it is evident that the Plan's authoring/contributing agencies focused on the ecological condition of Lake Okeechobee and the Caloosahatchee and St. Lucie Estuaries, the methods for assessing the recommended plan's effects on other regional ecological resources and associated restoration projects/programs are not evident. To formulate an understanding of how other regional ecological resources and associated restoration projects/programs might be benefit from the recommended plan, it would be useful to include in the report a discussion of how model boundary conditions USACE - 44

for the hydrologic model were synthesized, and to what extent those boundary conditions accounted for other water related needs of the entire region and associated restoration projects and programs.

3. **Page 2-4, Lines 100 and 101.** The Plan's authors state that because the goals and objectives of the CERP and the Northern Everglades Estuarine Protection Plan (NEEPP) significantly overlap, the two programs complement and support one another. While the goals of the two plans do exhibit a high degree of overlap, the CERP-related goals and objectives, and their associated performance measures documented in the Plan represent only a subset of those that are applied to the multi-watershed regional CERP-related evaluations that are typically conducted to ensure regional compatibility with the overarching programmatic objectives of CERP. USACE - 45

4. **Page 3-10, Lines 420 – 435.** The Plan's authors state that traditional groundwater sources are anticipated to be insufficient to meet the water demands of central Florida by the year 2013. The Plan anticipates that surface water from the Kissimmee River and the Kissimmee Chain of Lakes will be among the alternative sources of water that will be tapped to meet those demands. The Plan does not provide an estimate of the magnitude of those demands, nor does it discuss the potential impacts of those demands on the Plan's goals and objectives and/or their combined/cumulative influence on other regional restoration projects, programs, goals and objectives. USACE - 46

5. **Pages 3-14 to 3-27, Section 3.2.** The Plan asserts that its objectives and implementation are compatible with those of the CERP program. In order to support this assertion, it would be helpful if the Plan included supporting information regarding the regional hydrologic modeling that was used to create boundary conditions for the sub-regional Lake Okeechobee modeling shown in the Plan. Review of this supporting information could be facilitated if provided in a format similar to the graphics, tables and figures described in CERP Programmatic Guidance Memorandum #4. USACE - 47

6. **Section 9, Line 574.** Re-circulating STAs: The use of Lake Okeechobee water during dry periods to circulate water through the STA would cause an acceleration of the loss of surface water to evaporation. The need to keep the STA hydrated during dry periods would be in competition with other water users and it would be in competition with water needed to maintain the health of the lake's littoral ecosystems during low lake levels. USACE - 48

7. **Section 7.3.2.4.1 Deep Well Injection, Line 439-459**. The injection of surface water into deep aquifers for disposal is contrary to the principles of CERP, where excess water should be captured and saved for use during dry periods. The disposal of water, whether to tide or by deep well injection, represents a permanent loss to the surficial system which cannot be recovered for use during future drought periods. USACE - 49

8. **Page 9-16, Table 9-4.** RASTA ID Istokpoga/Kissimmee RASTA - Is this feature standalone to the CERP LOW STA in the Istokpoga Basin? If so, water availability will be an issue as the CERP LOW feature (already has dry-out concerns) will compete with USACE - 50

this RASTA for water sources. If not, where is the CERP LOW STA in the selected alternative?

9. **Page 9-16. Table 9-4.** Fisheating Creek RASTA, Nicodemus Slough RASTA - CERP LOW determined that storage and water treatment features were not feasible to construct in lower Fisheating Creek Basin due to lack of water in Fisheating Creek, cultural resource impacts, suitable site location, and swallow tail kite nesting. USACE - 51

10. **Page 7-1, Section 7.1.2.** This page references the use of SFWMM model, yet detrimental flows to Everglades and Estuaries are not compatible with CERP A and 2050B3 simulations. The combined effects of excessive stages, estuarine pulse releases and Everglades releases is estimated at approximately 1,000,000 acre feet per year. USACE - 52

11. **Page 7-2, Figure 7-1.** The plan is built around Lake Okeechobee regulatory releases and the assumption that they all can be captured. Break point for storage assumes storage between 900,000 ac-ft and 1,300,000 ac-ft. Alternatives have been planned along these lines. Performance has not been modeled. The assumption that 900-1300k ac-ft would be utilized is a faulty assumption. Consider a comparison of CERP A, FWO and Alternatives 1-4. Total deleterious effects to the environment can be measured as approximately 1,000,000 ac-ft per year of ill-timed pulsed water. Creation of mega reservoirs will exceed beneficial storage and affect utility of existing projects such as C-44 reservoir and A-1 EAA reservoir. USACE - 53

    Per CERP A and B 2050, detrimental releases to Everglades and Estuaries are less than 600k ac-ft. Alternative 2 retains storage significantly above modeled releases. What is the value of this storage? USACE - 54

12. **Page 7-3, Section 7-2, Lines 116-122.** The section is valid, but no other reasonable constraints were used such as the lack of available land in Fisheating Creek Basin, as well as available water. Furthermore, while this is a true statement, it is confusing to this reader. If the goal is load reduction to the lake and stage management, a comprehensive solution is required. As an example, HDR used management measures that were more comprehensive. Fisheating Creek Basin feeds the SAV portion of the Lake that has good water quality; one would want to use this as an example of the low pay back that one would get from this basin. USACE - 55

13. **Page 5-23, Section 5.4.2.** An excerpt from SFWMD Lake Okeechobee status in 2005 showed that 3 years have pulled the average phosphorous load up significantly. If WQ components are designed to fix this, the situation arises where 3 years out of 39 an STA is required to capture and treat. This may be problematic as large STAs would require surface water inflows the 36 years that this reserve capacity is not used. USACE - 56

F. Water Quality Related Comments

1. **Section 1-1.** Section 1.1 states that the amount of total phosphorus flowing into Lake Okeechobee exceeds the set total maximum daily load for the lake by 4 times. It must be USACE - 57

determined if the total maximum daily load is a water quality standard that applies to all of the projects that may discharge into a water body that directly or indirectly empties into Lake Okeechobee. This is a necessary determination since it can affect Federal (Army Corps) cost sharing participation. For the Army Corps to make an informed decision that the State of Florida and its agencies can rely on this must be clearly understood so that decisions are clear.

2. **Page 7-9, Lines 370-371.** If this reader's recollection of this issue as related to the CERP LOW Project is correct, DEP does not count "recirculation" of Lake Okeechobee water toward achievement of the TMDL. USACE - 58

3. **Page 7-18, Line 741.** Should the TP load reduction be "10" rather than "18" as stated on **page 8-6**, Note (10), following **Table 8-2**? OR, should it read "9" as written in **Table 7-9** on **page 7-27**, MM ID #112? USACE - 59

4. **Page 7-20, Line 790.** TP load reduction is stated as 33 mt/yr. TP load reductions should be consistent throughout the document. Also see **page 7-27, Table 7-9**, MM ID # 115, where reduction is written as 22 mt/yr. Ditto **page 8-6, Table 8-2**, where reduction is stated as 18. USACE - 60

5. **Page 7-20, 7-21, Section 7.5.4, Alternative 4.** When totaled, the individual values for TP load reduction don't add up to "59" as stated **on line 824 on page 7-21**. Either correct or provide explanation. Also, these TP load reductions don't match up with the values in **Tables 9-2, 9-3 and 9-4 on pages 9-14 through 9-16.** Also ensure that the TP load reduction values are consistent throughout the document, including **Table 8-2 on page 8-4, and Notes (8) through (11) on page 8-6.** USACE - 61

6. **Page 9-1, Paragraph 1.6.** CERP's Lake Okeechobee Watershed Project (LOW) TSP is estimated to produce approximately 72 MT of TP load reduction. Some of the components are similar but some are very different. Will CERP load reduction be considered in the plan or abandoned? USACE - 62

7. **Page 5-24, Table 5-5.** CERP's LOW project load reduction is reported as 54 in this table. The project's TSP modeled a 72 MT/yr load reduction. This table needs to be corrected. USACE - 63

G. Water Quality Cost-Sharing Related Comments

1. **Section 1.3, Paragraph 6, second bullet.** This indicates that the plan includes the Comprehensive Everglades Restoration Plan and the Lake Okeechobee and Estuary Recovery program. Care must be taken on the use of this language, because CERP may be constructed and the assumption on Corps cost sharing may not prove to be accurate and may require specific Congressional authorization for water quality cost sharing when source water does not meet state water quality standards as many of the waters identified in this report. USACE - 64
   This statement is applicable at many places throughout the report.

2. **Section 1.7.** This section contains a statement that is inconsistent with how the Army Corps sees its commitment for the Lake Okeechobee Watershed Project. Contrary to the statement, the Corps' cost sharing for water quality improvements necessary for the Comprehensive Everglades Restoration Plan always contained the stated requirement that source water met state water quality standards. This statement is applicable at several places throughout the report including Section 9.9.1. USACE - 65

   The Corps has recently received HQ guidance that states "...for CERP projects where inflows do not currently meet water quality standards, the Corps will evaluate the benefits of any water quality features in Project Implementation Reports (PIRs) and if the benefits are determined to be essential to Everglades restoration, then the Corps may recommend to Congress in a PIR that it be given specific statutory authority to build and cost share the subject water quality features to both help achieve existing water quality requirements and provide additional restoration benefits critical to the success of CERP. The cost of operating and maintaining (O&M) such features would be allocated so that the cost of bringing the inflowing water into compliance with pre-project water quality requirements would be born 100% by the Non-Federal Sponsor (NFS). Any O&M costs associated with incremental benefits above that compliance standard which will be considered CERP benefits would be cost shared 50-50 between the NFS and the Government pursuant to CERP. If Congress chooses to provide this authority such water quality features would be cost shared accordingly as part of the Federal project."

H. Legal Comments

1. **Section 3.1.7.5.** This section states that sustainable quantities of ground water are insufficient to meet future demands beyond 2013. It is not clear how this may affect existing Federal projects for navigation and other authorized purposes. USACE - 66

2. **Section 3.4.1.** This section addresses the Kissimmee River Restoration and needs to include impacts to the authorized Federal navigation purpose. This should also be considered in Lake Okeechobee for the Federal Okeechobee Waterway. USACE - 67

I. Impact to CERP Projects Comments

1. **Section 7, Lines 799-804.** Alternative #4 modified recommends that the CERP LOW Taylor Creek Reservoir be changed to an STA. This changes the recommended plan for the CERP project, possibly requiring the CERP LOW team to look for another site for the location of the Taylor Creek Reservoir. USACE - 68

2. **Section 7, Lines 805-811.** Alternative #4 modified recommended that the CERP LOW Istokpoga & Kissimmee reservoirs be changed to function as a Reservoir Assisted STA (RASTA) rather than storage reservoirs. This would change the operational characteristics of the CERP LOW reservoirs and impact the project benefits. The change in the operations of the reservoirs to RASTAs would be focused on the optimization of USACE - 69

the removal of P-Load headed to the lake. In contrast, if the reservoirs are operated to serve a primary function of storage units then they will store water when the lake levels are high and damaging to the ecosystem in the lake and then release that water only when the lake levels are low enough to be non-damaging to the lake ecosystem. Looking at historic lake levels, there could be extended periods when the reservoirs will be dry for multiple years, and during periods of high lake levels, the reservoirs may be full and not discharge for multiple years. The need to keep water flowing through the STAs would require releases of water from the reservoirs when it would be retained under reservoir operations and it would force the pumping of water into the RASTA when the reservoirs may be dry. The operations regimes between a storage reservoir and a RASTA are not complementary.

3. **Section 7, Line 805-811 & 832-833.** The comment that the RASTAs would be connected to the Lake so that it could draw water from Lake Okeechobee during dry periods would compound the low water levels in Lake Okeechobee and could be in direct competition with water needed to maintain the health of the Lake's littoral ecosystems. This operational scheme is contrary to currently envisioned operational regime of the reservoirs, which would involve storing water during periods of high lake stages and releasing water during periods of low lake levels. USACE - 70

4. **Page 7-2, Figure 7-1.** The Plan indicates that a water storage target of between 900,000 ac-ft and 1,300,000 ac-ft. will be required. How did the Plan evaluate the potential down-stream hydrologic impacts to flows through Everglades National Park and at Tamiami Trail if this upper watershed storage target is achieved? Were there any impacts to these flows? USACE - 71

5. **Section 1.1, Page 1-1.** In hindsight, it seems that CERP probably focuses more on the area from Lake Okeechobee south. The Northern Everglades and Estuaries Protection Program proposes additional projects that help address problems from Lake Okeechobee and the watershed to the north. To the maximum extent practicable, these proposed Northern Everglades projects should be complimentary to the purposes of CERP components. Note, the SFWMD commissioned a Peer Review Panel to review their 2008 South Florida Environmental Report. Jeffrey Jordan from the University of Georgia presented the panel's findings at the Governing Board Workshop on 14 November 2007. One of the Panel's recommendations was "*that careful attention be paid to maintaining strong links between the northern and southern areas and continued communication of progress in an integrated manner.*" The Peer Review Panel presentation can be found at https://my.sfwmd.gov/portal/page?_pageid=2574,20076216,2574_20092121&_dad=portal&_schema=PORTAL. See the 2 December Sun Sentinel news article at https://intranet.saj.usace.army.mil/WebWiz/forum/forum_posts.asp?TID=6695&PN=2. The news article has other quotes from Jeffrey Jordan from the University of Georgia. USACE - 72

6. **Section 7.1, Page 7-1.** Although the focus of this effort is from the Lake to the North, this reader suggests that the SFWMD look at system goals also. (i.e. Coordination with CERP and the Greater Everglades. The goal being trying to ensure these projects are compatible with CERP and the C&SF project. USACE - 73

J. Impact to Estuaries Comments

1. **Chapter 7, Page 7-1.** Why is a discharge event defined as 30-days in duration in the Plan, while the Lake Okeechobee Regulation Schedule (LORSS) considered a 14 day discharge events? This longer period could result in overestimating benefits to downstream estuaries. USACE - 74

2. **Chapter 7, Page 7-1 and 7-2.** This discussion does not clearly explain the amounts and durations of flows that would constitute "damaging flows" to the estuaries. In addition, these calculations do not appear to include local basin runoff when evaluating performance and impacts of the Plan. This approach is not consistent with the evaluations recently performed during formulation and evaluation of the LORSS, and may result in overestimation of benefits to downstream water bodies. USACE - 75

K. Regulatory Comments

1. **Jurisdiction.** Construction of many of the features and actions described in the Plan will require Department of the Army permits pursuant to Section 404 of the Clean Water Act and /or Section 10 of the Rivers and Harbors Act (activities within Lake Okeechobee and other navigable waters). The Plan correctly identifies on **Page 9-21** that specific permit requirements and or issues may not be evident until a substantial level of detail has been developed during planning and design. The Corps encourages the SFWMD to contract with an environmental consultant to perform jurisdictional determinations in accordance with the *1987 Federal Wetland Delineation Manual* and review under the Rapanos guidance early in the process (during the planning stage). As discussed on **Page 2-6** of the Plan, dominant land cover includes agriculture (namely pasture) and natural areas, categories that may include waters of the United States. USACE - 76

2. **Alternatives.** All permit decisions made by the Corps follow a sequential evaluation process that involves avoiding, minimizing and compensating for unavoidable losses of aquatic functions and values, in that order. The Corps must first define the "basic project purpose" after which the applicant must analyze practicable alternatives to avoid filling waters and wetlands. Activities that do not require being located in wetlands to fulfill their project purpose are presumed to be able to be located in upland areas, and the burden of rebutting this presumption falls upon the applicant. We concur with the objective described on **page 7-12** for siting management measures by avoiding and minimizing adverse impacts to wetlands and areas of high ecological value. Comparison of alternatives, **page 8-26** does not include acres of wetlands impacted to achieve the phosphorus reduction. How much weight was given to the criteria in **Chapter 7** for screening out alternatives? The Corps gives weight to avoiding wetlands/aquatic resource impacts in the evaluation matrix as required under the Section 404(b)(1) Guidelines. USACE - 77

   Additionally, at this time we are unable to determine if the Plan, particularly **Chapters 7, 8, and 9** provides sufficient visibility via scoring, categorizations, quantities to enable us to understand the degree of effect vs. other measures (nutrient, flows, etc.) for achieving

the basic project purpose. The Regulatory Division encourages the SFWMD to provide pre-project assessment of environmental impacts and jurisdictional determinations, and we prefer to be invited to the planning table early on since this is where an alternatives' analysis is most fruitful.

3. **Mitigation.** Under existing law, the Corps requires compensatory mitigation to replace aquatic resource functions unavoidably lost or adversely affected as a result of authorized (permitted) activities. Permittees are responsible for assuring that activity-specific compensatory mitigation projects are implemented successfully and protected over the long term. It should be noted that the system-wide mitigation evaluation developed for the accelerated Comprehensive Everglades Restoration Plan (CERP) projects is specific to the Acceler8 projects. Therefore, the SFWMD is encouraged to develop a Lake Okeechobee watershed mitigation plan for any unavoidable impacts to aquatic resources, particularly for non-CERP projects. USACE - 78

   The Acceler8 system-wide mitigation evaluation was based on anticipated improvements in ecological performance by moving closer to the Natural System Model (NSM) targets in the wetlands of the Water Conservation Areas (WCAs) and Everglades National Park (ENP) and by moving closer to hydrologic and ecological restoration targets identified by RECOVER for Lake Okeechobee, the Caloosahatchee and St. Lucie Estuaries, and Picayune Strand. Although the Plan identifies on **page 7-1** that 90% of the damaging freshwater release events from Lake Okeechobee to the estuaries could be avoided with approximately 1.1 million acre feet of stormwater runoff storage in the watershed, the Corps is concerned that detaining this volume of water, or diverting this amount of water from Lake Okeechobee to areas east and west of Lake Okeechobee may affect the amount of freshwater that would be available for storage and delivery south of Lake Okeechobee for ultimate release to the Greater Everglades. This could in turn affect the projected environmental lift (i.e., mitigation credits) preliminarily assigned to the WCAs and ENP. The Corps is currently re-evaluating the Acceler8 system-wide mitigation evaluation due to lack of implementation of all of the projects and construction delays. Any effects of the Plan on targets in the Greater Everglades should be considered.

4. **Established Mitigation Areas. Page 9-11** of the Plan identifies alternative water storage facilities for retaining stormwater runoff. It should be noted that the Dupuis marsh is an established mitigation area for wetland impacts associated with Florida Department of Transportation projects authorized via Department of the Army permits. As such, use of the Dupuis marsh for water storage or impact to any such established mitigation area should be avoided. USACE - 79

5. **NEPA.** Federal actions (which include federal permits) are required to comply with the National Environmental Policy Act (NEPA). The NEPA evaluation should be initiated and prepared early in the process in order to determine the scope of issues to be addressed and to identify the significant issues related to the action in order to assist in agency planning and decision-making. The Plan includes a number of management measures associated with each of the alternatives, implementation of which would have significant impact on the quality of the human environment. As described on **page 1-9**, implementation of the Plan would decrease total phosphorus loads to Lake Okeechobee USACE - 80

by approximately 409 metric tons per year, would reduce in-lake phosphorus loads by approximately 74 metric tons per year, and would increase the available storage within the Lake Okeechobee Watershed by 900,000 to 1,300,000 acre feet. The Plan has the potential for significant environmental effects and high public interest thus triggering an Environmental Impact Statement (EIS). Although it is recognized that the Plan would be implemented over a number of years depending on funding levels, actions that are related and reasonably foreseeable should be addressed in one NEPA document. It should be recognized that the Everglades Construction Project required Section 404 permits and fell within the EIS requirements of the NEPA; therefore, it is likely that we would follow that example and also proceed with an EIS. The SFWMD is encouraged to coordinate early with the Regulatory Division to discuss permitting and NEPA evaluation options (phased permits, multiple permits tiered, multiple modifications under one permit where components are listed but not yet authorized, etc.).

