

11 July 2006

CESAJ-RD-P
SAJ-2005-53 (IP-TKW)

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Record of Decision on the Final Environmental Impact Statement (FEIS) for the South Florida Water Management District's Everglades Agricultural Area Reservoir A-1 Acceler8 project and the Statement of Findings (SOF) for the Above-Numbered Department of the Army permit application for which the FEIS was prepared

1. Applicant: South Florida Water Management District (SFWMD)
3301 Gun Club Road
West Palm Beach, Florida 33406

2. Location, project description, existing conditions:

a. Location: The Everglades Agricultural Area (EAA) Basin is located south of Lake Okeechobee in western Palm Beach County and encompasses approximately 620,797 acres which includes not only the highly productive agricultural lands but also the Rotenberger and Holey Land Wildlife Management Areas and stormwater treatment areas. The EAA extends south from Lake Okeechobee and is bordered by Water Conservation Areas (WCAs) 1, 2A, 2B, 3A, and 3B to the east and south and the C-139 Basin to the west.

The proposed project is located in the eastern half of Compartment A of the EAA and borders Highway U.S. 27 and the North New River Canal (NNRC) to the east, Stormwater Treatment Area (STA) 3/4 to the south, and the Holey Land Wildlife Management Area (HLWMA) to the southwest. The project site includes 16,768 acres and is located in portions of Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 35, 36, Township 46 south and Range 37 east; and Section 31, Township 46 south and Range 38 east in Palm Beach County, Florida.

NW corner: Latitude.....26°29'21" North
Longitude.....80°41'22" West

NE corner: Latitude.....26°29'22" North
Longitude.....80°39'25" West

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SW corner: Latitude.....26°23'49" North
Longitude.....80°41'15" West

SE corner: Latitude.....26°23'50" North
Longitude.....80°35'10" West

b. Existing Site Conditions: The EAA contains an extensive network of canals for water supply and flood protection. The soils at the SFWMD's proposed EAA Reservoir A-1 project site include the Pahokee muck (primarily in the southern portion of the site) and Lauderhill muck (primarily in the northern portion of the site). Based on geotechnical borings at the proposed EAA Reservoir A-1 project site, the muck ranges in thickness from less than one foot to approximately five feet, with an average depth of 1 foot to 2 foot.

Within the project site and EAA region in general, historic Everglades communities were converted to agricultural crops through land management, and therefore the site does not exhibit large areas of native habitat or a high degree of wetland habitat function. The Natural Resource Conservation Service (NRCS) has classified the farmed fields of the EAA as prior converted croplands (PC) i.e., wetlands converted to cropland prior to 23 December 1985. Only the NRCS can classify an area as a PC, and according to their regulations, once a property changes from agricultural use to non-agricultural use, a PC designation is not applicable and the land becomes subject to regulation under Section 404 of the Clean Water Act (CWA). At that point, the Corps makes an independent assessment, in accordance with the 1987 Federal Wetland Delineation Manual, of whether an area is a wetland or whether it has been converted to non-wetland.

Due to size of the project and alternative sites considered, it was not possible to field inspect all of the parcels in their entirety. The Corps, however, has sufficient information to make a jurisdictional assessment based on a number of field investigations associated with review of the project and other projects within the EAA, particularly the Everglades Construction Project or STAs. During these investigations the Corps has

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observed hydric soils and hydrology throughout Compartments A, B, and C or the EAA. Hydrologic conditions necessary to support a wetland are particularly prevalent in portions of Compartments B and C where managed agricultural activities have been abandoned and wetland plant species are naturally recruiting.

In addition to some of the farmed fields within the EAA being classified as "jurisdictional", many of the agricultural canals/ditches are also classified by the Corps as "Waters of the United States". The general configuration of the farms throughout the EAA was designed for production of sugarcane, but could also accommodate row crops. The smallest of the larger ditches (these are sometimes termed laterals) are about 4-foot to 10-foot wide at the water surface and about 4 foot deep) and are usually spaced about 660 feet apart. These ditches lead into a larger ditch, situated either around the perimeter of or within the farm area. During the wet season, water is normally pumped from the central/perimeter ditches into a larger canal which is then routed to one of the main canals (Miami, North New River, Hillsboro, etc.) where it is transported to the coast, or intercepted along the way for water supply, irrigation, or to meet environmental needs in the WCAs. Because the larger ditches had been previously excavated from Waters of the United States they remain Waters of the United States. These major canals all re-route formal natural flows of Waters of the United States. Figure 4-1 on page 4-15 of the FEIS shows the major canals within the EAA. Under the Jacksonville District's traditional approach, canal and drainage ditches in Florida are tributaries if they re-route former natural flows of waters of the United States. Specifically, if a canal or ditch replaces flow that previously occurred through a slough system or by sheetflow across the landscape that canal or ditch has replaced the former water flow and becomes a tributary Water of the United States. It should be noted that these major canals are accessible to the West Indian manatee.