6. **Other Laws.** All Department of the Army permit decisions are subject to various other Federal laws. Important among those other Federal laws for the Corps regulatory program are compliance with the Endangered Species Act, the National Historic Preservation Act and the Magnuson-Stevens Fisheries Conservation and Management Act involving protection of Essential Fish Habitat. Compliance with each of these authorities often results in additional restrictions to the proposed work and or mitigation measures. Although the Plan correctly identifies the need to avoid adverse impacts to cultural resources, the Plan does not include a discussion of federally protected species. It should be noted that a number of federally listed species are known to be present in the study area. Conversion of improved pasture and natural areas to reservoirs and stormwater treatment area may adversely affect many of these species, particularly the Florida panther, eastern indigo snake, Florida grasshopper sparrow, and Audubon's crested caracara. Early identification of habitat and nest sites for federally protected species is encouraged. Other public interest factors that may be considered by the Corps during the permit process include economics, wetlands, aesthetics, recreation, fish and wildlife, general environmental, flood plain, flood hazards, water supply, conservation, land use, navigation, safety, shore erosion and accretion, and property ownership. USACE - 81

7. Placement of a large ASR well field at the Paradise Run Restoration area will most likely require substantial coordination with FWS and other Federal Partners. USACE - 82

L. Modeling Comments

1. **Section 1.2, Page 1-3, Lines 116-122.** In what P2TP planning condition would the CERP LOWP be placed? USACE - 83

2. **Section 2.0, Page 2-1, Lines 27-35.** Do the statements about best available data and recommendations subject to modification, as additional data and understanding are developed, also apply to the intent to further develop the robustness of the NERSM as relates to this Plan? The application of NERSM as outlined in the report seems more akin to a STELLA routing model than as a successor to the SFWMM (aka 2x2). USACE - 84

3. **Section 2.1.2, Page 2-4, Lines 100-105.** A statement is made that *"The NEEPP is a state plan to provide funding for projects beyond those envisioned in the CERP and thereby augment CERP restoration efforts"*. Are the analyses provided herewith as part of the NEEPP report intended to demonstrate this augmentation or will it be incumbent on the CERP to evaluate this statement through its own regional analyses that include NEEPP features as part of a planning condition? USACE - 85

4. **Section 2.3.3, Page 2-9, Line 327.** What comprises a *"regional annual evaluation"* for the Lake Okeechobee Water Control Structures permit? USACE - 86

5. **Section 3.4, Page 3-24, Lines 928-1013.** Conspicuous in its absence are planning constraints linked to CERP - particularly insuring that plan implementation will not adversely impact requirements of the Programmatic Regulations/Assurances/Savings Clause. Please discuss the implementation of the Plan relative to CERP requirements. USACE - 87

6. **Section 5.1, Page 5-2, Table 5-1.** What is the source of information for the column entitled *"Average Annual P Load (Measured) (Mt)"*? Is this column the multiplicative product of the two adjacent columns? The reader is trying to determine if load or concentration is being measured and at what locations the measured data is being obtained. Since water quality and P reduction are some of the primary objectives of the plan, recommend that more discussion, either in Section 5 or in an Appendix, be provided that explains the P load data collection and calculation methodology. USACE - 88

7. **Section 6.1.1, Page 6-3, Lines 74-77.** Why was history matching not attempted with the NERSM? Is a rigorous validation planned for updated versions of the NERSM that will apparently continue to be used in support of the Plan? USACE - 89

8. **Section 6.1.1.1, Page 6-3, Lines 88-91.** Is the area of the runoff contributing basin being adjusted accordingly (either up or down) based on the corresponding area of the receiving water body as defined by its water stage? Or is it more complex than that? USACE - 90

9. **Section 7.1.2, Page 7-3, Lines 102-103.** How is the statement *"Based on these water quality analyses, the planning team adopted a water quality goal of maximizing storage in the LOW with an upper ceiling of approximately 1.3 million ac-ft"* attributable to the analyses listed in both **Table 7-1** and **Figure 7-1**. Is 1.3 million roughly the average of 990,000 and 1,540,000 ac-ft? Or is 1.3 million tied to the breakpoint of **Figure 7-1**, the latter appearing at around 1.1 million ac-ft? USACE - 91

10. **Appendix B, Section B1.3, Page B-5, Lines 163-167.** Is this *"flow pass-through method"* method indicating that the historical outflows exactly match the monitored or measured historical inflows? Are the inflows in any way lagged in time to produce the outflows? The reader would think that historic information on both the inflow and outflow from the basin or a similar basin would be needed in order to establish an empirical relationship between the two that could be defined in the model. USACE - 92

11. **Appendix B, Section B1.6.1, Page B-8, Line 257-258.** A statement is made that *"In both cases, the comparison showed good correlation in terms of the timing and magnitude of the flows in the two models."* The reader recommends that some of the flow comparisons between the two models (NERSM vs. UKISSWIN and vs. SFWMM) be presented to better appreciate the reasonableness of the NERSM results. USACE - 93

12. **Appendix B, Section B1.0, Page B-1, Lines 41-46.** A statement is made that *"Initial usage of RSM for the LOWCP Phase II is a water budget model. More advanced capabilities of RSM such as the 1-D canal flow routing and 2-D overland flow/groundwater flow calculations were not used in NERSM."* What are some of the capabilities, major theoretical assumptions and limitations anticipated for future NERSM application to the Plan? USACE - 94

M. Editorial Comments

1. **Page 2-8, Line 279-280.** Aren't HGS-6 and S-193 one and the same structure, now commonly referred to as S-193? USACE - 95

2. **Page 2-9, Line 310.** Add spillways or use "spillway gates". USACE - 96

3. **Page 3-11, Line 441.** S-54 should be S-154. USACE - 97

4. **Page 3-11, Line 442.** Place a "to" between "not" and "be". USACE - 98

5. **Page 3-12, Lines 491-492.** Check canal numbers. Should "C-40A" be C-39A or C-41A? USACE - 99

6. **Page 3-13, Line 529.** Should 45 be 450? USACE - 100

7. **Page 3-13, Line 569.** Should the Caloosahatchee Estuary be included also? USACE - 101

8. **Page 3-14, Line 581.** Does the term "C-canals" reference C-23, C-24, C-25 and C-44? If so, recommend being specific with canal numbers since most of the C&SF canal numbers are prefaced with a "C". Also, some readers may not be familiar with the term and it hasn't been defined in the document. USACE - 102

9. **Page 3-21, Figure 3-4.** Title should read "Exceedance". USACE - 103

10. **Page 3-25, Lines 997-998.** Shouldn't "north fork" be capitalized? USACE - 104

11. **Page 5-17, Line 320.** Insert "that" after "basins". USACE - 105

12. **Page 5-23, Line 475.** Delete "was". USACE - 106

13. **Page 6-2, Lines 61 and 63.** Regarding mention of the "St. Lucie reservoir" and "Caloosahatchee reservoir", are these references to the C-44 and C-43 Reservoirs? If so, suggest using the proper name for consistency. USACE - 107

14. **Page 6-4, Line 131.** Last part of the sentence should read, "...future make-up of the overall Plan". USACE - 108

15. **Page 6-5, Line 174.** Insert "in" between "watershed" and "order". USACE - 109

LEWIS, LONGMAN & WALKER, P.A.
ATTORNEYS AT LAW

Reply to: West Palm Beach

December 13, 2007

Tom Teets
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

Re: Lake Okeechobee Watershed Construction Project, Phase II Technical Plan

Dear Tom:

The Seminole Tribe of Florida ("STOF") provides these comments on the Lake Okeechobee Watershed Construction Project, Phase II Technical Plan ("P2TP"). As you know, the STOF has six Reservations, two of which (Brighton and Big Cypress) rely directly upon water from Lake Okeechobee and the Lake Okeechobee Service Area ("LOSA"). Because of this direct connection between the STOF and Lake Okeechobee, the P2TP is important because it will impact the quality and quantity of the water the STOF receives.

Our understanding of the P2TP is that the chosen alternative, (Modified Alternative "4"), best meets the water quality and quantity goals and focuses on reducing the total phosphorous ("TP") load to meet the total maximum daily load ("TMDL") for Lake Okeechobee (140 metric tons / year). After backing out atmospheric deposition TP of 35 tons, the TMDL to be met is 105 metric tons. Based on the last 15 years of TP loading, the total average annual load to the Lake is 514 metric tons. Therefore, 409 tons of load must be reduced through various planning efforts and initiatives. This P2TP is designed to meet that goal, and surpass it, by also reducing in-Lake TP loads by approximately 74 metric tons per year. The Lake Okeechobee Protection Plan ("LOPP") 2007 will meet some of this load target and the P2TP process will "bridge the gap" between the shortfall in the LOPP and the TMDL target (based upon the increase in TP loading over the last 5 years).

While the STOF does not have any significant suggestions in terms of projects to add to the P2TP, or revisions to be made to it, the issues we do raise are directly related to our interests and should be addressed before the P2TP is finalized.

- **Expedite construction.** The STOF would like to emphasize the fact that all of the plans, projects and initiatives surrounding the northern Everglades and Lake Okeechobee appear to grow in cost and scale each year exponentially. We find the P2TP to somewhat organize these various efforts, but we remain concerned that the costs and authorities for all of these projects seem confusing. We are concerned with the public's perception and potential support for these initiatives and feel that the focus must turn to construction and implementation. STOF - 1
- **Meet the 15 Year Load Reduction Average.** We agree with the idea incorporating data from the most recent 5 years to calculate the goal for total phosphorous ("TP") loads. This would seem to result in a more conservative (81 more metric tons of load reductions) approach to meet the TMDL. STOF - 2
- **Nitrogen.** There appears to be no measure for nitrogen reductions documented in the P2TP. STOF - 3
- **Water Storage Features are Uncertain.** The P2TP is premised upon significant volumes of water storage (900,000 acre-feet to 1.3 million acre-feet). While these are more "intermediate" measures that are not supported by a planning effort at this point, these storage lands could impact the Seminole Tribe of Florida's interests in terms of flood control and water supply. The operations of these additional storage lands are also unknown at this time. This could have a direct effect on Everglades Agricultural Area and Lake Okeechobee Service Area where water demands that are not met. Please provide more detail on these P2TP features as soon as practicable. STOF - 4
- **Land Acquisition needs are Uncertain.** Are the lands and alternative water storage facilities listed in Section 9.2.1.2.3 and 9.2.1.3 over and above the 900,000-1.3 million acre-feet of water storage identified as part of the P2TP or are they included in that land acquisition target? Again the operations, proximity to STOF lands and effects on STOF water supply are all aspects that the STOF must receive more detail upon to review. STOF - 5
- **Lake Okeechobee Minimum Flows and Levels and Water Shortage.** Section 3.4.4.2 "Lake Okeechobee Minimum Flows and Levels" references the MFL which is tied to the Supply Side Management ("SSM") line. This presents two questions: 1) is the P2TP and targets therein tied to the new Lake Okeechobee Water Shortage Management ("LOWSM") Plan? 2) Will the MFL be revisited any time in the near future to address this change? STOF - 6
- **Regulation Schedule issues.** Section 6.1.2, the current base condition indicates use of the Water Supply and Environment ("WSE") or current Regulation Schedule for Lake Okeechobee. In our review of the P2TP, we do not see any significant discussion on the Lake Okeechobee Regulation Schedule as a modeling parameter. The STOF would like to see more discussion regarding the relationship between the P2TP and the Lake Okeechobee Regulation Schedule Study (now in its final form). STOF - 7
- **Brighton Reservoir status.** The Brighton Reservoir, discussed in Section 9.2.1.3, appears to have high estimates in terms of acre-feet of storage and the amount of TP load reduction. Additionally, while this facility has been incorporated into the Plan, the STOF would like to make clear that initial planning for the project is very preliminary and this project will not be implemented until at least 2010. STOF - 8

We appreciate the opportunity to comment on the P2TP and look forward to working with you as the Plan moves into the implementation phase. For any questions regarding these comments, please do not hesitate to call myself or Michelle Diffenderfer at Lewis, Longman & Walker, P.A. (561.640.0820).

Sincerely,

Erin L. Deady

ELD/aa

c: Temperence Morgan
Craig Tepper

I:\Client Documents\SEMINOLE\776-001\Corr\Lake Okeechobee Technical Plan Phase II Comment Letter-12-13-07.doc

FLORIDA FARM BUREAU FEDERATION

P.O. BOX 147030, Gainesville, FL 32614-7030 ♦ Telephone 352/378-1321; Fax 352/374-1530
<http://FloridaFarmBureau.org>

December 10, 2007

South Florida Water Management District
Attn: Mr. Armando Ramirez, Lead Project Manager
Northern Everglades Division (MS 7640)
3301 Gun Club Road
West Palm Beach, FL 33406

RE: Public Comment on Lake Okeechobee Watershed Construction Project Phase II Technical Plan Draft

Dear Mr. Ramirez:

We appreciate the opportunity to provide comment to the Lake Okeechobee Watershed Construction Project Phase II Technical Plan Draft (LOWCP). All comments are referenced to line number in the Draft dated November 2007.

Section 1 – Technical Overview

- Line 258 – All initial implementation measures that involve agricultural best management practices (BMPs) and regulatory programs must be cost effective for the landowner. In addition, agricultural operations are much more receptive and responsive to voluntary vs. mandatory practices and programs. FFBF - 1

Section 2 – Introduction

- Line 116 – The Lake Okeechobee Total Maximum Daily Load (TMDL) is based on a five-year rolling average. When is this average revised (annually?) and how does the revised target affect the LOWCP? FFBF - 2
- Lines 169 through 178 – The surface area for Lake Okeechobee is the area within the Herbert Hoover Dike (HHD). The lake is noted to be shallow and therefore this area is not a fixed value. Additionally, the depth figures noted vary with the Lake Okeechobee regulation schedule (LORSS). Should these variations be noted here? FFBF - 3
- Line 196 – Here as in other areas of the document, land use is considered agricultural, natural, and urban. 'Natural area' is not a land use and should not be used. FFBF - 4
- Line 229 – A northerly flow occurred naturally between the area now known as the Everglades Agricultural Area (EAA) and Lake Okeechobee when rainfall was high over the EAA region. It is my understanding when pumping from the EAA into Lake Okeechobee is occurring for flood protection purposes, this is not considered backpumping. Suggest that 'through backpumping' be removed and 'at various times' be added. FFBF - 5
- Lines 147 and 148 – English measurements have been used throughout the document with reference to metric. In these two lines, only metric measurements are displayed. Suggest that these lines be converted to be consistent with the rest of the document. FFBF - 6

- Line 285 – Suggest removal of 'by natural lands and other'. This does not add value to the description. FFBF - 7

Section 3 – Planning Process

- Line 604 – Is this wording verbatim from the 2007 Draft South Florida Environmental Report? If not, suggest adding 'or managed' after 'reduced'. Trials will take place within several months that will incorporate the phosphorus laden sediment into the sandy bottom of the lake using farm tillage equipment. If these trials are successful, the total phosphorus (TP) load in the lake will not actually be reduced but will be managed so that the phosphorus will not suspend in the water. FFBF - 8
- Line 664 – Legacy phosphorus generally refers to phosphorus that has been applied over many years (decades) and has built up in concentration in the upper soil profiles. Is naturally occurring phosphorus levels being considered as legacy phosphorus also? Suggest that naturally occurring phosphorus levels be considered and noted as a contributor to the phosphorus loading to Lake Okeechobee. FFBF - 9
- Line 770 – Suggest removing wording 'water supply demands'. Water supply demands have been relatively constant and have not contributed to the extreme low Lake Okeechobee water levels. Lake level management practices and the droughts of 2002 and 2007 have been the sole contributing factors to the extreme lake level. FFBF - 10
- Lines 777 and 778 – Suggest removing 'although the capacity of each of these canals is relatively small'. The wording does not convey any additional information to the subject and additional obstacles to flow occur further south in the management of Everglades National Park. FFBF - 11
- Lines 784 and 785 – It is my understanding that at times of high rainfall and flooding, Lake Okeechobee did connect with Lake Hicpochee and thus the Caloosahatchee River. FFBF - 12
- Lines 878 and 879 – 'Supply-side management' is a term that is not used anymore. The new term is 'water shortage management band'. FFBF - 13

Section 4 – Interagency Coordination and Public Involvement

- No comments

Section 5 – Water Quality Data Analysis

- Lines 55 through 60 – These land uses need to correspond with land uses as noted in Section 2, line 196. FFBF - 14
- Lines 136 through 138 – See note for lines 55 through 60. FFBF - 15
- Lines 202 through 207 – See note for lines 55 through 60. FFBF - 16
- Lines 242 through 246 – See note for lines 55 through 60. FFBF - 17
- Lines 273 through 278 – See note for lines 55 through 60. FFBF - 18
- Lines 296 and 297 – See note for lines 55 through 60. FFBF - 19
- Lines 329 through 331 – See note for lines 55 through 60. Other land uses should also include 'winter vegetables and rice'. FFBF - 20
- Lines 355 through 357 – See note for lines 55 through 60. FFBF - 21

Section 6 – Water Quantity Data Analysis

- No comments

Section 7 – Formulation of Alternative Plans

- Line 267 – Suggest removing 'many decades of' and adding 'permanent'. The present wording denotes planning to remove the phosphorus from the limestone layer in the future. FFBF - 22

- Line 293 – Suggest removing ‘injection’ and adding ‘application’. Injection is only one of several methods of chemical treatment available. FFBF - 23
- Line 297 – Suggest adding ‘successfully’ between ‘been’ and ‘tested’. FFBF - 24
- Between Line 360 and 361 – Should the phosphorus laden material incorporation trial (discing) be added as separate alternative option? FFBF - 25

Section 8 – Alternative Plan Evaluation and Comparison

- Line 92 – For 8.1.2.1 Lake Okeechobee, when will the data runs using the new LORSS be included in this document? How might this data change the results of the Alternatives? FFBF - 26
- Line 704 – Suggest removing ‘such as BMPs’. The wording denotes skepticism in BMPs. FFBF - 27
- Line 729 – Suggest adding the following sentence after ‘completed’. ‘In the completed projects, MM benefits are being evaluated. FFBF - 28
- Line 774 – Suggest adding new bullet ‘Rainfall volume and frequency’. This adds a lot of uncertainty into MM performance as measured in historical rainfall events. FFBF - 29

Section 9 – Plan Projects and Actions

- Line 163 – Suggest removing ‘voluntary’. They are voluntary but operations in the LOW must either develop and implement BMPs under the guidance of Florida Department of Agriculture and Consumer Services (FDACS) or perform costly sampling to prove that they are compliant. FFBF - 30
- Line 181 – Suggest removing ‘voluntary’. FFBF - 31
- Line 182 – Suggest adding ‘outside of LOW’ after ‘Plans’. FFBF - 32
- Lines 181 through 183 – It should be noted that these programs do require a nutrient management plan which is site specific. FFBF - 33

I am pleased to provide additional information as needed to further explain the public comments noted above.

Sincerely,

Assistant Director
Government and Community Affairs
352-538-0853
charles.shinn@ffbf.org

Rivers Coalition
Save Our River! Stop the Discharges!
P.O. Box 2627, Stuart, FL 34995 772-225-6849

TO: Rick Smith, WRAC Facilitator

FROM: Leon Abood, Chairman Rivers Coalition

DATE: December 10, 2007

RE: Draft Northern Everglades Plan

Dear Mr. Smith:

Members of the Rivers Coalition have reviewed the Draft Northern Everglades Plan and offer the following comments:

The Plan repeatedly errs by stating the St. Lucie Estuary requires 350 cfs base flow of freshwater. The only freshwater base flow required for our estuary is at the Gordy Road structure on 10 Mile Creek, and it is addressed in the IRL Plan. The IRL Plan will also be providing additional freshwater to the estuary in order to bleed down storage areas, providing more freshwater than we want or need, but attempting to balance salinity with local basin waters. RC - 1

Please remove all reference to providing St. Lucie Estuary base flows from the "Northern Everglades", we do not need it, there is no scientific evidence for the Estuary needing it, or in fact ever receiving it from the "Northern Everglades". The less interaction we have with waters from the Northern Everglades Plan the better off we will be. RC - 2

The Plan also errs in stating that the St. Lucie Estuary can tolerate up to 2000 cfs freshwater discharge and up to 3000 cfs when necessary (for management of Lake Okeechobee). This is totally untrue absent qualification regarding the duration of flows. 2000 cfs from S-80 for 10 days turns the estuary fresh to below the Roosevelt Bridge. 2000 cfs for two months kills immobile estuarine species. 3000 cfs is worse. RC - 3

Please be honest enough in the Plan to state the obvious: any discharge from the Northern Everglades Planning area to our Estuary is at best undesirable and at worst, destroys the Estuary. RC - 4

SFWMD persists in planning pieces of the system as though they were independent of one another. Including a small part of the EAA in the "Northern Everglades" Plan provides the EAA the implied drainage and water supply benefits of the Plan but none of the responsibility for conveyance of excess waters south to what remains of the Everglades. RC - 5

The same deliberate error was made in CERP, when project planning from south to north stopped at Lake Okeechobee. At that time the Lake was treated as a "black box" from which water resources were derived, with the excess dumped and wasted to the ocean in immense quantities (more than 850 billion gallons in '05). Now SFWMD is planning the Northern Everglades and Lake O, and the coastal estuaries are the "black box" into which excess water must be dumped.

Any plan for significant water storage and flows in South Florida must include all the parts. Hiding the EAA in the middle of system and then claiming to protect the surrounding natural resources the EAA degrades for its perfect drainage and water supply is absurd. The Lake requires a third major outlet south. Continuing to ignore this imperative dooms the Northern Everglades Plan, and CERP, to failure.

Sincerely,

Leon Abood

Leon Abood, President
On Behalf of the Rivers Coalition Defense Fund Board of Directors

CC: Eric Buermann, Chair
Nicolás J. Gutiérrez, Jr., Esq., Vice-Chair
Michael Collins
Charles J. Dauray
Shannon A. Estenoz
Melissa L. Meeker
Patrick J. Rooney, Jr., Esq.
Harkley R. Thornton
Malcolm S. Wade, Jr.
Senator Ken Pruitt
Representative Gayle Harrell
Representative Richard Macheck
Representative Richard Snyder
Rivers Coalition Defense Fund Board of Directors

Audubon OF FLORIDA

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Audubon@Okeechobee.com

December 13, 2007

Armando Ramirez
South Florida Water Management District
MS 7640
3301 Gun Club Road
West Palm Beach, FL 33406

Dear Mr. Ramirez:

On behalf of Audubon of Florida, I am pleased to submit these comments on the draft "Lake Okeechobee Watershed Construction Project: Phase II Technical Plan" (Plan). The cooperating agencies have done a remarkable job of assembling and analyzing large amounts of data in a very short time period. The conclusions in the report which recommend that much more effort be applied upstream of Lake Okeechobee to restore the lake and its downstream systems, are well founded. This cover letter expresses general thoughts about the Plan, and the following pages contain technical comments about Plan detail.

A - 1

Audubon concurs that 900,000-1.3 million acre-feet of additional storage upstream of Lake Okeechobee will yield significant improvements, keeping lake levels within desirable ranges, reducing harmful estuary releases, in meeting water supply demands, and in reducing phosphorus (P) flows into the lake. These improvements will help not only environmental values, but benefit the economy of south Florida by protecting tourism and ensuring that water supply for our farms and cites is enhanced. Additionally, as projects in Okeechobee's watershed proceed, we see myriad opportunities to improve the health and future prospects for the major lakes of the region, the success of Kissimmee River Restoration, and the ecological integrity of the watershed itself

A - 2

There has been some confusion about how the Management Measures (MM) mentioned in the report relate to actual storage and treatment plans. For example, page 7-17 identifies a 42,000-acre reservoir in the Indian Prairie region that would contain 600,000 acre-feet of water. While storing this much water in this watershed may be a sound goal, this idea has not been examined in detail and it is very unlikely that a single reservoir of this size will be the optimal way to gain the storage. Rather, Audubon would recommend a diverse approach incorporating a combination of reservoirs, low-to-high volume storage projects on private lands, and perhaps wells and upstream storage. Indeed, throughout this, and all watersheds, there is a need for an intensive effort to retrofit private canal and drainage ditch systems with modern water control

structures based on sound hydrologic modeling. Most of the emphasis for MMs tends to be on large structural features and although we have been told verbally that the agencies intend to

include a strong private lands component in this effort, some of our colleagues have concluded (perhaps prematurely) that the agencies' favored strategies are dominated by these large-scale, constructed features. We recommend that the Plan be revised to include more explanation that, except for existing projects, MMs are conceptual, will include much more diverse approaches than large structural fixes, and that integrated MMs will be studied in detail before final project selection. Indeed, all the details in the Plan can be modified as model refinements and planning continue in ever-increasing detail.

We remain concerned that none of the alternatives appear able to reach the phosphorus (P) goal by 2015. In addition to ongoing projects, an increased focus on P source control must to be made. The Mock-Roos reports of 2003 and 2004 indicated that there still are more than 5000 tons of additional P added to the watershed each year, above and beyond our current problems. This clearly is not sustainable and must be addressed if the Northern Everglades Plan is ever to succeed. A - 3

Audubon appreciates the opportunity to work with you on developing and implementing this Plan. We realize the goals identified are daunting, and especially with tax reform and other concerns about funding, full achievement of the Plan will likely take decades. We look forward to implementing components as rapidly as possible and especially to the time when Lake Okeechobee, instead of seemingly getting worse every year, starts showing signs of improvement.

Sincerely,

Paul N. Gray, Ph.D., Science Coordinator
Lake Okeechobee Watershed Program

Technical notes

Suggested Plan refinements for the near future

- There are no plans specified for storage or water quality treatment in the Kissimmee Chain of Lakes region. We support using the KBMOS effort to determine what opportunities for additional storage and treatment are available in the region. Further, the arbitrary constraints on this project dictating that no structural changes or land acquisition be considered, and not including a water quality component (see page 3-10), must officially be removed. The district should take immediate action at the executive or board level to resolve this problem. A - 4
- Phosphorus management measures are calculated only against the average amount of P entering the lake. A more robust evaluation would be to compare P management measures for each individual year of the period of record to determine how measures would function in high and low P years, and to be able to calculate the 5-year running average, to match the way TMDL compliance will be evaluated. A - 5
- The Plan used the WSE regulation schedule for Lake Okeechobee, which is being updated. As soon as possible, the new schedule that the Corps adopts, in conjunction with the new Lake Okeechobee Water Shortage Management rules, should replace WSE in the models. A - 6
- Evaluating salinity envelopes for the St. Lucie River is based on an erroneous target of maintaining at least a 350 cfs flow. The river actually does best with no flow from Lake Okeechobee and evaluations of positive performance should be based on zero flow, not the higher number. A - 7
- The Management Measure constraints identified in Chapter 7 (7.4.1) must be refined to reflect different characteristics of the measures. Many of the constraints listed apply to RaSTAs, but are not constraints to measures such as wetland restoration. Indeed, most of the areas deemed of poor suitability in Figure 7-2 have great potential for wetland restoration, with concomitant benefits. This consideration also applies to the ecologic value constraint, where wetland restoration potential may have very high suitability. A - 8
- An increased ability to move Lake Okeechobee water southward will be essential for this Plan to gain its full potential. A re-evaluation of storage, treatment, and conveyance needs in the EAA must be conducted in light of the findings in this Plan, as well as including future opportunities from projects in the southern parts of the system including Decomp, Mod Waters, and related efforts. A - 9
- Storage estimates in this Plan are based primarily on reducing harmful estuary releases and not on ecologically harmful high water events in the lake (page 7-2). Future refinements should evaluate the lake more carefully. A - 10
- Integrating land use planning with water management planning, as discussed on page 9-8, is excellent and should be a strong feature of future refinements to the extent practicable. A - 11

- A trend analysis of P dynamics in Lake's Istokpoga and Kissimmee should be conducted. P control measures from these lakes are based on average loads over the past 15 years, but we note that P concentrations have roughly doubled from these lakes over this time period (Fig. 1 shows recent Istokpoga trends). If the increasing trend continues, calculations based on the present average will underestimate future needs. A - 12

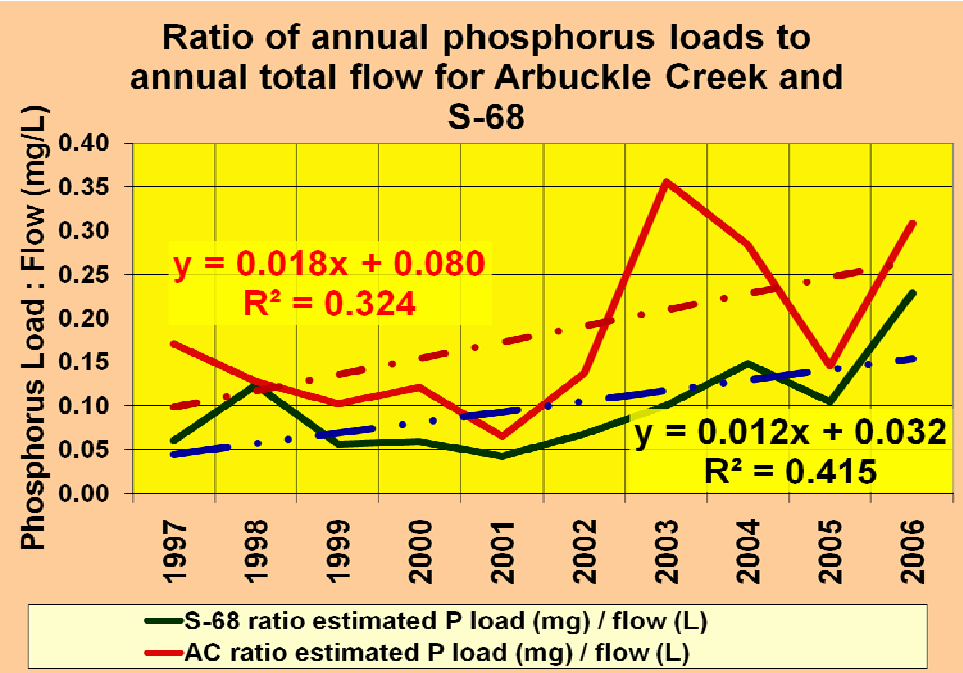

Fig. 1. Phosphorus loads entering, and leaving, Lake Istokpoga have increased over the last decade. If this trend continues, using an "average" phosphorus load for planning Northern Everglades features will underestimate needs. (Courtesy: Clell Ford, Highlands County Lakes Manager, from 2007 North American Lake Management Society talk, "Lake Istokpoga's Link to Lake Okeechobee and Everglades Restoration.")

- Redesigning the function of private lands as part of the water management infrastructure: The entire Okeechobee watershed is latticed with privately-constructed drainage features which were built before regulatory requirements and are indicative of haphazard design and gross overdrainage. Yet, they are the water management infrastructure for the vast majority of the land (and water) in the watershed. Many canals and ditches have no water control structures, or the structures are in disrepair or inoperable. Specifically modeling these canals and ditches, and developing a plan to install modern structures, possibly telemetered in the case of larger canals, should be undertaken by the SFWMD. Raising water levels in these canals only a foot or so could result in hundreds of thousands of acre feet of storage without significantly interfering with current agricultural land uses or future land development potential. A - 13

In addition to raising ground water levels through installation of control structures in private canals, the district should explore the benefits of reflooding wetlands throughout the watershed, compensating landowners for use of their land. Water storage in rehydrated wetlands could be a multiple use that would be compatible on many properties if landowners were given financial reward for participating. A - 14

The Kissimmee Basin is an example of a vast region that was deemed of low suitability for management measures in the Plan. If a combination of the last two approaches were spread widely throughout the basin, this region has the potential to gain comparable overall water storage capacities (and water quality benefits) as deep reservoirs. And possibly do so without the risks, high land acquisition costs, and high construction costs (especially considering recent standards for dam structures) of structural features. A - 15

Other comments:

The East Okeechobee Basin P reductions are projected to attain a load of 8 mt. While we support a number in this range, the Lake Okeechobee Operating Permit allows twice this amount (16.84 mt). The discrepancy may need to be addressed. A - 16

page 1-9, line 277 Rather than state a goal of reducing P inflows by 409 tons, it is preferable to state the goal is "meeting the TMDL." As the period of record changes, the reduction goal will change but the TMDL will not. A - 17

p. 2-6 line 195 I am confused about the definition of improved pasture vs. natural areas. As I understand it, wetlands in improved pastures are counted as natural areas, even though they function as grazing land. This might have importance if runoff values are calculated based on land use in basins and the pastures and wetlands are assigned artificially different P coefficients. Please clarify how these definitions are applied. A - 18

p. 3-7 We strongly support further work on the feasibility of dredging sediments from the lake bottom. We suggest that the agencies include experimental dredging in the Government Cut, along with Eagle Bay Island activities. A - 19

p. 3-9 Kissimmee Headwaters project. It would be good to include the number of acres that will be reflooded in the Headwaters project because it is a large number (~30,000 acres) that the agencies should take credit for. A - 20

p. 3-9 and 3-10. The Kissimmee Chain Long Term Management Plan and the Kissimmee Basin Modeling and Operation Study are good projects that have had artificial, and crippling, restrictions placed on them. As noted in lines 409-413, there is no water quality component and no structural component I the KBMOS. These restrictions must officially be removed or the projects cannot possibly succeed as part of a successful Okeechobee restoration effort. A - 21

3-14 lines 593-596 contain an excellent narrative on how site-specific projects not only improve that site, but also improve regional conditions. This consideration merits more emphasis as the various efforts move forward. A - 22

3-19 The extreme low lake stages discussion should include a narrative on the peat soils of the southern islands that are home to the endangered Okeechobee Gourd and are at risk of subsidence from oxidation and/or fire during low water, thereby threatening the gourd. A - 23

3-19 lines 770-772 say climate has the most important factor in recent record levels. The 1955-56 drought was as dry as present, but the lake only dropped to 10.25 (higher than it is today). It must be noted that drainage has helped make this drought worse. A - 24

3-21 as noted earlier, the goal for the St. Lucie flow should be zero, not a minimum of 350 cfs A - 25

5-7 This section notes that the Kissimmee Chain lakes are absorbing P and improvements in upstream inflows is unlikely to show substantial improvement in outflows. This argument omits the conclusions of White et al that these lakes might soon be P saturated, which would tend to increase their P outflows significantly. P saturation must be avoided if Okeechobee's P TMDL is to be met and sustained, and if the Kissimmee River, and lakes themselves, are to be protected from water quality problems. We recommend a distinct discussion of the future water quality in the region be included (all planning studies try to predict future changes in population, water demand etc. to meet those challenges, why not predict future P changes?). A - 26

5-8 Line 143 states an intention to use the restored Kissimmee River as a P treatment facility. This will lead to P saturation, seriously impairing the river, and creating increased P flows to Lake Okeechobee. A specific component of this Plan should be to prevent this from happening. A - 27

5-13 The same concerns discussed for changing P levels and future saturation on the Kissimmee Chain and River apply to Istokpoga (Fig. 1). Planning to use these lakes to treat P in the short term will cause more severe, and expensive, P problems in the long term. The Plan must explicitly develop strategies to prevent P saturation. A - 28

5-23 We concur with using 1991-2005 as the period of record for current analysis. It has a mix of "drier" years from the early 1990s, the drought of 2001, plus volatile wet years since 1995, giving a well-rounded range of P conditions to consider. A - 29

5-21 Figure 5-11 is an interesting comparison of P amounts compared with flow rates, but the Y-axis units should changed to metric tons so it can be compared with actually meeting the TMDL (and not the % of total P load, which is an "accident of history" unrelated to legal mandates of restoration). Having the Y-axis as it is, leads to the novel conclusion that the 55 tons of P from Fisheating Creek are more of a threat to Okeechobee's TMDL than the 91 tons of P coming from the Kissimmee Chain. Such a conclusion is erroneous. While targeting Fisheating Creek and Indian Prairie (p. 5-24) may be efficient, the higher-loads from the Kissimmee Chain must receive more reduction, and attention. A - 30

6-1 We note that a 1970-2005 period of record has about two-thirds of the years from a drier climate pattern than we appear to have been in since 1995. Although not a fatal flaw, it must be remembered that model predictions might tend to be skewed toward drier forecasts than upcoming years might yield. A - 31

7-4 section 7.3 This is a place where the Plan might benefit from an expanded explanation of wetland restoration-type MMs and their role in future plans A - 32

7-10 Lines 403-405 consider evaporation from reservoirs a negative. We note that in most years too much water enters Lake Okeechobee to be handled without some harm, therefore in most years evaporation from reservoirs should be considered beneficial. A - 33

7-12 Ecologic value—lands with a high EVS (>4) actually can be highly suitable for wetland restoration, not "low suitability" as concluded here. We understand that restoring very low value lands (e.g., a parking lot would score 0) leaves the most room for improvement (boost the score), but restoring partially intact systems has a higher likeyhood of ending with an appropriate hydrology, high biodiversity and other desirable characteristics. This is a MM that must be scored with more caveats to work appropriately. A - 34

8-23 The decreased water supply cutbacks predicted for the 2001 drought is encouraging. A - 35

9-3 This has a good discussion of the mix of measures that will be considered and similar text could be added to chapter 7 and other key places A - 36

Preliminary Comments December 13, 2007

Definition of BMP

Are you having a definition section for the report? If not, perhaps you could add the BMP definition to Section 3.1.3.2 which is the DACS Section. This is not the first reference to BMP so I am not sure if that fits in context. PLF - 1

> "Best Management Practice" (BMP) means a practice of combination of practices determined by the coordinating agencies, based on research, field-testing, and expert review, to be the most effective and practicable on-location means, including economics and technical considerations for improving water quality in agricultural and urban discharges.