Under 33 CFR Part 328, wetland adjacent to Waters of the United States are also defined as Waters of the United States. The portions of the EAA with hydrology and soils that meet the federal definition of wetlands and the remaining natural wetlands

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are adjacent to the tributary network of canals and ditches throughout the EAA.

Within the project site there are approximately 16,252.68 acres of farmed sugarcane fields which exhibit hydric soils and hydrology necessary to meet the federal definition of a wetland, 187.63 acres of jurisdictional wetlands, 163 acres of Waters of the United States in the form of ditches/canals, and 164.59 acres of uplands in the form of roads and a former industrial site i.e., the Talisman Sugar Cooperation's processing facility¹.

Fourteen federally listed threatened or endangered animal species are found within the project footprint and/or in natural areas expected to be affected by the project. The species include the endangered Florida panther [*Felix (=Puma) concolor coryi*], endangered West Indian manatee (*Trichechus manatus*), endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*), endangered wood stork (*Mycteria americana*), endangered leatherback sea turtle (*Dermochelys coriacea*), endangered hawksbill sea turtle (*Eretmochelys imbricata imbricata*), threatened bald eagle (*Haliaeetus leucocephalus*), threatened Audubon's crested caracara (*Polyborus plancus audubonii*), threatened eastern indigo snake (*Drymarchon corais couperi*), threatened green sea turtle (*Chelonia mydas*), and the threatened loggerhead sea turtle (*Caretta caretta*), and endangered smalltooth sawfish (*Pristis pectinata*). The endangered Okeechobee gourd (*Cucurbita okeechobeensis*) and threatened Johnson's seagrass (*Halophila johnsonii*) are the only listed plant species in the project area or in areas potentially affected by the project. In addition, there is one candidate species for listing, the opossum pipefish

¹ Canals and ditches determined to be Waters of the United States within the project site are a minimum 1,350 feet in width. The acreage was figured using Geographic Information System (GIS) and is approximate. There are minor agricultural ditches throughout the farmed fields often referred to as "laterals". Acreage for the laterals could not be determined separately from the acreage of the farmed fields using GIS; therefore, acreage of the laterals is included in the acreage computations for the farmed fields.

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(*Microphis brachyurus lineatus*), in downstream natural areas that may be affected by the project.

c. Original Project Description: The SFWMD proposes to place fill in order to construct and operate an above-ground reservoir that will have a capacity of 190,000 acre-feet at an approximate depth of 12 feet. As originally proposed, construction of the project would impact approximately 16,603.31 acres of Waters of the United States including 16,252.68 acres of atypical jurisdictional areas (farmed sugarcane fields), 187.63 acres of jurisdictional wetlands, and 163 acres of jurisdictional canals and ditches by dredging, filling, and/or flooding. In the original application, the SFWMD indicated the entire 16,768-acre project site would be impacted by construction activities.

d. Changes to the Project: As a result of concerns expressed by the U.S. Fish and Wildlife Service (USFWS) regarding the potential for toxaphene contamination on the approximately 965-acre Woerner Farm 3 Tract located on the north end of the project site, the SFWMD made the decision to exclude a portion of the parcel from the wetted footprint of the project. Therefore, the southern edge of the northern embankment was realigned to run parallel with the southern boundary of the Woerner Tract. This realignment leaves approximately 665 acres of the Woerner Tract outside of the reservoir footprint. The remaining acreage, approximately 300 acres, will be scraped of muck in preparation for construction of the northern alignment of the embankment. The excess muck that is scraped down will be used to dress the external face of the embankment. The exclusion of this acreage from within the wetted footprint of the reservoir required that the average pool elevation be raised 5 inches in order to still attain the 190,000 acre-feet storage capacity.

In addition, impacts to jurisdictional areas were refined to exclude the perimeter buffer lands that will not be impacted by construction activities. With these revisions, the construction footprint of the project is 15,924 acres and includes approximately 15,804.94 acres of jurisdictional areas and 119.06 acres of uplands. The jurisdictional areas impacted as a result of the project include approximately 15,467.48 acres of atypical

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wetlands (farmed sugarcane fields), 187.63 acres of natural wetlands, and 149.83 acres of canals and ditches. The remaining 844 acres within the project site and not within the construction footprint include 665 acres of lands within Woerner Farm 3 and lands that will be undisturbed and left as a perimeter buffer.