Extreme Low Stage

The Revised Lake Okeechobee Schedule will impact all the model runs that were created on the prior WSE schedule. Have you had the chance to update the report based on the Revised Schedule? I honestly do not have a suggestion for language at this point other than to include a caveat in Section 8.1.2.1.1. Please notes that my clients have recommended that the New Revised Schedule not be implemented until the impacts on water shortage is completed. If you have not included the Revised Schedule then, how about considering a note for this section: PLF - 2

> Please note that this Report was prepared using WSE. The Corps has published a Revised Regulation Schedule. This schedule will result in a lower lake stage which could increase the frequency of the undesirable extreme low stage and decrease the frequency of the undesirable extreme high stage. The impact of this schedule on this Plan is still under evaluation.

In addition, the regulation schedules for the Upper Chain of Lakes will need to be reviewed and linked to this schedule.

Overall Policy Direction

Florida has a public policy with respect to agricultural production. It is found in Section 604.001 F.S. and I have provided a cut and paste for your review below. Perhaps a reference after section 9.2.1.2.3 would be appropriate. I need to request input from DACS and the other agricultural representatives on the final language. PLF - 3

Section 9.2.1.2.4

Implementation of this Plan will require coordination with Florida's farmers and growers. This Plan is sensitive to the public policy of the state to achieve and maintain agricultural commodities and the statewide agricultural industry. As the specific programs are developed, it is important that these programs do not cause agricultural production to become inefficient or unprofitable.

Cost Share

PLF - 4

In the past the Federal government has been unwilling to cost share projects for water quality or water supply as they have indicated these are state functions. It might be beneficial to obtain support of federal cost-sharing assistance in order to implement the Plan.

****

604.001 Public policy with respect to agricultural production.--The Legislature declares that:

(1) It is the public policy of this state and the purpose of this act to achieve and maintain the production of agricultural commodities for food and fiber as an essential element for the survival of mankind.

(2) The production of agricultural commodities in this state is a large and basic industry that is important to the health and welfare of the people and to the economy of the state.

(3) A sound agricultural industry in this state requires the efficient and profitable use of water and energy and many other natural, commercial, and industrial resources.

(4) The efficient and profitable use of energy and water resources in agricultural production in this state is often difficult to achieve because of problems that are not well known or fully understood by the people, such as weather, climatic changes, and market conditions.

(5) It is important to the health and welfare of the people of this state and to the economy of the state that additional problems are not created for growers and ranchers engaged in the Florida agricultural industry by laws and regulations that cause, or tend to cause, agricultural production to become inefficient or unprofitable.

(6) The laws and regulations that have caused problems for agricultural production in this state have been due primarily to a lack of adequate and informed consideration of the adverse impact such laws and regulations would have on efficient and profitable agricultural production in this state.

Comments on "Lake Okeechobee Watershed 'Construction Project' Phase II Technical Overview November 2007" by Ted Guy to Tom Teets:

Comments are numbered by page no. and line no. they refer to.

1-1 /9 What about the Kissimmee watershed? Shouldn't that be included? TG - 1

1-2 /120 I don't understand what the last sentence on this page means. You may need to better explain the rationale. TG - 2

1-3 / (line nos. missing) Table 1-2: TG - 3

The assumptions in the St. Lucie Estuary section that a mean monthly flow of <350 cfs is advisable and that a mean monthly flow of 3,000 cfs should be the upper limit (if I understand the table correctly) are erroneous. The St. Lucie Estuary gets enough fresh water from its own watershed and doesn't want a mean monthly flow of 350 cfs in addition. And anything over 2,000 cfs for as long as a month is very damaging to the estuary. Please reduce these assumptions drastically.

1-5 /141 I object to selecting Alt 4. Alt 2 is obviously better for the Lake and the estuaries. Using phosphorous load reduction as the over riding factor ignores nitrogen that severely affects the estuaries, and other pollutants. Remember that too much fresh water is in itself a pollutant, and that 80,000 metric tons of Total Suspended Solids as we have received in at least one of the years 1995-2005 is devasting to seagrass, oysters and other species. Your plan MUST do better than that! And the only way it can is to incorporate a third outlet for the Lake to the South, to the Everglades, where the excess water in wet years used to go, as Nature intended. Even though the "Northern Everglades" legislation didn't mention a South outlet, your plan should at least recommend it. *Without that, you can't save the Everglades or the Estuaries, no matter what else you do.* TG - 4

1-4 /179 The "…more ecologically desirable range of …" needs explanation as to why it's more ecologically desirable. TG - 5

1-8 /258 Agricultural and Urban BMPs have not proven very successful without a lot more regulatory teeth. How are you going to enforce them? TG - 6

1-9 /269-272 The authorizing legislation (373.4595 F.S.) does not appear to make such goals mandatory. The District should fill that gap by making them mandatory in its rule making. TG - 7

1-9 /283 The range of 900,000 to 1,300,000 acre feet is enormous and vague. Can't we pin down the needed storage more narrowly? TG - 8

1-11 /340 The first line "…a general framework and road map…" needs to be also said right up front on page 1-1, section 1.0. TG - 9

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gladesfoundation	**Subject:** **Comments on Lake Okeechobee Phase II Plan**
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Comments on
Lake Okeechobee Watershed Construction Project; Phase II Technical Plan
dated November 2007

Submitted by

Thomas Van Lent, Ph.D.
Betty Grizzle, D. Env
The Everglades Foundation
18001 Old Cutler Road, Suite 625
Palmetto Bay, FL 33157
305-251-0001

Wednesday, December 12, 2007

1. page 1-1 Section 1.1 line 23

EF - 1

The inclusion of the 1991 to 2000 time frame and the calculation of needed reduction is confusing, as the report uses the 1991-2005 loading, described in the next paragraph, for estimating the target reduction. It merely begs the question of what happens, as is likely, that the phosphorus loading trends continue to increase, and the necessary reductions increase over time. Will the plan be modified to account for future increases? It is not until page 1-11 line 357 that this question is answered.

2. page 1-7 Section 1.5 line 240

EF - 2

The plan implementation in stages is overly vague. This section could be improved by assigning time horizons to the initial, mid-term, and long-term implementation steps. Moreover, the expected phosphorous reductions and storage gains should be incorporated into Tables 1-3 through 1-5 to show the expected benefits at each step. It is essential that the plan be a clear roadmap for how and when the State of Florida intends to reach the loading target of 105 metric tonnes.

3. page 1-9 Section 1.7 line 288

EF - 3

The previous section, *Plan Performance*, states that the proposed plan will remove 409 metric tonnes of phosphorus and deliver between 900,000 and 1.3 million acre-

ft of storage. This section provides cost estimates for the "initial implementation". The document should clearly describe the implementation steps, the cost of each step, and the expected phosphorus reduction and storage gain.

What we would like to see is a chart that identifies the phosphorus-reducing component (BMP, STA, etc), the expected reduction, the timeline for implementation, and the cost.

4. page 1-9 Section 1.7 line 296 EF - 4

There are clearly issues over federal funding for water quality cleanup; the memorandum of May 25, 2007 from Gen. Riley to the Asst. Sec. for Civil Works makes it clear that the Corps does not support cost-sharing to meet basic State water quality standards. CERP was developed assuming that the water would meet water quality standards, and there is no commitment from the federal government to fund projects or project sub-components that are designed solely to meet those standards. Therefore, cost estimates for the water quality components need to be broken out. It would be reasonable, however, to state that the State of Florida will be asking for and expecting a federal cost-sharing to implement the project.

5. Page 1-10, Line 307 EF - 5

Cost estimates (non-CERP) should be identified for each phase and each feature of the selected Plan. This information can then be used to identify whether recommended elements such as water storage configurations are cost-effective relative to location, size, current land use, etc.

6. page 1-11 Section 1.8 line 357 EF - 6

The promise is that the plan will be revised as conditions change, and the implication from the references to urbanization is that they will deteriorate. Some specifics about expected frequency of review, or mechanisms for review would be helpful. Moreover, mentioning that the State plans on continuing or even expanding their excellent monitoring program to detect that expected deterioration would be useful.

7. page 2-1 Section 2 EF - 7

As a general comment, this section is very well done. Legislative mandates are spelled out, clear goals established, the major basin characteristics established, and the on-going programs listed. Figure 2-2 was actually helpful in sorting out the alphabet soup of programs, though oddly worrying.

8. Page 2-6, Line 196

EF - 8

Natural areas are identified as the second most predominant land use type in the watershed (38% or 1.3 million acres). The wetland benefits (water quality treatment, flood control benefits, water supply benefits, and ecological function) and the connectivity on the landscape must be an important consideration in this planning effort. For example, the "dry" prairie communities located in this watershed represent one of the biologically richest grasslands in the world, and provide an important landscape matrix for a unique assortment of birds, including the endangered Florida grasshopper sparrow and Audubon's crested caracara, and other wildlife such as the gopher tortoise. (see Proceedings of the Florida Dry Prairie Conference, Reed Noss, editor, 2006)

9. Section 3.0, Planning Process

EF - 9

General comment on Lake Stage Management related to this planning process:

Relative to proposed lake restoration management (with respect to nutrients) in the context of alternative stable states (hysteresis) is the difference between "control variables," or what Scheffer (*Ecology of Shallow Lakes*, Kluwer Academic Publishers, 2004) calls external conditioning factors, versus systems properties. Changes in the stability properties of a lake (what causes a movement between alternative equilibria) represents a function of external nutrient loading (a conditioning factor), but concentrations of nutrients *within a lake* is a systems properties which is more strongly influenced by the biological features of the lake's ecosystem (Scheffer 2004). Thus, in order to shift to a *macrophyte-dominated state* using nutrient management techniques, nutrient levels must be reduced to a point where the algal biomass is once again at the critical turbidity level for the macrophyte community. The likelihood that the clear, vegetated state is stable therefore decreases with high nutrient levels. This conclusion seems to be confirmed with the high TP levels in Lake Okeechobee over the past few years and the inability of the lake to achieve a *stable* clear, vegetated state, even after the "recovery" of SAV after the 2000/2001 drought.

Further, this alternative vegetated state is unlikely to be stable if the in-lake water total-P concentration is above <u>100 ppb</u>, especially when this condition is present in large lakes (Scheffer 2004). Reducing nutrient loading or implementing other external measures in some highly eutrophic lakes in an attempt to return to a clear, vegetated state will thus have limited effect without additional measures, especially for shallow lakes. Significant changes in trophic structures also occur with total-P levels above 100 ppb. More specifically, the percent of piscivorous fish species decreases significantly as well as the ratio of zooplankton to phytoplankton

biomass, thus prompting a shift in the top-down control of phytoplankton by zooplankton (Scheffer 2004).

Based on the basic properties of hysteresis and observations from the dynamics of shallow lakes, a hysteresis lake system responds differently to management measures than a non-hysteresis lake. Thus, attempts to control a shallow lake's system properties (e.g., nutrient cycling) by regulating water levels (an external conditioning factor) will have limited results in returning to the clear, vegetated alternative state *until the internal nutrient loading is addressed*. By the same argument, controlling external nutrient loading into a lake will not by itself result in a stable alternative vegetated state. This is a problem that must be addressed for Lake Okeechobee given the current elevated total-P levels and the propensity for resuspension of highly organic sediments that have accumulated in the lake. We recommend that *effective* management options to address this issue receive equal footing as the management options identified to address phosphorus loading into the lake.

10. Page 5-24, Line 497 or Table 5-5 LOPP TP load reduction estimates EF - 10

Based on the activities outlined in the 2007 South Florida Environmental Report (SFWMD), we estimate that "current activities" reduce TP loads by only 60.1 metric tons per year (the LOWP has the potential to provide an additional 47 to 74 metric tons per year). Please provide a clear break-down of the "current activities" listed in Table 5-5 and the TP load reduction for each activity. Also, this table should be consistent with the management measures outlined in Table 7-9 and Table 8-2 relative to estimated load reduction; however, the latter do not identify estimated amounts for each activity, "tool," or "strategy" as summarized in Table 5-5.

11. page 6-1 Section 6 EF - 11

The development and application of a Northern Everglades simulation model is a sound basis for analysis, and adds much to the credibility of analysis of the alternatives. Appendix B is very complete, and provides an extremely clear picture of the proposed alternatives.

12. page 7-1 Section 7.1.2 line 32 EF - 12

The use of the SFWMM to establish a water storage target seems a reasonable choice, as it should assure compatibility with the CERP plan. However, use of Figure 7-1 to establish the storage goal is a major departure from CERP, and an entirely unsatisfactory procedure to establish the storage goal. Our concerns are as follows.

First, a breakpoint in an exceedance curve that has a variable temporal definition has no easily discernable physical, statistical, or economic interpretation. If the

data is simply replotted on probability paper, for example, the breakpoint will likely disappear. To assert that this breakpoint represents some optimal design condition is simply not apparent.

Second, the approach does not take into account the effects of the remaining discharges on the estuaries. The implied objective is that the reservoirs will be sized to eliminate 90% of the damaging discharges. However, if the remaining 10% are of such magnitude and frequency that they preclude the sustained ecological integrity of the estuaries, then this approach does not result in estuary recovery.

Third, the effect of the temporal sequence of the harmful events is not considered, and this could significantly decrease the expected benefit. The analysis essentially assumes that the reservoirs would be empty when the 10% exceedance event occurs. This is highly unlikely. For example, back-to-back 500,000 acre-ft events, much lower than the design condition, could consume nearly all available storage, and result in higher than expected estuarine discharges. However, the model described in Appendix B is not capable of determining the expected estuarine releases, so project benefits cannot be estimated.

Fourth, the methodology is a significant departure from that used in CERP. As a result, it is difficult to compare the resultant project storage sizes from CERP into this analysis. For example, the "Yellow Book" CERP had almost 5.4 million acre-ft of ASR storage in the Lake Okeechobee ASR and C-43 ASR, and surface storage north of the Lake as well. This analysis suggests that only 1.3 million acre-ft total storage is needed. This is not consistent with the analysis done in CERP, and its promulgation as the storage target could undermine the achievement of the expected CERP benefits.

13. page 7-14 Section 7.4.4 line 566 EF - 13

We can understand the necessity of a spreadsheet model approach for estimating load reductions given the time constraints. However, it is not possible for the reader to verify the results in Tables 7-4 through 7-7. We would recommend an appendix in similar detail as Appendix B that describes the model, with particular attention to specifying the expected load reductions for each component of the alternative. These could be reported in Table 7-9 for increased clarity. This would also improve the readers' ability to cross-reference the expected TP uptake with the SFWMD's other publications, such as Table 10.6 on page 10-25 of the *Draft 2007 South Florida Environmental Report.*

14. page 8-2 Section 8.1.1 line 41 EF - 14

Tables 8-1 and 8-2 are the most important table in the entire document, since it describes the expected load reduction from each component. This table cannot be understood or verified without a component-by-component breakdown of load reduction that should have been included in Figure 7-9.

15. page 9-5 Section 9.2.1.1.1.1 line 105 EF - 15

The ERP program uses the Harper Methodology to determine required water quality mitigation for wetland destruction. This methodology is decidedly skewed to minimize mitigation and discount the value of wetlands. We do not expect that the SFWMD will be able to simultaneously use the Harper Methodology and decrease phosphorus loadings through the ERP program.

16. page 9-11 Section 9.2.1.3 line 348 EF - 16

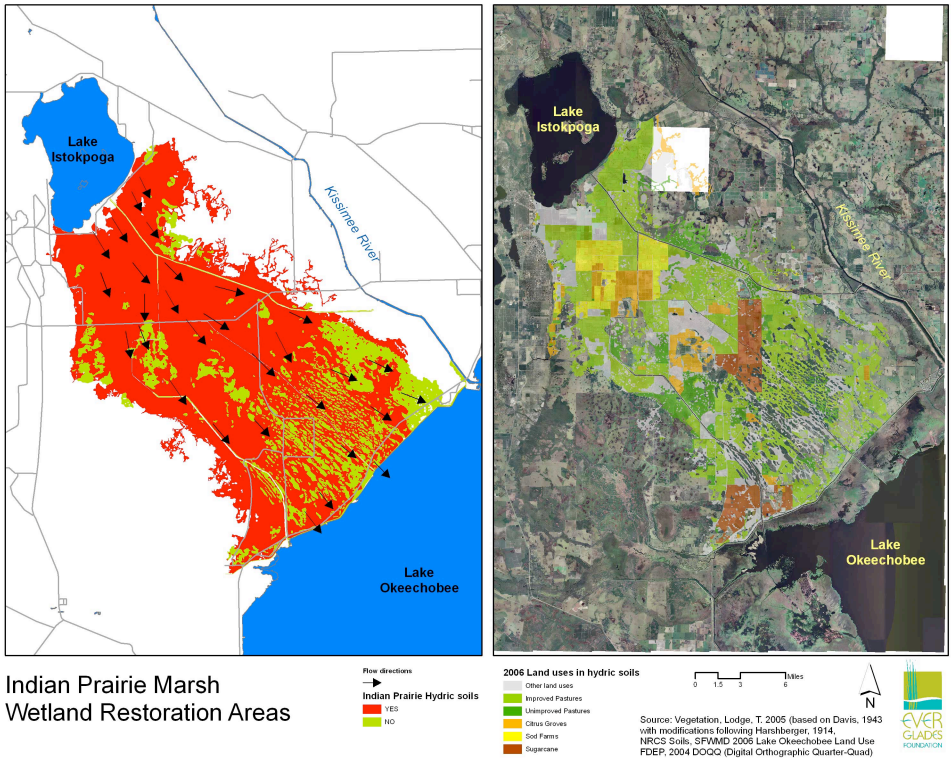
We are very pleased to see the inclusion of alternative water storage facilities as an element of this plan. These have the opportunity to provide cost-effect storage, as the possibility of ecological benefits. The quantified storage benefit is 83, 532 acre-ft. It is likely that other areas in the basin are also good candidates, and this plan should include an effort to identify other potential areas. Also, increasing the spatial extent of wetlands through wetland restoration could also be considered alternative water storage, and included as such.

17. page 9-14 Section 9.2.2.1 line 519 EF - 17

Table 9-2 states that two of the components, Kissimmee Storage and Lake Istokpoga storage, are already elements of the CERP-LOW project. However, the only available public document is the December 2004 Project report. This report does not contain a recommended plan. Moreover, we cannot match a reservoir size of 79,560 acre-ft to the Istokpoga locations in Section 2 of that report. Lastly, the project schedule does not have a draft PIR until December, 2008. This table would more correctly read that it is being considered as part of the CERP-LOW project.