3. Project Purpose: The proposed project is a State of Florida Acceler8 project. The overall purpose of the State of Florida's Acceler8 initiative is to accelerate the funding, design, and construction of projects consistent with Comprehensive Everglades Restoration Plan (CERP) in order to experience environmental benefits sooner and in a cost-effective manner avoiding inevitable increases in land, construction materials, and labor costs.

a. The basic purpose of the project is to provide water storage.

b. The overall purpose of the project is to provide water storage in order to support the goals of the CERP by improving the timing of water deliveries from the EAA to the Water Conservation Areas (WCAs), reducing Lake Okeechobee regulatory releases to the St. Lucie and Caloosahatchee Estuaries, meeting supplemental agricultural irrigation demands, and increasing flood protection within the EAA.

4. Scope of Analysis: The scope of analysis includes the proposed action, alternatives considered, and the direct and indirect effects of the project. The proposed action includes construction of a reservoir consistent with the CERP EAA Storage Reservoirs project. The EAA Storage Reservoirs project was initially authorized by Congress under Section 601(b)(2)(C) of the Water Resources Development Act (WRDA) of 2000. The proposed action is expected to occur prior to completion of a Project Implementation Report (PIR) for the EAA Storage Reservoirs project and authorization of construction funding by Congress.

Three different types of alternatives were analyzed in the September 2005 Draft Project Implementation Report / Environmental Impact Statement (PIR/EIS) for the CERP EAA Storage

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Reservoirs project and in the FEIS in order to meet the project purpose: flowway, aquifer storage and recovery (ASR), and construction of an above-ground reservoir. Based upon the preliminary screening analysis, the flowway, and ASR were eliminated. Alternatives considered in detail include construction of a reservoir at Compartment A, Cell A-1; Compartment A, Cell-2; Compartment B; and Compartment C of the EAA. Although water storage might be accommodated in Lake Okeechobee by adjusting the lake regulation schedule to increase storage, this option was rejected because of resultant harmful impacts to the lake.

The lands within the EAA considered as alternative sites were originally purchased using Department of the Interior's (DOI) Farm Bill funds for Everglades Restoration. The DOI, U.S. Department of Agriculture (USDA), and the SFWMD are parties to a Framework Agreement which requires an interim land use change until such time that the lands are incorporated into a federal project². In addition, the agreement specifically requires the lands to be used for restoration purposes during this interim period.

As discussed in Paragraph 2.b above, the alternatives analyzed include jurisdictional Waters of the United States. In addition, a number of federally listed species utilize the EAA as well as other natural areas that will be affected by the project. Significant cultural resources are present within a portion of the EAA, particularly the Compartment C lands which were evaluated as an alternative.

Areas outside the EAA that will be affected by the proposed project include: Lake Okeechobee, the St. Lucie and Caloosahatchee Estuaries and the WCAs, particularly WCA 3.

5. Statutory authority: Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

² The Framework Agreement contains provisions for retaining or disposing of the property if the parties to the agreement concur and the property will not be used for a federal project.

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6. Other Federal, State, and Local authorizations obtained or required and pending:

a. State Permit/Certification: On 26 April 2006, the Florida Department of Environmental Protection (FDEP) issued permit number 0242172-002GL for the EAA Reservoir A-1 seepage canal construction under the authority of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA). The project as permitted by the FDEP at this time consists of construction of the seepage canal along the northern, northwestern, and eastern portions of the reservoir project site, excavation of three borrow pits within the interior of the project site, and excavation of an interior borrow canal that will follow the perimeter of the overall project footprint. Additional CERPRA authorizations will be needed for construction of other phases of the project and operation. In addition, a National Pollution Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Large and Small Construction Activities may also be required.

Ordinarily, before issuance of a Section 404 permit, water quality issues have been clearly addressed and the Corps can simply examine decisions by agencies with expertise and special authorities in those matters to determine whether limitations and conditions imposed by such agencies protect the public interest. In this case, WQC only exists for a portion of the project and has yet to be made for all construction phases of the project as well as operation of the facility. The FEIS and this Memorandum evaluate the construction and operation of the proposed reservoir in its entirety; however, it is the Corps' intention to review this Memorandum and permit when applicable water quality permits are issued by U.S. Environmental Protection Agency (USEPA) and/or the FDEP and, where possible, and consistent with the law and the public interest, to conform this Section 404 permit to those permits. Through permit conditions that include authorization to construct the project in phases as WQC is received, a Water Quality Monitoring Plan for operation of the facility, and coordination with the USEPA, the Corps has sufficient information to evaluate WQC for the project.