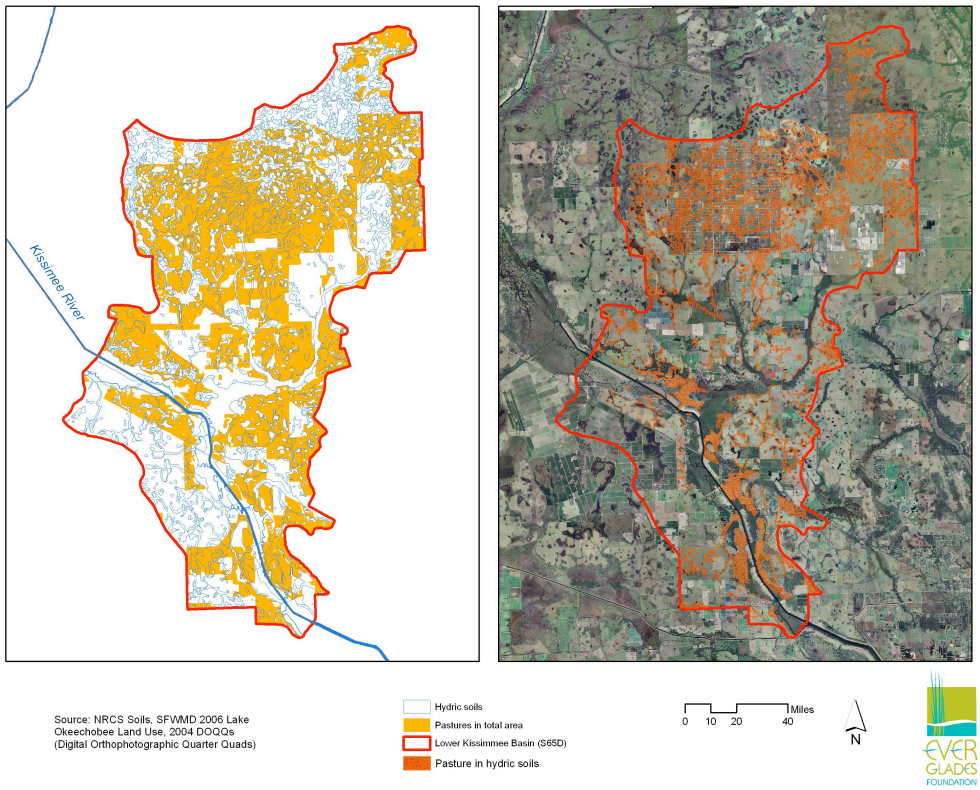
page 9-18 Section 9.2.3.3 line 607 EF - 18

We are extremely pleased to see that Wetland Restoration is included in this plan. This will be an important step in improving the overall ecological function of the basin, rather than sacrificing the basin for the sole benefit of other areas. However, we would like to see an identification of other areas that could greatly improve overall basin ecological function. We suggest that the S-65D basin and the Lake Istokpoga basin are good candidates for restoration, as shown in the figures below.



Indian Prairie Marsh
Wetland Restoration Areas

Expansion of viable wetlands in the Indian Prairie marsh would greatly improve the ecological function of the basin and the Lake.



S-65D also has significant possibilities for wetland restoration, improving storage and ecological function.

The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy in Florida
222 S. Westmonte Drive Suite 500
Altamonte Springs, FL 32714

tel [407] 682.3664
fax [407] 682.3077
nature.org/florida

December 12, 2007

Mr. Armando Ramirez
c/o South Florida Water Management District, MS 7640
3301 Gun Club Road
West Palm Beach, Florida

Subject: The Nature Conservancy comment on the Lake Okeechobee Water Construction Project Phase II Technical Plan Draft

Dear Mr. Ramirez:

Thank you for the opportunity to comment on the Lake Okeechobee Water Construction Project Phase II Technical Plan Draft (Plan).

The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth. Throughout Florida, The Nature Conservancy works closely with federal, state and local governments, businesses, the conservation community, and private individuals to protect biodiversity in a science-based, collaborative manner.

Because the Plan was drafted in response to a legislative mandate under a tight deadline, it understandably lacks specificity on location, design, costs, etc., of the various management measures which make it hard to analyze the overall project. It is critical that the South Florida Water Management District continue to seek input on detailed plans with enough time for review as the process moves forward. The Nature Conservancy looks forward to continued partnership with the District on these restoration efforts.

The Nature Conservancy strongly supports the water quality and water quantity goals set forth in the Plan. Our written comments will focus on three general themes within the Plan:

1. Actions to improve water storage and phosphorus reduction should not degrade existing high-quality upland or wetland habitat.
2. The District should employ restoration strategies to maximize the ability of natural systems to store and clean water.
3. Planning now for future growth is essential for Everglades restoration.

Issue 1: Actions to improve water storage and phosphorus reduction should not degrade existing high-quality upland or wetland habitat. NC - 1

Although we cannot be certain from the information currently contained in the District's Plan, it appears that the proposed Alternative Water Storage Facilities (AWSF's) will likely inundate important upland habitats on several significant public and private lands in the region. While The Nature Conservancy strongly supports the ecological restoration of drained wetland habitats (e.g., depression marsh, floodplain swamps and marshes, sloughs and wet prairies) throughout the region as part of a natural water storage scenario, we do not support — in fact we vigorously object to — the inundation of intact and ecologically significant upland habitats in the Northern Everglades.

From the information provided in the draft Plan, as well as our on-the-ground knowledge of the resources and habitats in the region, it appears that such significant — and often globally imperiled and/or rare — natural communities as dry prairie, mesic flatwoods (some of which are longleaf pine-dominated, while others may support a cutthroat grass groundcover), scrub (possibly both oak- and sand pine-dominated) and prairie hammocks may be flooded on a temporary or permanent basis through the potential management measures in the Plan. Such inundation will likely seriously degrade, if not entirely destroy, the important ecological characteristics, species composition and community structure of these upland natural community types. Similarly, inundating wetland habitats beyond the depths and durations they would experience naturally could lead to unacceptable degradation of natural wetland communities and alteration of community structure and composition. These natural communities are important from a biodiversity conservation standpoint for the myriad ecosystem services they provide (e.g., food webs, nutrient cycling, oxygen production, carbon sequestration, natural flood control), for the recreational opportunities they afford, and for many other attributes important to Floridians.

Plans to inundate — either through engineered water storage or the construction of reservoirs — lands within the Avon Park Air Force Range, the Sumica tract, Kissimmee Prairie Preserve State Park, portions of the Fisheating Creek watershed and Nicodemus Slough, among others, are of great concern to The Nature Conservancy. Some of these lands were purchased with state conservation dollars (with some matched by local funding) and represent highly prized natural areas that serve the public with a variety of important functions. If such plans as proposed under the draft Plan will flood upland habitats on these tracts, The Nature Conservancy herein expresses serious reservations about the net and/or long-term ecological benefits in the face of the potential degradation or loss of these important — and increasingly scarce — natural upland and wetland habitat resources.

As a general rule, and understanding the need to site reservoirs near existing conveyance systems, reservoirs should not impact high quality natural habitats. The Plan should address costs of mitigation for negative impacts to wetland or upland habitats as required in the legislation.

Issue 2: The District and restoration partners should employ restoration strategies to maximize the ability of natural systems to store and clean water. NC - 2

Currently there exists a number of potential opportunities within the Upper Kissimmee Chain of Lakes (UKCOL) region that should be evaluated for additional water storage and treatment, as well as habitat restoration potential. Much of the discussion to date has not appeared to consider storage options within the lakes themselves. Increasing lake levels to the extent possible, recognizing the constraints caused by the existing development footprint, would provide additional habitat along lakeshores and adjacent lakeside marshes and would also provide additional water storage.

Many of the historic flow-ways between the lakes have been canalized, drained and converted to agricultural uses. Restoring the hydrology of these flow-ways and subsequently the marsh habitat will provide additional water storage, remove nutrients and recover a portion of the habitat that historically occurred in the UKCOL. Examples include flow-ways between Lake Tohopekaliga and Lake Cypress, Lake Cypress and Lake Hatchineha, Gardner-Cobb marsh, and Lake Hatchineha and Lake Kissimmee. There may also exist opportunities for reservoirs or more structural based options on fallow agricultural lands around Lake Tohopekaliga and other areas within the UKCOL.

Quantifying benefits of natural wetland storage

It is possible to quantify the benefits of water storage on natural lands. Although the plan does include five wetland restoration projects, none of the projects have a quantified water storage or total phosphorus reduction benefit and so cannot be compared with other projects. Such quantification is possible and should be considered. A study conducted in 2003 by Hazen & Sawyer for The Nature Conservancy compared costs and benefits of restoring “isolated” wetlands on ranchlands in the Lake Okeechobee watershed with other alternatives identified by the District for reducing phosphorus loads entering the lake, using same methodology employed in the 2002 District evaluation

"Natural Resource Analysis of Lake Okeechobee Phosphorus Management Strategies."

- Overall, the wetland restoration alternative implemented on 100,000-200,000 acres of pasture ranked sixth out of the 11 alternatives, with the highest contributions to its total score coming from the criteria for cost per pound of phosphorus removed and the phosphorus concentration leaving the site.

- This alternative also ranked near the best in potential for enhancing wildlife habitat, specifically the short-hydroperiod wetland habitat which accounts for much of the historic wetland loss in this watershed.

- When implemented on 300,000 acres of pasture land, the ranking jumps to third overall, and if implemented at 400,000 acres, it ranks highest of all alternatives. These results demonstrate the potential for natural wetland restoration as a viable, cost-effective means of reducing phosphorus loads into Lake Okeechobee, while also restoring natural water retention and critical wetland habitat to the landscape.

A more limited modeling study conducted for the Conservancy by the University of Florida in the Fisheating Creek watershed, concluded that restoration of natural wetlands in strategic locations within the basin could result in decreases of 40,000 to 70,000 acre-feet of runoff entering Lake Okeechobee annually. Much of this decrease would be attributed to increased water storage in and evaporation from restored wetlands.

Given the importance of natural wetland restoration, the Plan should emphasize Management Measures relating to the Wetlands Reserve Program (WRP) and the Farm and Ranch Lands Protection Program (FRPP). WRP is a voluntary federal Farm Bill program that acquires conservation easements and conducts wetland restoration. The program is successful and well-funded yet is not mentioned as a potential management measure. The application of WRP in the project area has extraordinary potential to increase storage and reduce phosphorus by natural means.

FRPP is listed as Potential Performance Measure #91 in the context of a federal, state, and private partnership. As noted, FRPP is a popular program and several landowners in the project area have a current interest in enrolling. As an additional benefit, short term contract programs such as the Florida Ranchlands Environmental Services Project (FRESP) will work much more effectively on land that is permanently protected. In other words, long term or permanent FRESP contracts (or other restoration alternatives) can be negotiated at the same time as the FRPP easements, thereby making the two programs, working together, an effective combination of land protection and ecosystem services on private lands. This management measure also complements WRP as a strategy to accomplish the 90,000 acre goal of the Natural Lands Report (discussed below). Given the current real estate window of opportunity, this performance measure should be expanded in scope, elevated in importance and provided a measure of funding.

Issue 3: Planning now for future growth is essential for Everglades restoration. NC - 3

Time is of the essence in evaluating and ensuring that current options remain possible. The UKCOL is experiencing some of the most intense development pressure in the state of Florida. The population of Osceola County is projected to double by the year 2025, and similar growth patterns are projected for Polk County. Urban and suburban development, previously contained within the Orlando/Kissimmee/St. Cloud metropolitan areas and along the U.S. Hwy 27 corridor in Polk County, is now expanding onto agricultural lands in the heart of the Kissimmee Chain of Lakes Watershed and the Greater Everglades Ecosystem. Currently there are 32 Developments of Regional Impact (DRI) at some point in the approval process in the UKCOL watershed. This does not include sub-DRI level developments or developments with pre-DRI vesting. Accompanying this rapid development are several new transportation corridor proposals at various stages in the evaluation and approval processes. These proposed corridors have the potential to further open up the area for future development and significantly limit any opportunities for restoration and water storage within the UKCOL.

The Nature Conservancy joined with a number of other conservation organizations to send a letter to Governor Crist requesting that he appoint a UKCOL task force to address water quality and quantity issues associated with the rapid growth of that region.

Use all planning tools available

Following the mandate of the Northern Everglades legislation (see F.S. 373.4595 (1) (l) and (m), the Technical Plan purports to: identify and compile "all known management measures that could be used to achieve planning objectives" (1.2); encompass and build upon "all other ongoing and planned efforts in the watershed that support Lake Okeechobee restoration including the Comprehensive Everglades Restoration Plan…" (1.3); and "…allow for equitable consideration of all reasonable alternatives; no feasible alternative could be arbitrarily eliminated without being evaluated" (7.2).

It is unfortunate that the Plan overlooks the extensive study undertaken by the South Florida Ecosystem Restoration Task Force that culminated in its February 2006 Natural Lands Report. This report was requested in May 2005 by the U.S. House of Representatives Appropriations Subcommittee on the Interior and Environment to identify and prioritize lands for acquisition necessary to achieve natural system restoration goals. One of the four watersheds identified in the Report is the Lake Okeechobee Watershed, the very project area of the Plan.

The overlooked but necessary tie-in between the Plan and the Natural Lands Report is best expressed in the preamble to the Natural Lands Report, which states:

> *"Two types of lands are needed to achieve natural system restoration in the South Florida ecosystem: a) lands needed for construction and operation of project features that will capture, store and treat water to provide improvements in the quantity, quality, timing and distribution of water necessary to achieve natural system restoration; and b) "natural lands" on which historical, pre-drainage water flows and levels will be restored, such as lands on which sheet flow will be restored, drained wetlands will be re-hydrated, and/or wetland/upland mosaics will be enhanced and preserved to expand the spatial extent of wetlands and natural areas within the Everglades. Both types of lands are critical to accomplishing the natural system restoration goals of the Comprehensive Everglades Restoration Plan (CERP)."*

The Natural Lands Report recommended the restoration of 90,000+ acres based on a U.S. Fish and Wildlife Service analysis of restorable wetlands in the watershed.

The approach of putting all the possible management measures to achieve the goals of the Plan in one document is a good one that will allow better cost/benefit analysis as well as better understanding of the overall impact to the impacts on the natural system. The Nature Conservancy strongly supports the water quality and water quantity goals set forth in this Plan, and we look forward to continued partnership with the District on these restoration efforts.

Sincerely,

Jody Thomas

Jody Thomas, Director
Southern Florida Conservation Region

PUBLIC COMMENT ON NORTHERN EVERGLADES LEGISLATION AND INITIATIVE UPDATE POWERPOINT (for the record)

Dr. Thomas Poulson, 318 Marlberry Circle, Jupiter, FL 33458-2850
Emeritus Professor, Biological Sciences, U. Illinois at Chicago
Senior Scientist Florida Environmental Institute

My comments deal with a combination of the LOPAct redactions and wording and various powerpoints on line. There are many good things, but I am concerned about the following:

1. will only investigate ways to reduce internal nutrient loading of the lake rather than aggressively reduce / remove by giving economic incentives to developing out-of-the-box technologies ARM - 1
2. only deals with TMDL – redacted the need to mandate decreases in nutrient concentrations as well to 40 ppB phosphorus ARM - 2
3. does not deal with nitrogen, as well as phosphorus, where science shows that estuaries tend to be nitrogen-limited – redacted stopping algal blooms in the estuaries ARM - 3
4. only voluntary BMPs in LO-K basins rather than mandatory ones with mandatory monitoring for each and every farmer-landowner as in the EAA -- efficacies of different BMPs are well known and best professional judgements are inadequate ARM - 4
5. inadequate discussion about how adversity of hurricanes and heavy rains will be shared among different stakeholders, including agriculture and urban areas, and the estuaries – this includes at least a spillway and flow-way as part of the solution – unacceptable to have District allow release to tide in emergencies ARM - 5
6. need to complete putting the SS back into kiSSimmee as much as possible given the great success so far – restoring flood plains is better than reservoirs to store water and slowly release it complementary to STAs to clean water. ARM - 6
7. Should not include ASR as a huge part of the solution given existing data on why it is not working and the economic full lifetime analyses of huge O& M co$ts ARM - 7
8. Need a “shirt-sleeves” symposium a la Art Marshall to brainstorm issues and solutions. ARM - 8

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Topic — New Topic

Author	Message
Galloway	**Subject:** Northern Everglades Project

FI - 1

Total Messages 2

The Friends of Istokpoga are pleased to see that the Lake Istokpoga watershed has its own section in the Northen Everglades Project. It is our hope that under this SFWMD will now be able to go foward some projects to rectify the problems within the Istokpoga watershed and by doing so help with Lake Okeechobee and the Everglades. If we the Friends of Istokpoga can assist in any way please call on us. We also wish you well in resolving the Northen Everglades Problems.

Thanks
Bert Galloway
President
Friends of Istokpoga

Posted: 14 Dec 2007 12:04 AM

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☆ ☆ ☆ ☆ ☆

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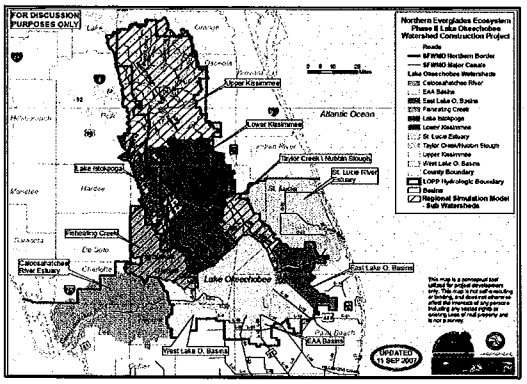


Draft Lake Okeechobee Watershed Construction Project Phase II Technical Plan Public Review

Meeting Date:

☑ **27-Nov-07**

☐ **28-Nov-07**

Comments on the Plan

☑ I Would Like to Speak Tonight

Your Name: MATT BOKOR *(optional)*

Affiliation: YOUNGQUIST BROTHERS, INC. *(optional)*

E-mail: mattbokor@earthlink.net *(optional)*

☒ - Please add me to your e-mail list

Comments On:

Section # 7.3.2.4.1 Page # 7-11 Line # ~~257~~ 457-459

MB - 1

recovery of injected water is feasible

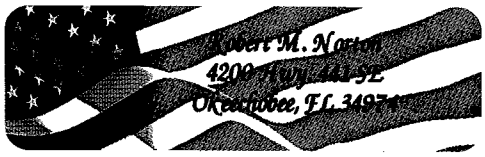
Deep Injection well.

Retro Fitting Deep well in Pinellas Cty.

Please attach additional sheets if necessary.

NE mtg

PAGE #1



RN - 1

1 DEC 2007

SUBJECT PUBLIC COMMENT.

AGRICURE IS THE LAKE OKEECHOBEE DOWN FALL. TO MUCH. PHOSPHORUS RUN-OFF WATER FROM, RANCH OPERATIONS, FROM. SOD OPERATIONS, FROM. DAIRY OPERATIONS. FROM. NORSERY OPERATIONS, FROM TREE FARMING OPERATIONS. ALL NORTH OF LAKE OKEECHOBEE. I HAVE EVER SINCE 1989 UNTIL 2007 NOW. BEEN TELLING ALL PARTYS OF WATER CONTROL OF THIS PROBLEM.

(TMDLS) HAVE NOT EVER BEEN EN-FORCED IN THE OKEECHOBEE WATER SHED. THIS MEETING 11-27-2007, WAS THE FIRST TIME, I HAVE EVER HAD TMDL COME-UP. THE NEXT STEP TO TMDL IS ENFORCEMENT. I HAVE YET TO SEE ANY AGENCY DO ANY KIND OF ENFORCEMENT, OF ANY THING. ANY PLAN PUT INTO ACTION, TO CLEAN-UP HIGH PHOSPHORUS RUN-OFF WATER. MUST HAVE SOME REAL ENFORCEMENT OF THIS PLAN.

JUST TO TALK ABOUT ENFORCEMENT OF TMDL. THERE MUST BE ACTIONS TO STOP RUN-OFF WATER FROM AGRICURE. WE

KNOW, FROM OVER THE PAST YEARS GONE BY 18 YEARS, OF TALK AND NO REAL ENFORCEMENT ACTION. ALL I EVER HEAR BY MAIL FROM MANY, MANY, AGENCYS I HOW WE ARE TO DO THIS OR THAT. BUT AS ALWAYS THERE IS NO REAL CLEAN-UP OF AGRICURE OPERATIONS AT ALL.

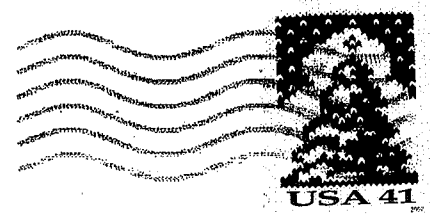
THE OKEECHOBEE BASINS IS ALL AGRICURE, GOOD OLD BOY CONTROLLED AREAS. THE RANCHER OWN EVERY THING HERE, IN OKEECHOBEE COUNTY, EVEN THE WATER. HIGH phosphorus "HOT SPOTS" AS I CALLED THEM BACK IN 1989. WHEN I FIRST STARTED TO CLEAN-UP phosphorus RUN-OFF TO LAKE OKEECHOBEE. WATER QUALITY TO IMPROVE, WILL HAVE TO STOP RANCH. RUN-OFF WATER AND TO RETURN RUN-OFF WATER BACK TO LAND USE. ON RANCH.

BUT AS ALWAYS WITH GOVERMENT AGENCYS. ALL THIS IS TALK-OF AND NO CLEAN-UP ACTION DONE

Robert M Norton

Robert M. Norton
Veteran
4200 Hwy. 441 SE
Okeechobee, FL 34974

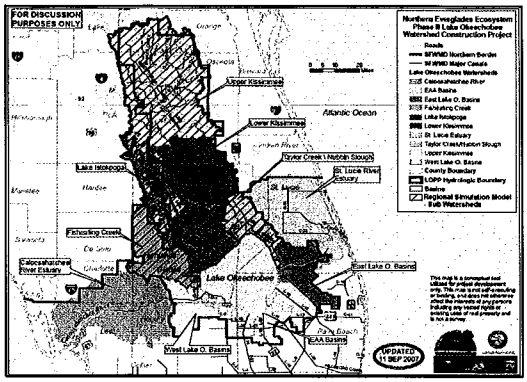
WEST PALM BEACH
FL 334 4 T
01 DEC 2007 PM



South Florida Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

Public Comment Northern Everglades and Estuary Protection

Speaker # 3



Draft Lake Okeechobee Watershed Construction Project Phase II Technical Plan Public Review

Meeting Date:

☑ **27-Nov-07**

☐ **28-Nov-07**

Comments on the Plan

☒ I Would Like to Speak Tonight

Your Name: John Holcomb *(optional)*

Affiliation: W. Flowing Cattle Co. *(optional)*

E-mail: _____ *(optional)*

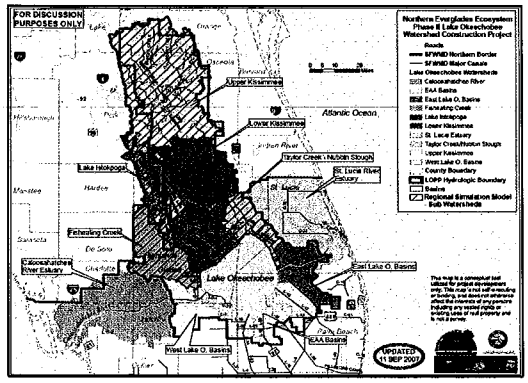
☐ - Please add me to your e-mail list

Comments On:

Section # _____ Page # _____ Line # _____

Please attach additional sheets if necessary.

Speaker #1



Draft Lake Okeechobee Watershed Construction Project Phase II Technical Plan Public Review

Meeting Date:

☒ **27-Nov-07**

☐ **28-Nov-07**

Comments on the Plan

☒ I Would Like to Speak Tonight

Your Name: Paul Gray *(optional)*

Affiliation: Audubon *(optional)*

E-mail: _____ *(optional)*

☐ - Please add me to your e-mail list

Comments On:

Section # _____ Page # _____ Line # _____

Add water supply graphic to handout –

Please attach additional sheets if necessary.

RESPONSE TO PUBLIC COMMENTS

Lake Okeechobee Watershed Construction Project
Phase II Technical Plan
Responses to Agency and Public Comments

Comment No.	Response
DOI-1	As described in section 6 and appendix B the future base in this plan included Acceler8 projects, Kissimmee River Restoration, and a version of Modified Water Deliveries to Everglades National Park. Future updates of the plan will incorporate more full scale deliveries to the southern Everglades as those needs are better defined. It is not the intent of this plan process to preclude the necessary delivery of water to the southern everglades. Clarification on this constraint has been added to Section 3.4 Planning Constraints
DOI-2	Regulatory releases(via the EAA reservoir) are included as a boundary condition from Lake Okeechobee to the Water Conservation Areas
DOI-3	The C-43 reservoir operation rule for the NERSM is designed to meet only estuarine demands. Rainfall and reference ET date are based on datasets used by the SFWMM during the PIR process. Refinements to these boundary conditions will be incorporated in future updates of the plan as more detailed operational assumptions for the C-43 reservoir are determined.
DOI-4	Operations for EAA A-1 Reservoir are those used in the modeling in support of the EAA A-1 EIS. It is recognized that the modeling in support of the EAA A-1 Reservoir has continued to be refined. Boundary conditions for the NERSM will be updated in future updates of this Plan.
DOI-5	See DOI-1 and 4 response
DOI-6	A conscious effort was made to: 1) align the periods of record from different sources of boundary conditions; 2) preserve the applicability of the performance measure targets (based on 36-years of record); and include more recent data (up to 2005). The SFWMM run used in Acceler8 was extended to include the 2000-2005 time period from which the 2001-2005 boundary conditions were derived. The 1965-1969 POR was eliminated because boundary conditions primarily in the Upper Kissimmee basin were not readily available for that time period.
DOI-7	The process development and engineering process will continue to flesh out the details on individual projects and the overall implementation strategy for this plan. The district will continue to work with agencies and the public to implement projects that best meet the objectives of the plan.
DOI-8	It should be noted that 2050 demands are not used in the NERSM modeling. The SFWMM model used for providing boundary conditions to the NERSM used 2010 demands. The deep well project proposed in the plan disposes a relatively small volume of water, 68 mgd, relative to the overall flow of water entering Lake Okeechobee and was included in NERSM modeling.
DOI-9	See description in Appendix B, B2.2.7.
DOI-10	NERSM utilized SFWMM flows as boundary conditions where the operational boundaries between the two models differ, e.g. LOK deliveries to EAA reservoir, water supply to LEC, EAA backpumping, etc. Historical flows from DBHYDRO were also used as boundary conditions primarily in areas where the NERSM model domain goes beyond the SFWMM model domain, e.g., the Fisheating Creek, Lake Istokpoga, etc. contributing runoff into Lake Okeechobee.
DOI-11	The model includes all Acceler8 projects that in the domain of the SFWMM, Section 6 has been modified to show all of these projects.
DOI-12	Water supply demands in the Kissimmee Watershed were obtained from UKISS modeling efforts in the past. In addition to other on-going efforts, e.g. KBMOS, subsequent modeling efforts supporting future Northern Everglades initiatives can address this potential issue.
DOI-13	The acreage provided in the comment appears to assume that all storage for this plan will be attained using surface storage reservoirs. As described in the plan, it is the intent to attain the storage needed using a combination of low intensity alternative storage on private and

Comment No.	Response
	public lands, aquifer storage and recovery, and surface storage reservoirs. The District will take into consideration threatened, endangered and other important species as features are sited, designed and constructed consistent with the necessary permits and approvals for each project.
DOI-14	See response to DOI 13
DOI-15	See response to DOI 13
DOI-16	See response to DOI 13
DOI-17	See response to DOI 13
DOI-18	The features associated with Fisheating Creek Sub-watershed are highly conceptual. The natural, free flowing nature of the creek will be an important consideration in the more detailed planning and design for these features. See Section 10 for more details.
DOI-19	See response to DOI 18
DOI-20	Cultural resource evaluation will be a part of the more detailed planning and design process.
USACE-1	As described in section 6 and appendix B the future base in this plan included Acceler8 projects, Kissimmee River Restoration, and a version of Modified Water Deliveries to Everglades National Park. Future updates of the plan will incorporate more full scale deliveries to the southern Everglades as those needs are better defined. It is not the intent of this plan process to preclude the necessary delivery of water to the southern everglades. Clarification on this constraint has been added to Section 3.4 Planning Constraints
USACE-2	No response required
USACE-3	A modified version of Alternative 4 was selected as the Plan that best met the legislative goals, and it includes additional measures to address the shortfall in phosphorous load reduction necessary to achieve the TMDL as described in Section 9.2.3 Other Projects. Further, Section 10 describes the process to be followed for Plan Refinement and Revision.
USACE-4	The Technical Plan addresses this comment in Section 8.3 Risks and Uncertainties Analysis. Further, the Plan will be reviewed on an annual basis and revisions will be made as appropriate. Formal reports to the Florida Legislation will be provided every three years. Clarification has been added to Section 10.
USACE-5	No response required
USACE-6	Detailed planning and design will be conducted where appropriate to address project specific issues provided in the comment.
USACE-7	If, during implementation, the Federal commitments to CERP change or individual project plans are modified, the plan will be revised accordingly. Please refer to Sections 1.7 and 9.8 for further information.
USACE-8	During the period from June to November 2007, the plan development was discussed at more than 70 meetings with Federal, state, and local agencies and stakeholder groups. USACE representatives participated in many of these discussions.
USACE-9	Table has been revised to include CERP as a federal funding source
USACE-10	See response to USACE-1
USACE-11	During project feasibility studies, potential impacts on other projects, including the availability of land, will be addressed.
USACE-12	Concur. Inconsistencies will be addressed as appropriate.
USACE-13	Tables 7-4 through 7-7 have been updated to include in-lake phosphorus reduction as appropriate. These tables are consistent with Table 8-4 which shows phosphorus load reductions achieved by each alternative that are applicable to the TMDL, as well as in-lake phosphorus load reductions resulting from recirculation of lake water.
USACE-14	Concur. Inconsistencies will be addressed as appropriate.
USACE-15	As stated in Sections 8 and 9, the Modified Alternative 4 consists of all features of Alternative 4 plus additional features required to meet the TMDL. Additional features are identified in Section 9.2.3, although their specific water quality benefits are not quantified at this time.

Comment No.	Response
	Further evaluation and refinement of these additional features will occur during the PD&E process and through individual sub-watershed feasibility studies.
USACE-16	Please refer to section 2.1.2 discussion of CERP
USACE-17	The structure name has been corrected.
USACE-18	Wording has been modified as suggested.
USACE-19	As stated, the Agricultural Canals have primary capacity for local runoff from the Everglades Agricultural Area and secondary capacity to convey flood discharges from Lake Okeechobee. If conveyance of local runoff does not require the entire canal capacity, then secondary capacity is available for Lake Okeechobee discharges.
USACE-20	See response to USACE-1
USACE-21	No response required
USACE-22	The backpumping the reviewer is referring to is water supply backpumping during low Lake Okeechobee levels. The backpumping reference in this section of the plan is flood protection backpumping.
USACE-23	No siting was performed in the development of the Technical Plan. Lessons learned in the LOW planning process will be utilized in the development of individual sub-watershed feasibility studies.
USACE-24	No response required
USACE-25	No response required
USACE-26	No response required
USACE-27	No response required
USACE-28	Individual sub-watershed feasibility studies will identify available lands and the plan will be refined as necessary to achieve the project goals and objectives. As described in section 9 the type and magnitude of each type of storage method will be affected by information from ASR pilots and studies. Note that multiple sources of water have been identified for many of the management measures described
USACE-29	See response to USACE-28
USACE-30	See response to USACE-28
USACE-31	See response to USACE-28
USACE-32	WSE has been quite successful in reducing extreme high lake stages – above 17 ft, NGVD. The proposed TSP under LORSS has an additional objective of protecting the integrity of the Herbert Hoover Dike by maintaining water levels between 12.5 and 15.5 ft, NGVD.
USACE-33	The cited reference to CERP ASR extends beyond the 2008-2010 time period that includes the Initial Implementation Measures. CERP ASR is currently performing the pilot projects and regional studies - with a Technical Data Report scheduled completion in 2012.
USACE-34	The CERP ASR well siting analysis identified several large polygons adjacent to and north of Lake Okeechobee that were, in fact, rated quite highly for ASR construction. Also, within the same study, it was acknowledged that there might be smaller tracts of land within each polygon that might present good opportunities for ASR facility siting – even if the polygon itself were given an overall moderate or low score. Groundwater flow directions in the potential ASR-storage zones are being evaluated by the ASR Regional Study. Information collected by the study will provide better insight into the groundwater flow regime in the upper Floridan Aquifer. Initial evaluations indicate that the natural groundwater flow gradient is low and will not significantly affect the efficiency of ASR in the region. It is agreed that ASR is a logical complement to such storage features as STA/wetlands and impoundments. STA/wetlands could provide a

Comment No.	Response
	level of pre-treatment of the source water before being stored in the ASR wells. Regardless, the ASR recharge water is required to meet primary drinking water standards prior to injection in the subsurface.
USACE-35	The referenced text is describing only those CERP ASR wells that are within the LOW and adjacent watersheds.
USACE-36	The intent is to utilize deep-injection well technology where the source water quality is in conflict with environmental restoration goals. With that intent, retrieval of that water using ASR technology is not preferred. The issue of fluid migration with underground injection is highly regulated by the FDEP and USEPA. If deemed unacceptable, the regulatory agencies will ensure that deep injection wells are designed, constructed, and operated to preclude such deleterious effects.
USACE-37	The fate of the facility is dependent on the testing results, not only from this well – but from the other ASR pilot(s) and the ASR Regional Study.
USACE-38	Reduction in TP loads from ASR systems is anticipated based on the fact that not all of the source water will be retrieved and returned to the environment. TP-reducing treatment systems are not assumed to be part of the facility.
USACE-39	The Technical Plan will reflect that there is a defined cycle testing plan for the first two years of operation through mid-2010. Beyond that time, ASR operation (i.e., durations of recharge and recovery) should reflect expected operational schedules. Clarification has been added to Section 10.1.2.3.
USACE-40	No response required
USACE-41	No response required
USACE-42	No response required
USACE-43	Eligibility for CERP related cost-share will be determined through the CERP project implementation report. Refer to section 9 for specific CERP Lake Okeechobee Watershed Projects included in the plan.
USACE-44	The NERSM uses a lumped hydrologic approach to model water levels in level pools representing natural and man-made storage features within a basin. For example, in the Lower Kissimmee Basin (LKB), the simulated control volume consists of the Lower Kissimmee River reaches. Therefore, boundary conditions to the Lower Kissimmee consist of watershed inflows (i.e. runoff), which are based on historical flow data at LKB bounding structures. Other basins such as Fisheating Creek, Taylor Creek/Nubbin Slough and Lake Istokpoga/Indian Prairie are simulated with a flow pass-through approach based on historical flow data at structures discharging into Lake Okeechobee. Historical water supply from local sources, runoff, and the effect of existing restoration projects are therefore implicitly considered in the boundary condition time series. Water supply demands from Lake Okeechobee are assumed to be the same as in the corresponding SFWMM run; however, actual water supply deliveries are simulated according to the Hybrid LOWSM water supply management scheme. For more details, see Table 6-1 and Appendix B
USACE-45	No response required
USACE-46	This section is a summary of previous and ongoing studies in the planning area. Please refer to the specific study for more detailed

Comment No.	Response
	information.
USACE-47	Detailed supporting information related to the regional hydrologic modeling assumptions and results is available in Appendix B of the report.
USACE-48	Individual sub-watershed feasibility studies will address issues such as the potential competition for water supply associated with re-circulating STAs. The intent would be to allow re-circulation when Lake Okeechobee levels are high enough to preclude any in-lake adverse impact.
USACE-49	Because of the relatively high concentrations of water in the S-154 basin and the relatively small volumes of water, deep injection well was identified as a cost effective means of addressing phosphorus loading to Lake Okeechobee. The volume of S-154 surface water flows that would be lost from the system is a small fraction of the total inflows to Lake Okeechobee. However, more detailed evaluation of this option will be performed in a sub-watershed feasibility study.
USACE-50	Individual sub-watershed feasibility studies will address issues such as the potential competition for water supply associated STAs and/or RASTAs.
USACE-51	The proposed Fisheating Creek RASTA has a different configuration than was evaluated in the CERP Lake Okeechobee Watershed Project. The proposed Lake Okeechobee Watershed Project Tentatively Selected Plan does not include any features in Fisheating Creek.
USACE-52	The comment provided is unclear. The Technical Plan storage goal is based on avoiding damaging discharges to the estuaries and managing Lake Okeechobee within a more ecologically desirable range. The analyses described in section 7.1.2 were used to provide the team with a general indication of the magnitude of storage that should be considered in the alternative evaluation process. Additional information from a series of scenarios based on Alternative 2 has been added to the main report and Appendix B which also support the plan's storage recommendation.
USACE-53	See response to USACE-52. All alternatives were modeled and their performance was evaluated as shown in Section 8, furthermore additional storage scenarios were modeled and performance was evaluated for those as well.
USACE-54	See response to USACE-52. It should be noted that the storage identified in this plan is not additive to CERP storage. In many cases, CERP projects such as the Lake Okeechobee Watershed Project and ASR will help to meet the storage needs identified in this plan.
USACE-55	The planning process utilized existing information from current and past planning efforts for the Lake Okeechobee Watershed including information from the CERP Lake Okeechobee Watershed Project PIR process.
USACE-56	The five year rolling average recorded phosphorus load will be updated annually for comparison with the Lake Okeechobee TMDL. The phosphorus load reduction target based on the 1991 through 2005 period of record was used for planning purposes. This period represents a range of annual rainfall conditions that are likely to be representative of what can be expected in the future. Annual reviews of the plan and updates at three year intervals provide opportunities to revise the plan if future experience indicates the need.
USACE-57	This determination is outside the scope of this plan.
USACE-58	Concur, currently FDEP methodology does not count recirculation toward achievement of TMDL. This is reflected on Page 7-21 lines 836-837. Page 7-9 lines 370-371 will be modified to be consistent.
USACE-59	Concur. Inconsistencies will be addressed as appropriate.
USACE-60	Concur. Inconsistencies will be addressed as appropriate.
USACE-61	Concur. Inconsistencies will be addressed as appropriate.
USACE-62	Best available information was utilized to determine phosphorus load reductions for these components.
USACE-63	See response to USACE-62.
USACE-64	No response required