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b. Coastal Zone Management (CZM) consistency/permit: The CERPRA permit constitutes a finding of consistency with Florida's Coastal Zone Management Program for the portion of the project covered by the permit. In addition, in response to the DSEIS, by letter dated 27 March 2006, the Florida State Clearinghouse indicated the proposed project is consistent with the Florida Coastal Management Program (FCMP). The consistency determination was contingent on the Corps and SFWMD continuing to work with the State agencies to resolve any remaining State issues. By letter dated 29 June 2006, the Florida State Clearinghouse reaffirmed the project was consistent with the FCMP, but requested the Corps and SFWMD continue to coordinate with the FDEP, the Florida Department of Transportation (FDOT), and the Florida Fish and Wildlife Conservation Commission (FFWCC) regarding specific concerns of each state agency.

c. Other authorizations: The SFWMD will be required to obtain a Clean Air Act permit prior to construction and operation of the pump stations as well as various access permits from the FDOT. In addition, until such time that the project becomes an authorized federal project the SFWMD is required to obtain an interim land use change from the DOI prior to construction. The DOI is currently processing this request.

7. Date of the Public Notice and summary of comments:

a. Important Dates: The Corps and SFWMD had anticipated that the SFWMD would accelerate construction and achievement of benefits of certain CERP projects by obtaining required permits and initiating construction upon completion of the Final PIR/EIS for the federal CERP project. Following the Corps' selection of a Tentatively Selected Plan for the CERP EAA Storage Reservoir project, the SFWMD submitted a permit application on 2 May 2005. The Corps considered the application complete on 9 September 2005. By letter dated 2 September 2005, the Corps Planning Division provided an effect determination for the CERP EAA Storage Reservoirs project and provided the U.S. Fish and Wildlife Service (USFWS) a copy of the September 2005 Draft PIR/EIS for the CERP EAA Storage Reservoirs project which serves

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as the Corps' Biological Assessment (BA). By letter dated 3 October 2005, the Corps Regulatory Division advised the USFWS that the effect determination for the CERP EAA Storage Reservoirs project and Draft PIR/EIS also serve as the effect determination and BA for the SFWMD's Acceler8 EAA Reservoir A-1 project³. The Corps Regulatory Division circulated a public notice for the project on 12 October 2005, concurrent with the comment period of the Draft PIR/EIS, for the CERP EAA Storage Reservoirs project.

Because of delays in completion of the Final PIR/EIS for the federal CERP EAA Storage Reservoirs project, the SFWMD decided to pursue a Department of the Army permit prior to completion of the CERP EAA Storage Reservoirs Final PIR/EIS. The Regulatory Division prepared a Draft Supplemental Environmental Impact Statement (DSEIS) in January 2006. The Notice of Availability for the DSEIS was issued in the Federal Register on 10 February 2006. The DSEIS supplemented the information in the September 2005 Draft PIR/EIS with information specific for the regulatory evaluation of the Acceler8 EAA Reservoir A-1 project and recognized that there would be an independent regulatory action which broke away from the CERP PIR/EIS process. A supplemental public notice was circulated on 13 February 2006, notifying the public of the two separate and independent actions, the CERP EAA Storage Reservoirs project and the proposed EAA Reservoir A-1 Acceler8 project. In addition, the supplemental public notice informed the public that the Regulatory Division was completing a separate EIS for the Acceler8 project rather than waiting for the Final PIR/EIS to be completed. Concurrent with the Regulatory Division's DSEIS, the Corps' Planning Division circulated a Revised Draft PIR/EIS in February 2006, for the CERP EAA Storage Reservoirs project. The Corps Regulatory Division prepared a FEIS for the Acceler8 EAA Reservoir A-1 project in May 2006. The Notice of Availability for the regulatory FEIS was issued in the

³ In a letter dated 14 December 2005, the USFWS concurred that the effect determination and BA were appropriate for both the CERP EAA Storage Reservoirs project and the SFWMD's Acceler8 EAA Reservoir A-1 project. Subsequent to that letter, the USFWS completed consultation separately for three species due to slight design differences in the two actions.

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Federal Register on 19 May 2006. The FEIS also included a draft permit template with conditions applicable to all of the Acceler8 permits, not just specific to the proposed project for public and agency review/comment.

Throughout the evaluation of this permit application, a number of public meetings were held by the SFWMD through the Acceler8 Basis of Design Report (BODR) and by the Corps through the PIR/EIS process. These meetings are described in Chapter 7 of the FEIS. Early scoping for the project is described in Section 9.18 of the Draft PIR/EIS.

b. Public Comments: The Corps has reviewed all comments submitted in response to the October 2005 public notice, the January 2006 DSEIS, the February 2006 supplemental public notice, and the May 2006 FEIS. Comments received on the 12 October 2005, public notice are discussed in Chapter 7 of the January 2006 DSEIS. Comments received on the 13 February 2006 public notice and the February 2006 DSEIS are found in Chapter 8 and Annex E of the May 2006 FEIS. Comments received on the FEIS are summarized below.

(a) USEPA: By letter dated 30 May 2006, the USEPA stated the issues they raised on the DSEIS which included the potential for soil contamination and the need to alter the reservoir footprint, the water quality monitoring plan, and assurances that additional flows associated the proposed project will not adversely affect the nutrient treatment ability of the STA 3/4 had been satisfactorily addressed in the FEIS. In their letter, the USEPA provided support for the project and selection of the alternative as having reasonable and feasible objectives while providing sufficient environmental restoration benefits. The USEPA recognized the EAA Reservoir A-1 Acceler8 project is a central component of the CERP effort that will provide critical regional water storage benefits to the Everglades.

(b) USFWS: By electronic mail on 14 June 2006, the USFWS provided comments on the FEIS on the following topics: I-Operational Assumptions and Consultation for listed species, II-Compensatory Mitigation, III-Reservoir Features, and IV-General

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Wildlife. Regarding topic I, the USFWS stated they support the EAA project including the A-1 Reservoir project but until such time that the final operating plan is developed they are not assessing the system-wide benefits/impacts of the proposed project to fish and wildlife including listed species. The USFWS affirmed, however, that consultation for threatened and endangered species affected by actual construction is complete and agrees that the Corps should coordinate with the USFWS and re-evaluated effects of the project during formulation of a final operating plan which sends water south to the Everglades Protection Area (EPA) as indicated in the FEIS. Regarding topic II, the USFWS recommended the interagency team continue to update the mitigation evaluation including a final analysis of the Acceler8 system-wide net benefits once all of the projects are on line, recommended that effects be discussed in relation to the Natural System Model (NSM), the interagency team be aware of effects as a result of a change in hydrology, and that the interagency mitigation team be expanded to include additional representatives. Regarding topic III, the USFWS recommended that the SFWMD consult with the FFWCC to evaluate the potential ecological effects to HLWMA as a result of seepage and the proposed 10-foot cutoff wall along the southwest border and recommended the Corps further explain how the project improves water quality delivered to HLWMA. Regarding topic IV, the USFWS supports environmental commitments stated in the FEIS and further recommends that burrowing owl surveys take place immediately prior to construction and possibly within the footprint of the reservoir prior to inundation. The USFWS also noted that the bald eagle nest located in STA 2 and noted in the FEIS as destroyed by a hurricane in 2004 had been rebuilt.

(c) Miccosukee Tribe of Indians (Tribe): On 16 June 2006, Tribe requested additional time to respond to the FEIS. Due to the government to government relationship the Corps granted the Tribe an extension until 26 June 2006. By letter dated 26 June 2006, the Tribe responded to the FEIS with support for the project and its objectives but stated concerns with the State of Florida's Acceler8 projects and the Corps' process in general which appears to permit projects before completing the NEPA process. Regarding project benefits and objectives, the

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Tribe did indicate the proposed reservoir should be used as a means to achieve an improvement in water quality and they support additional water to the northwest corner of WCA 3A and HLWMA. The Tribe also stated that modeling results for the EAA Reservoir A-1 project were discussed at a meeting of the Combined Structural and Operational Plan (CSOP) advisory team. The results show that WCA 3A would be back to the Interim Operating Plan (IOP) high water levels that the Tribe has suffered under for many years after the Modified Water Deliveries Project (Mod Waters) designed to lower those water levels) is completed. This would be unacceptable to the Tribe.

(d) State Historic Preservation Office (SHPO): By letter dated 26 June 2006, the SHPO responded to the FEIS reaffirming the findings from their 13 December 2002, letter to the Corps. In this letter, the SHPO concurred with the Corps' assessment of Compartment A that no sites were encountered and due to Compartment A being heavily impacted by sugar cane and sod cultivation practices no additional cultural resource investigations are necessary.