Comment No.	Response
USACE-65	Section 1.7 reflects the District and State position regarding water quality cost sharing.
USACE-66	See response to USACE-46
USACE-67	See response to USACE-46
USACE-68	SFWMD will continue to work with the USACE to determine the most effective use of the Taylor Creek site.
USACE-69	The Istokpoga/Kissimmee RASTA is in addition to the proposed Lake Okeechobee Watershed Projects. Individual sub-watershed feasibility studies will address issues such as the potential competition for water supply associated with re-circulating STAs. The intent would be to allow re-circulation when Lake Okeechobee levels are high enough to preclude any in-lake adverse impact.
USACE-70	See response to USACE-69
USACE-71	See response to USACE-1
USACE-72	No response required
USACE-73	See response to USACE-1
USACE-74	See response to USACE-52
USACE-75	This analysis was directed at identifying storage requirements upstream of Lake Okeechobee. Therefore, impacts of damaging flows to the estuaries associated with local runoff were not addressed in this analysis. Storage requirements to address local runoff will be addressed in the Caloosahatchee and St Lucie Basin Watershed Plans.
USACE-76	It is recognized as reflected in Section 9.6 that the appropriate Federal authorization will be required prior to project implementation.
USACE-77	See response to USACE-76
USACE-78	See response to USACE-1
USACE-79	See response to USACE-76. Water storage in this area would be limited to the amount needed for restoring historic water levels in the area.
USACE-80	No response required
USACE-81	See response to USACE-76
USACE-82	See response to USACE-76
USACE-83	As described beginning in Section 7, the CERP Lake Okeechobee Watershed Project is included in all alternatives evaluated.
USACE-84	As described in Section 9, further development of the NERSM is recommended for the more detailed planning and design of projects in this watershed.
USACE-85	As previously indicated, the goals and objectives of the NEEPP significantly overlap with those of CERP. A subset of the RECOVER performance measures utilized for CERP plan formulation were also utilized for development of the plan. Future planning and design will continue to utilize an applicable set of RECOVER performance measures.
USACE-86	The permit from FDEP specifically requires the following- A. **Annual Compliance Evaluation.** Prior to 2015, annual evaluations shall be conducted to assess performance in implementing the activities described in the LOPP and determine progress towards achieving the TMDL and the associated regional target phosphorus loads below. These evaluations may be reported annually in the South Florida Environmental Report (SFER). For the purposes of this permit, the Lake Okeechobee watershed has been divided into four regions and a target load has been calculated for each region based on the 140 metric ton TMDL, of which 35 metric tons are contributed by rainfall. Progress

Comment No.	Response
	toward achieving the target load shall be calculated as a 5-year rolling average and shall be reported as part of the annual reporting requirements. Table 2 identifies the structures that are located in each region. The target loads for each region below total 105 tons: 1. Northern Region – 78.59 metric tons 2. Southern Region – 9.56 metric tons 3. Eastern Region – 16.84 metric tons 4. Western Region – 0.01 metric tons In the event the TMDL is revised, these target loads shall be revised in accordance with Rule 62-304.700(1)(c), or Subsections 403.067(6) - (7), F.S. Each report shall provide the status of projects implemented under the LOPP and assess whether the management strategies: 1) have been implemented as scheduled and, 2) whether they have achieved the anticipated phosphorus load reduction goals. The evaluation shall discuss factors affecting achievement of the phosphorus load reduction goals including: period of time between completion of a particular management strategy and its ability to achieve optimal phosphorus reduction; factors outside the permittee's control; other changes in the water management system; differences between LOPP assumptions and existing conditions; etc. If the Department, after consultation with the permittee, determines that additional projects and strategies are necessary, then the permittee will coordinate with other District permittees within that region to develop and submit a report, which will include a discussion of the phosphorus reduction strategies implemented in the region, the operation, maintenance and effectiveness of those strategies, and identification of additional plans and strategies needed to achieve the target loads.
USACE-87	CERP constraints would be evaluated in the CERP process
USACE-88	In Table 5-1, the values in the column titled, "Average Annual P Load (Measured) (Mt)" are the averages of the annual sums of flow weighted phosphorus loads calculated from the measured flow/discharge data and phosphorus concentrations at inflows to Lake Okeechobee. The data was obtained from the District's DBHydro database.
USACE-89	Due to the aggressive modeling schedule a rigorous history-matching exercise was not possible. However, NERSM was validated by comparison against widely-accepted calibrated models such as UKISS and SFWMM. See Appendix B, Section B1.6.3 for some performance measure comparison plots.
USACE-90	The watershed runoff timeseries are corrected internally in RSM by applying a factor which is defined as the ratio of the *remaining* contributing basin area (total less lake and/or pool) to the *total* contributing basin area. The *remaining* contributing basin area excludes the combined footprint of all natural waterbodies (lake or pool), which varies as stages go up or down. The footprint of all management measures (reservoir or STA) in the basin is assumed constant regardless of stage.
USACE-91	See response to USACE-52
USACE-92	Lines 163-167 will be revised to more clearly describe the "flow pass-through" method.
USACE-93	Please refer to flow and performance measure comparisons are presented in Section B1.6.3.

Comment No.	Response
USACE-94	NERSM was developed as a screening-level tool. Therefore, simplifying assumptions were employed in its construction. Theoretical assumptions and limitations of NERSM model are discussed in Section B1.3. As described in Section 9, further development of the NERSM is recommended for the more detailed planning and design of projects in this watershed. The scope of future model development and refinement has not been specifically determined at this time.
USACE-95	Edits will be made as appropriate.
USACE-96	Edits will be made as appropriate.
USACE-97	Edits will be made as appropriate.
USACE-98	Edits will be made as appropriate.
USACE-99	Edits will be made as appropriate.
USACE-100	Edits will be made as appropriate.
USACE-101	Edits will be made as appropriate.
USACE-102	Edits will be made as appropriate.
USACE-103	Edits will be made as appropriate.
USACE-104	Edits will be made as appropriate.
USACE-105	Edits will be made as appropriate.
USACE-106	Edits will be made as appropriate.
USACE-107	Edits will be made as appropriate.
USACE-108	Edits will be made as appropriate.
USACE-109	Edits will be made as appropriate.
STOF-1	We concur with the comment that construction and implementation need to occur. As noted in the organization of management measures described in section 7, implementation of a number of features is occurring. These features are at both a local and regional scale. Dependent upon the level of funding the District intends to continue implementation as expeditiously as possible.
STOF-2	No Response Required
STOF-3	The primary nutrient of concern associated with water flowing into Lake Okeechobee is phosphorus. The enabling legislation for this plan directs the District and the coordinating agencies to develop a plan that meets the Total Maximum Daily Load, which in this case is for phosphorus. Nitrogen will be an important nutrient to be taken into consideration in the River Watershed Protection Plans.
STOF-4	The legislation directing the development of this plan states, "The technical plan shall …while meeting the other water-related needs of the region, including water supply and flood protection."
STOF-5	The features listed in Sections 9.2.1.2.3 and 9.2.1.3 are a portion of the 900,000-1.3 million ac ft of storage. See response STOF-4.
STOF-6	The operation of the regional storage features included in the alternatives and the plan was keyed to the ecologically preferred stage envelope for Lake Okeechobee which ranges from 12 -16 ft depending on the time of year. These operations are described in more detail in Appendix B
STOF-7	Future plan updates will use updated Lake Okeechobee regulation schedules and other applicable operational changes.
STOF-8	Report will be modified to reflect more recent information
LC- 1	The plan includes the evaluation of affects of various alternatives on Lake Okeechobee and the Caloosahatchee and St. Lucie Estuaries. The River Watershed Protection Plans will further evaluate the affects of management measures located within the respective River Watersheds. The information from this plan will be available to be incorporated into other planning processes outside the Lake Okeechobee Watershed. New information from other planning processes will be taken into consideration in future updates of this plan.

Comment No.	Response
LC- 2	See response to STOF-1
LC- 3	See response to STOF-2
LC- 4	See response to STOF-3
LC- 5	See response to STOF-4
LC- 6	See response to STOF-5
LC- 7	See response to STOF-6
LC- 8	See response to STOF-7
STOPR-1	A separate analysis is currently underway evaluating the potential for storage of excess surface water from the Upper Kissimmee sub-watershed as noted in Section 7.3.2.3, Water Storage. While the draft plan notes that "initial indications are that there may be some volume of excess surface water in this sub-watershed." It is premature at this time to include a reservoir in this plan. However, Section 9 now recognizes that there may be the potential to shift a portion of storage that has been identified in the Lower Kissimmee to the Upper Kissimmee, if the results from the Upper Kissimmee Regional Water Supply Feasibility Study indicate that excess water is available. This plan will be updated on a regular basis and will document any modifications and refinements to the location, magnitude and type of storage to be implemented.
STOPR-2	See STOPR-1 response
STOPR-3	The application of the RSM in this case was used for general planning purposes and not for a detailed project design or regulatory purposes. Information on the peer review of the model can be found on the Regional Simulation Model website.
CF-1	The District does not disagree with the conclusions regarding recent increases in phosphorus loading in the Lake Istokpoga sub-watershed. It has always been envisioned that source control of nutrients would be implemented in the Lake Istokpoga watershed to address increasing nutrient levels. Not only would this benefit the lakes directly, but would have long term influence on the transfer of phosphorus to areas downstream, notably Lake Okeechobee and the estuaries. These source control efforts are underway but have not been fully implemented and therefore current data does not reflect improvements that are anticipated with full bmp implementation. BMP effectiveness and the need for regional projects will continue to be evaluated through the Plan update process and if necessary, adjustments can be made in later versions of the Plan.
CF-2	The plan utilizes the same period of record for all of the sub-watersheds. See response to CF-1 regarding recent increases in loading and how the plan will address. In addition, the plan does include water quality features in the Indian Prairie sub-watershed that will treat water coming from the Istokpoga sub-watershed prior to being discharged to Lake Okeechobee. Further evaluation will be conducted as part of the sub-watershed conceptual planning described in Section 10.1.4. As stated in Section 1.8, "More detailed planning and analysis,, as well as information from other South Florida Water Management District planning activities, will be used to determine if the appropriate sub-watersheds have been identified for the location of various features."
FFBF-1	BMPs included in the plan were categorized into two types: those that were within the financial capabilities of the land owner and those that required state or federal cost sharing. All BMPs were considered to be cost effective, particularly relative to large regional water quality treatment measures. Implementation of BMPs was assumed to be in accordance with the Lake Okeechobee Protection Act as amended by the Northern Everglades and Estuaries Protection Program.
FFBF-2	The five year rolling average recorded phosphorus load will be updated annually for comparison with the Lake Okeechobee TMDL. The phosphorus load reduction target based on the 1991 through 2005 period of record was used for planning purposes. This period represents a range of annual rainfall conditions that are likely to be representative of what can be expected in the future. Annual reviews of the plan and updates at three year intervals provide opportunities to revise the plan if future experience indicates the need.

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FFBF-3	As described in the report, the surface area of the lake is the area encircled by the Herbert Hoover Dike – not the surface water area that exists at any point in time. Similarly, average and maximum depths area representative of average water levels.
FFBF-4	As used in the report, "Natural Areas" is a land use category that includes the following FLUCCS codes: o 4000 – Upland forests (not including 4400s) o 5000 – Water o 6000 – Wetlands o 7000 – Barren land o 8000 – Transportation, communication, and utilities o 9000 – Special classifications These codes were grouped together based on comparability between discharge loading rates among these land use types.
FFBF-5	The term "backpumping" has been applied to the use of pump stations along the southern shore of Lake Okeechobee to discharge flood water runoff from the EAA into the lake. This definition has been the convention since the late 1940's.
FFBF-6	Units have been modified to be consistent throughout document.
FFBF-7	This statement is relevant because natural areas and other low intensity land uses are generally characterized by more natural runoff hydrographs and lower phosphorus concentrations.
FFBF-8	The text will be modified as suggested.
FFBF-9	Legacy phosphorus (P) is defined as phosphorus within the watershed that is present as the result of anthropogenic activities and has transport potential to Lake Okeechobee. Antecedent P is defined as the P that occurs naturally in soils based on the properties of the soils and atmospheric deposition and rainfall. Anthropogenic activities in the Lake Okeechobee watershed have resulted in more imported P into the watershed, as fertilizer, animal feed, and domestic goods, than has been exported resulting in the accumulation of P in soils, waste storage facilities, and landfills. Antecedent P is considered as part of the 140 metric tons that are allowed in the phosphorous TMDL.
FFBF-10	Water supply demands in the Lake Okeechobee Service Area have grown significantly during the period of analysis (1966 through 2007). However, as the statement indicates, climatic conditions in the 2000 – 2007 period have been the primary cause of the extreme low lake stages. During the 2001 drought, deviation from normal operational practices contributed to the low water levels, but even under normal operations, lake stages would have dropped below 10 ft, NGVD.
FFBF-11	The combined capacities for discharges from Lake Okeechobee using the Miami, North New River, Hillsborough, and West Palm Beach Canals is slightly less than that of the St Lucie Canal (C-44) alone - assuming there is no runoff from the EAA. In recent years, environmental considerations have constrained discharges from Lake Okeechobee to the WCA's. Even if discharges from the lake would not contribute to ecologic harm in the WCA's, the primary constraint to such discharges is limited canal conveyance capacity.
FFBF-12	In the 1880's, Hamilton Disston constructed the first canal from Lake Okeechobee to Lake Hicpochee. This was the first direct connection of the lake and the Caloosahatchee River. Prior to that, there were periods when high stages in Lake Okeechobee spilled over to Lake Hicpochee on an intermittent basis.
FFBF-13	Plan will be updated to current terminology.
FFBF-14	See response to FFBF-4
FFBF-15	See response to FFBF-4
FFBF-16	See response to FFBF-4

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FFBF-17	See response to FFBF-4
FFBF-18	See response to FFBF-4
FFBF-19	See response to FFBF-4
FFBF-20	See response to FFBF-4
FFBF-21	See response to FFBF-4
FFBF-22	This sentence is being deleted.
FFBF-23	Text will be modified as suggested.
FFBF-24	Text has been modified to indicate varying levels of success.
FFBF-25	Text has been modified to incorporate description of disking in Section 7.3.2.2.2.
FFBF-26	Future plan updates will use updated Lake Okeechobee regulation schedules and other applicable operational changes.
FFBF-27	Text modified as suggested
FFBF-28	The intent of this section is to provide a general indication of the level of certainty related to level 1 management measures.
FFBF-29	Text modified as suggested.
FFBF-30	Since these are voluntary programs, no change was made.
FFBF-31	Since these are voluntary programs, no change was made.
FFBF-32	Only a portion of these programs occur outside of the LOW.
FFBF-33	Text will be modified to incorporate this information
RC-1	The low flow performance measure for the St. Lucie estuary will be re-evaluated in the St. Lucie River Watershed Protection Plan Process. For this plan existing CERP RECOVER Performance measures were used and not modified.
RC-2	The plan does not specifically state that base flows to the St. Lucie Estuary are required from Northern Everglades. The plan uses the existing CERP RECOVER performance measure for maintaining the salinity envelope in the estuary which includes a low flow threshold. This low flow performance measure for the St. Lucie estuary will be re-evaluated in the St. Lucie River Watershed Protection Plan Process and if necessary can also be revised in future Lake Okeechobee Protection Plan updates.
RC-3	The plan utilizes existing CERP RECOVER performance measures for St. Lucie salinity envelope and high discharge criteria. These performance measures incorporate a duration component. As stated in Section 8.1.2.3 and Appendix A and reflected in the performance graphics, the goal is to avoid 14-day rolling average discharges that exceed 2,000 cfs.
RC-4	The plan does not specifically state that base flows to the St. Lucie Estuary are required from Northern Everglades. The plan uses the existing CERP RECOVER performance measures for maintaining the salinity envelope in the estuary and evaluating high discharge criteria. These performance measures evaluate combined flows to the estuary and also include a breakout so that local basin and Lake Okeechobee flows can be evaluated independently.
RC-5	This document evaluated the area defined by the Florida Legislature in the Northern Everglades and Estuary Protection Program legislation (373.4595, F.S.). The information from this plan will be available to be incorporated into other planning processes outside the Lake Okeechobee Watershed. New information from other planning processes will be taken into consideration in future updates of this plan. Specifically, future updates of this plan will be able to incorporate more full scale deliveries to the southern Everglades as those needs are better defined. It is not the intent of this plan process to preclude the necessary deliver of water to the southern everglades.
A-1	No response required
A-2	Concur. This information is included throughout the plan (e.g., Section 7.3).
A-3	The plan includes modifications to Alternative 4 necessary to meet the TMDL as described in section 8.4.

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A-4	Section 3 is a description of previous and ongoing projects, depending on the outcome of the Upper Kissimmee Regional Water Supply Feasibility Study, storage in the Upper Kissimmee Sub-watershed may be considered in the future.
A-5	Concur that a dynamic water quality evaluation would be more robust. This type of evaluation will be conducted once the Lake Okeechobee Watershed Water Quality Model is developed as discussed in Section 10.1.
A-6	Future plan updates will use updated Lake Okeechobee regulation schedules and other applicable operational changes.
A-7	The low flow performance measure for the St. Lucie estuary will be re-evaluated in the St. Lucie River Watershed Protection Plan Process. For this plan existing CERP RECOVER Performance measures were used and not modified.
A-8	Section 7.4 has been revised to indicate the intended use of this information would relate to surface reservoirs, STAs, and RASTAs. The evaluation would be modified for more localized projects involving rehydrating previously drained areas for storage and water quality benefits.
A-9	The information from this plan will be available to be incorporated into other planning processes outside the Lake Okeechobee Watershed. New information from other planning processes will be taken into consideration in future updates of this plan.
A-10	The analyses described in section 7.1.2 was used to provide the team with a general indication of the magnitude of storage that should be considered in the alternative evaluation process. Additional information from a series of scenarios based on Alternative 2 has been added to the main report and Appendix B which also support the plan's storage recommendation.
A-11	No response required
A-12	The District does not disagree with the conclusions regarding recent increases in phosphorus loading in the Lake Istokpoga and Kissimmee sub-watersheds. It has always been envisioned that source control of nutrients would be implemented in these watersheds to address increasing nutrient levels. Not only would this benefit the lakes directly, but would have long term influence on the transfer of phosphorus to areas downstream, notably Lake Okeechobee and the estuaries. These source control efforts are underway but have not been fully implemented and therefore current data does not reflect improvements that are anticipated with full bmp implementation. BMP effectiveness and the need for regional projects will continue to be evaluated through the Plan update process and if necessary, adjustments can be made in later versions of the Plan.
A-13	A number of local project features described in section 9.2.1 are intended to attain the benefit described in the comment.
A-14	See response to A-13
A-15	See response to A-8
A-16	The Lake Okeechobee Operating Permit is reviewed every five years and there will be opportunities to modify as projects come on line.
A-17	We concur with the recommendation, but also want to point out that FDEP has a five year schedule to revisit established TMDLs to determine whether they are still an appropriate restoration goal. Therefore it is possible that the TMDL may change over time.
A-18	The South Florida Water Management District uses Florida Land Use, Cover and Forms Classification System (FLUCCS) to define land use types. Below are definitions for Improved Pasture and Wetlands. Improved pasture: land has been cleared, tilled, reseeded with specific grass types and periodically improved with brush control and fertilizer application. Wetlands: Areas where the water table is at, near or above the land surface for a significant portion of most years. Extensive parts of some river floodplains qualify as wetlands. These do not include agriculture land where seasonal wetness or short-term flooding may provide an important component of the total annual soil moisture necessary for crop production. But, uncultivated wetlands yielding products such as

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	wood or which are grassed by livestock are retained in the Wetlands category. As you can see, uncultivated wetlands in improved pastures are counted as Wetlands and they were grouped as natural area in the technical plan. As mentioned, this is important when assigning P coefficients (loading rates) since the uncultivated wetlands in improved pastures do have a low P loading rate. The P loading rates are 0.72 and 0.2 lb/ac for improved pasture and natural area respectively.
A-19	District staff concur with this recommendation and have developed a scope of work to outline the process, permitting, and estimated costs for dredging the Government Cut area. Government Cut may offer a unique opportunity to conduct maintenance dredging to enhance the use of this area as a sump for sediments as they circulate through the lake.
A-20	The number of acres expected to be reflooded under the Headwaters Project is 23,236. In addition to the existing 16,000 acres of littoral wetlands occurring under the current regulation schedule with a high pool stage of 52.5 feet, an additional 7,236 acres is expected when the high pool stage is increased to 54 feet under the Headwaters Regulation Schedule. This information has been included in Section 3.1.7.1.1.
A-21	As stated in the text on p. 3-10, line 396, one of the five major goals of the Kissimmee Chain of Lakes Long-Term Management Plan is water quality improvement. However, water quality and structural components are outside the scope of the Kissimmee Basin Modeling and Operations Study (KBMOS). Again as stated in the text, this goal of this study is to identify potential changes in current structure operations within the greater Kissimmee Basin. Following completion of the KBMOS project, the potential exists to add a water quality module to the Mike She/11 model. We agree that consideration of structural changes within the basin should be made, but this was outside the scope of KBMOS.
A-22	No response required
A-23	Recent restoration work conducted on the southern islands re-established hydrologic connections between Torry and Kraemer Islands and the lake proper. This will help to preserve the peat soils in all but the most extreme events. In addition, the U.S. Fish and Wildlife Service South Florida Multi-Species Recovery Plan (1999) recommendations were to remove the remnant agricultural berms on the islands to preserve the gourd habitat through re-establishment of the hydrologic connection between the island and the lake. Recent reports from the field also indicate that the Okeechobee gourd is thriving under the current drought.
A-24	Plan modified to reflect added information
A-25	See response A-7
A-26	The Kissimmee Division is in the process of entering a cooperative agreement with USGS for a 3-year Kissimmee Chain of Lakes sediment analysis study to confirm conclusions made by White et al.. This study will span fiscal years 2008-2010. Conclusions will be considered relevant to nutrient criteria associated with LOPA and TMDLs and to findings by White et al.
A-27	The intent of Kissimmee River Restoration is to restore ecological integrity to the river/floodplain ecosystem and not specifically to reduce P levels from surface waters, such as is the case for Storm Water Treatments Areas. Instead, floodplain wetlands are expected to naturally perform P assimilation following reinundation. Flux of P is expected from wetland vegetation communities as they increase and decrease in aerial coverage according to climatic conditions and associated depth/duration of inundation. The soils of the Kissimmee floodplain are expected to act as sink for P, but as suggested can become saturated over time if P influx occurs at levels greater than their ability to assimilate them. The Kissimmee Division is considering a future study similar to that of Aldous et al. (2007) to identify soil phosphorus release and retention associated with restored wetlands of the Kissimmee River. Aldous, A.R., C. B. Craft, C. J. Stevens, M. J. Berry, and L. B. Bach. 2007. Soil phosphorus release from a restoration wetland, Upper Klamath Lake, Oregon. Wetlands 27(4):1025-1035.
A-28	The plan is not proposing to utilize Lake Istokpoga for phosphorus treatment. It has always been envisioned that source control of nutrients

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	would be implemented in the Lake Istokpoga watershed to address increasing nutrient levels. These source control efforts are underway but have not been fully implemented and therefore current data does not reflect improvements that are anticipated with full bmp implementation. BMP effectiveness and the need for regional projects will continue to be evaluated through the Plan update process and if necessary, adjustments can be made in later versions of the Plan.
A-29	No response required
A-30	Figures 5-11 and 5-12 were used during alternative plan formulation to identify "hot spot" sub-watersheds that were targeted for potential implementation of phosphorus reduction measures. Those sub-watersheds that were plotted in the figures above the diagonal line contributed disproportionately large phosphorus loads to Lake Okeechobee relative to their flow volumes. Even though the Upper and Lower Kissimmee Sub-watersheds contribute large phosphorus loads, phosphorus concentrations are low because these sub-watersheds contribute the largest volumes of flow to the lake. Phosphorus reduction is generally more difficult and expensive for water bodies with low concentrations. Therefore, since the Fisheating Creek, Taylor Creek/Nubbin Slough, and Indian Prairie Sub-watersheds had relatively high phosphorus concentrations, they were investigated more closely as potential sites for implementation of phosphorus reduction measures. If the Y-axis scale was changed to metric tons, the figures would no longer serve the purpose for which they were used.
A-31	No response required
A-32	Additional explanation has been incorporated into this Section.
A-33	Plan modified to reflect added information
A-34	See response to A-8
A-35	No Response Required
A-36	No Response Required
PLF-1	Definition added to Section 3.1.3.2 as requested
PLF-2	Future plan updates will use updated Lake Okeechobee regulation schedules and other applicable operational changes
PLF-3	Reference to Section 604.001 F.S. has been added to section 3.1.3.2.
PLF-4	Concur, as noted in section 9 a significant portion of the initial implementation stage includes the CERP Lake Okeechobee Watershed Project which is assumed to be a 50% federal cost share. There may be opportunities for other federal participation in programs such as the NRCS Wetlands Reserve Program.
TG-1	The Kissimmee Watershed is included as part of the Lake Okeechobee Watershed. The full extent of the Kissimmee Watershed is included in the Lake Okeechobee Protection Plan planning effort.
TG-2	Clarifying language has been added.
TG-3	For this plan existing CERP RECOVER Performance measures were used and not modified. The low flow performance measure for the St. Lucie estuary will be re-evaluated in the St. Lucie River Watershed Protection Plan Process. The CERP RECOVER performance measures that were used for St. Lucie salinity envelope and high discharge criteria incorporate a duration component. As stated in Section 8.1.2.3 and Appendix A and reflected in the performance graphics, the goal is to avoid 14-day rolling average discharges that exceed 2,000 cfs.
TG-4	Alternative 4 was not selected as the recommended plan, instead a modified version of Alternative 4 was selected as the recommended plan. This is because Alternative 4 provided good performance for both water quality and water quantity, unlike Alternative 2 that provided water

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	quantity improvement but insufficient water quality improvement. The modifications to the original Alternative 4 include incorporation of storage range between 900,000 and 1.3M acre-ft to reflect that the recommended plan should provide hydrologic performance comparable to that achieved in Alternatives 2 and 4. The St. Lucie River Watershed Protection Plan will evaluate additional options for improving water quality and water quantity in the estuary. Furthermore, the information from this plan will be available to be incorporated into other planning processes outside the Lake Okeechobee Watershed. New information from other planning processes will be taken into consideration in future updates of this plan. Specifically, future updates of this plan will be able to incorporate more full scale deliveries to the southern Everglades as those needs are better defined.
TG-5	Additional discussion regarding ecologically desirable range of water levels in Lake Okeechobee can be found in Sections 3.2.2 and Appendix A.
TG-6	Sections 3.1.3 and 9.2.1.1 discuss the ongoing bmp and regulatory programs as well as efforts underway to revise the regulatory programs to include more stringent requirements. These more stringent requirements coupled with the bmp research and refinement efforts described in Section 10.1.2 should ensure that these source control programs are appropriately implemented, evaluated, and optimized over time.
TG-7	The phosphorus TMDL is a mandatory requirement as reflected in Florida Department of Environmental Protection Rule 62-304.700, F.A.C. Identification of the storage goal was a legislative requirement, however the SFWMD does not have the authority to adopt this goal as a mandatory requirement.
TG-8	This storage target range will be better refined as we move forward with plan implementation, more specifically as we move forward with the plan refinement and revision activities described in Section 10.
TG-9	This sentence has been added to Section 1.0.
EF-1	Water quality information for 1991-2000 was included because it was used for the development of the Lake Okeechobee Protection Plan 2007 update and had been used for previous planning efforts. Plan will be updated with new information every three years.
EF-2	Time horizons have been added for initial, mid-term, and long-term implementation stages
EF-3	Cost estimates for mid-term and long-term implementation stages will be developed in future updates of the plan as described in Sections 9.7 and 9.8. Estimated phosphorus reductions for individual management measures are provided in Appendix C. Timeline for implementation of individual features will be dependent on funding, permitting, and other issues.
EF-4	The District is continuing to work with the Corps of Engineers through the CERP process to resolve the water quality cost share issue.
EF-5	Cost estimates for mid-term and long-term implementation stages will be developed in future updates of the plan as described in Sections 9.7 and 9.8. Detailed cost estimates for each project will be developed as more detailed planning and design progresses.
EF-6	Plan revisions and reporting are described in Sections 10.2. Additional clarification will be added to this section.
EF-7	No response required
EF-8	Siting of projects will take into consideration the existing ecological values of the land being considered and will expand upon the analysis described in section 7.4
EF-9	While we concur that improved Lake water quality will have significant benefits to the overall lake trophic system, the role of Lake stage management is still significant in terms of improvements in SAV coverage and water clarity. Water level is a major contributor to the amount of area covered by SAV (Havens 2003, James & Havens 2005). As water levels remain near optimal (between 12 and 15 ft NGVD), SAV thrives in these nearshore regions. In fact, August 2004, the month prior to hurricanes Frances and Jeanne affecting the lake, SAV abundance was the greatest with over 54,000 acres on the lake (James et al. 2006), even with an average lake-wide TP concentration

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	over 100 ppb.. When SAV in Lake Okeechobee is healthy, water clarity is much higher than the offshore region of the lake (Havens 2003). This improved clarity is attributed to the SAV reducing sediment resuspension but in part can also be attributed to less movement of offshore turbid waters into the nearshore region of the lake at low lake levels (James and Havens 2005). Submerged Aquatic Vegetation (SAV) in Lake Okeechobee has been affected by hurricanes through wave and current erosion, high water levels and high turbidity (Havens et al. 2001, James et al. 2006, Zhang et al. 2007, James & Zhang 2008). Three storms (Frances and Jeanne in 2004, and Wilma in 2005) and high water levels (above 15 feet NGVD) through February 2006, resulted in significant loss of SAV (James & Zhang 2008). Optimal conditions (lake levels at 12.5 feet NGVD) were present from February 2006 to December 2006, which was not long enough for the SAV to recover. A previous study showed that it took three years for SAV to recover from high water stress (Havens et al. 2005). Water levels since December 2006 have been below optimal, drying up many areas where SAV once grew (James & Zhang 2008). Despite this reduction, there has been some minor recovery of SAV on the lake. Partly because of the relationship between SAV abundance and lake level, the Lake Okeechobee Lake Stage Performance measure (http://www.evergladesplan.org/pm/recover/recover_docs/et/lo_pm_stage.pdf) was developed and is used in the evaluation of alternatives for the Comprehensive Everglades Restoration Plan. Havens, K. E., 2003: Submerged aquatic vegetation correlations with depth and light attenuating materials in a shallow subtropical lake. - Hydrobiologia. 493: 173-186. Havens, K. E., Fox, D., Gornak, S. & Hanlon, C., 2005: Aquatic vegetation and largemouth bass population responses to water-level variations in Lake Okeechobee, Florida (USA). - Hydrobiologia. 539: 225-237. Havens, K. E., Jin, K.-R., Rodusky, A. J., Sharfstein, B., Brady, M. A., East, T. L., Iricanin, N., James, R. T., Harwell, M. C. & Steinman, A. D., 2001: Hurricane effects on a shallow lake ecosystem and its response to a controlled manipulation of water level. - The Scientific World. 1: 44-70. James, R. T. & Havens, K. E., 2005: Outcomes of extreme water levels on water quality of offshore and nearshore regions in large shallow subtropical lake. - Arch Hydrobiol. 163: 225-239. James, R. T. & Zhang, J., 2008: Chapter 10: Lake Okeechobee Protection Program — State of the Lake and Watershed. - In:G. W. Redfield & S. Efron (ed): 2006 South Florida Environmental Report. - South Florida Water Management District, West Palm Beach, pp. 10-1 - 10-89. James, R. T., Zhang, J., Gornak, S., Gray, S., Ritter, G. & Sharfstein, B., 2006: Chapter 10: Lake Okeechobee Protection Program — State of the Lake and Watershed. - In:G. W. Redfield & S. Efron (ed): 2006 South Florida Environmental Report. - South Florida Water Management District, West Palm Beach, pp. 10-1 - 10-102. Zhang, J., James, R. T., Ritter, G. & Sharfstein, B., 2007: Chapter 10: Lake Okeechobee Protection Program — State of the Lake and Watershed. - In:G. W. Redfield & S. Efron (ed): 2006 South Florida Environmental Report. - South Florida Water Management District, West Palm Beach, pp. 10-1 - 10-60.

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EF-10	The 2007 South Florida Environmental Report contained current P reduction projects and associated P reductions, and didn't include agricultural BMP implementations. The breakdown of the current activities and P reductions is provided in Table 3 of the 2007 LOPP evaluation report. The web link for the report is: https://my.sfwmd.gov/portal/page?_pageid=2294,4946970,2294_4947241&_dad=portal&_schema=PORTAL) Here is the breakdown of current activities: Owner implemented BMPs – 35 mt Funded cost share BMPs – 30 mt Watershed P control projects – 31 mt Regional public works projects – 50 mt. Total – 149 mt Remember these estimates are based on the 10 year baseline period from 1991 to 2000.
EF-11	No response required
EF-12	The analyses described in section 7.1.2 was used to provide the team with a general indication of the magnitude of storage that should be considered in the alternative evaluation process. Additional information from a series of scenarios based on Alternative 2 has been added to the main report and Appendix B which also support the plan's storage recommendation.
EF-13	Estimated phosphorus reductions for individual management measures are provided in Table 7-9 and Appendix C.
EF-14	Estimated phosphorus reductions for individual management measures are provided in Table 7-9 and Appendix C.
EF-15	The current ERP program criteria do not require the use of the Harper Methodology. Applicants are required to provide reasonable assurance that the proposed project will not contribute to existing violations of state water quality standards increase, above existing conditions, nutrient loads discharging off-site. Although the Harper Methodology is one method to provide reasonable assurance there are others including a nutrient budget type of methodology developed specifically for the Lake Okeechobee Watershed. Typically, projects provide water quality treatment in excess of the minimum criteria and other source control BMPs as well as reasonable assurance that nutrient loads will not increase. Since the current ERP program does not require a reduction, below existing conditions, in nutrient loads it was not included in the estimated phosphorus load reduction resulting from source control programs.
EF-16	No response required
EF-17	Lake Okeechobee Watershed Project information was derived from information generated by the multi-agency Project Delivery Team.
EF-18	Opportunities for local storage and treatment will continue to be important in meeting the water quality and water storage objectives of the plan.
NC-1	Concur with comment. Alternative Water Storage Facilities are being evaluated and designed with this issue in mind. Storage design is based on compatibility with existing wetland/upland habitats. In most cases storage is designed to rehydrate/restore impacted/drained wetlands, which is being accomplished through low intensity designs such as ditch filling and installation of weirs to restore natural hydropattern. Some deeper storage facilities may be considered where deemed appropriate based on land use, habitat type, hydrology, etc . Negative impacts to wetland and upland habitats will be avoided or minimized. The proposed Alternative Water Storage Facilities will be consistent with the land purchase agreements/funding programs.
NC-2	Concur with comment. Through the efforts of the Corps/SFWMD Kissimmee River Restoration Project, Kissimmee Chain of Lakes Long-

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	Term Management Plan, Kissimmee Headwaters Revitalization Project, Kissimmee Basin Modeling and Operations Study, and Northern Everglades Lake Okeechobee Protection Plan, the restoration partners will continue to look for opportunities to store and treat water as well as provide habitat restoration in the Upper/Lower Kissimmee sub-watersheds. Specifically, the Northern Everglades effort will further evaluate this during the Sub-Watershed Conceptual Planning described in Section 10.1 of the document. We concur with comment that it is possible and preferable to quantify water quantity and quality benefits from natural land restoration/wetland storage. An attempt was made to quantify the benefits of the wetland restoration and alternative water storage management measures for this planning effort, however it was determined that more time and information was needed. Therefore this issue will be revisited as plan implementation and refinement efforts move forward. It is anticipated that as the benefits from these projects are quantified that this information can be factored into overall analysis to demonstrate what portion of the target/objectives can be achieved through these projects.
NC-3	A discussion of the February 2006 Natural Lands Report has been added to Section 9.2.1.2.
ARM-1	Technical Plan evaluates both in-lake nutrient loading as well as external loading to the lake. It includes a wide variety of management measures/features that span our current understanding of appropriate/available methods for reducing nutrients (including both source control/regulatory programs and other treatment methods) and includes investigation of new/innovative technologies such as hybrid wetland treatment technologies, algal turf scrubbers, and chemical treatment. As new technologies are suggested/become available, they will be evaluated through the plan refinement process described in Section 10.
ARM-2	The TMDL of 140 metric tons is based on trying to maintain an in-lake phosphorus concentration of 40 ppb.
ARM-3	Agree that nitrogen has been identified as an issue for the estuaries. therefore nitrogen inputs and reductions will be evaluated as part of the Caloosahatchee and St. Lucie River Watershed Protection Plan planning efforts.
ARM-4	A discussion of existing bmp programs, anticipated phosphorus reductions, and ongoing regulatory program rule revisions can be found in the document in the following areas- Section 3.1.3 Pages 3-3 through 3-6 general description of existing programs Section 5, table 5-5 Page 5-24 summary of anticipated p load reductions Section 7.3.2.2.1.1 Pages 7-6 through 7-7 general source control discussion Section 9.2.1.1.1-9.2.1.1.3 Pages 9-5 through 9-8 detailed discussion of programs and rule revisions
ARM-5	The regulation schedule for Lake Okeechobee, which determines water levels, structure operations, and discharges/regulatory releases from the Lake, is a federal responsibility. In addition, the legislature specifically required that the Phase II Technical Plan for the Lake Okeechobee Watershed Construction Project must meet the other water-related needs of the region, including water supply and flood protection.
ARM-6	The Lake Okeechobee Technical Plan includes management measures for floodplain/wetland restoration. These are included as individual management measures (e.g., Rolling Meadows Wetland Restoration), as part of the Alternative Water Storage Facilities management measures (e.g., Sumica), or as part of the Florida Ranchlands and Environmental Services Program. Refinements efforts for the Lake Okeechobee Technical Plan will continue to look for opportunities to restore floodplains or wetlands to achieve water quality and quantity benefits.
ARM-7	The Plan does not rely on ASR for the storage solution. Instead, the plan identifies the storage goal and acknowledges that this goal can/may be achieved through a combination of alternative water storage facilities, regional storage, and ASR.

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ARM-8	No response required.
FI-1	No response required.
MB-1	Additional language added to Section 7.3.2.4.1
RN-1	State law does not require achievement of the Lake Okeechobee Phosphorus TMDL until January 1, 2015. In the meantime, the coordinating agencies are identifying and implementing an array of source control efforts and water quality treatment projects in order to reduce phosphorus in inflows to the Lake so that the TMDL can be achieved by 2015. As more is learned about the efficacy of these source control efforts and projects, refinements and modifications will be made including the potential for more stringent regulatory requirements and increased enforcement. For instance, efforts are already underway to initiate rulemaking that will increase regulatory requirements in the Lake Okeechobee Watershed. Specific rulemaking efforts include revisions to the Statewide Stormwater Rule and the Lake Okeechobee Works of the District Program and development of a special basin rule for the Environmental Resource Permitting program in the Lake Okeechobee Watershed. More details on these efforts can be found in Sections 3.1.3, 7.3.2.2, and 9.2.1.1.