(e) Florida State Clearinghouse: By letter dated 29 June 2006, the Florida State Clearinghouse reaffirmed their position that the project was consistent with the FCMP but requested the Corps and the SFWMD continue to coordinate with the FDEP, FDOT, and FFWCC to resolve issues. Specifically, the FDEP identified concerns with the use of the Woerner property muck soils, effects of seepage on the HLWMA, development on an interim operations plan, and benefits of other CERP components; the FFWCC indicated concerns that the project may cause undesirable hydropatterns within the HLWMA which would require revisions to the 1990 Memorandum of Agreement with the FDEP and the SFWMD; and the FDOT requested continued coordination on projects including the new pump station S-10, new bridge on U.S. Highway 27, widening of the North New River Canal, groundwater modeling adjacent to U.S. Highway 27, and future expansion of U.S. Highway 27.

(f) Sugar Cane Growers Cooperative of Florida (SCGCF): By letter dated 19 June 2006, the SCGCF stated 30 days

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was not sufficient time to review the FEIS but identified several issues that need further attention before a permit for the project is issued: the analysis appears to overestimate the amount of water that can be diverted from Lake Okeechobee to the Everglades through STA 3/4, it is not clear that the goal of reducing damaging flood releases from the EAA into the WCAs is met, the without project analysis is based on a different hydrologic model than that used in the with-project analysis, the reduction of estuary releases does not justify the cost of the project, the FEIS includes no evidence that the goal of improving flood protection is accomplished, and the alternative of the A-1 site as a STA rather than a reservoir should be considered. In addition, the SCGCF disagreed with the Corps' assertion of the jurisdiction over the agricultural lands stating in their opinion the vast majority of the EAA had lost its wetlands characteristics due to drainage prior to the Clean Water Act and suggested that the Corps revisit the determination. Lastly the SCGCF stated they support the Acceler8 concept but feel that the proposed project does not achieve meaningful benefits for Lake Okeechobee, the estuaries, or the Everglades.

(g) By letter dated 19 June 2006, Mr. T. Neal McAliley requested an additional 14 days to provide comments on the FEIS. By telephone conversation on 20 June 2006, the Corps stated the comment period would not be officially extended for 14 days but indicated comments could be submitted within a week. By facsimile on 30 June 2006, Mr. McAliley submitted comments on behalf of Lee County and the P.U.R.R.E. Water Coalition and Sanibel-Captiva Conservation Foundation (PURRE), two weeks after the official comment period ended. The letters submitted by Mr. McAliley on behalf of Lee County and PURRE were identical; as a result the comments are summarized together. Mr. McAliley stated the Corps should conduct additional analysis before making a final decision on the EAA Reservoir A-1 project. The goal of limiting water releases from Lake Okeechobee to the Caloosahatchee Estuary is supported but the alternatives analyzed in the FEIS including the EAA Reservoir A-1 alternative are not adequate because the Corps should have evaluated alternatives other than an above-ground reservoir such as construction of an STA. Mr. McAliley feels that the project is designed to benefit

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the WCAs over the estuaries and in fact will result in little to no benefit to the estuaries. Regarding the effects analysis Mr. McAliley stated the FEIS fails to analyze the following: how much water needs to be released from the lake, the effect that adding additional storage will have on the lake, how much water would be reserved for the natural system, how water deliveries would vary in wet and dry seasons or wet and dry years, how much beneficial water would be provided to Everglades National Park or the WCAs, the circumstances under which each alternative will deliver water to ENP or the WCAs, whether the STA will be overloaded by excessive diversion of waters from the lake, how the reservoir will provide flood protection. Lastly Mr. McAliley stated the FEIS fails to consider the recent engineering evaluation of seepage and stability at the Herbert Hoover Dike. Changing the operations of the lake due its current condition could impact the feasibility and effects of the alternatives.

c. Response to Comments: The Corps forwarded the public comments to the applicant as they were received. No formal response was received prior to circulation of the FEIS from the applicant; however, the Corps met with the applicant and agencies on numerous occasions in an effort to resolve concerns. Chapter 7 of the January 2006 DSEIS includes a response to the comments received on the October 2005 public notice as well as comments received on the September 2005 Draft PIR/EIS which pertain to the regulatory action. Chapter 8 and Annex E of the May 2006 FEIS include a response to the comments received on the January 2006 DSEIS and February 2006 public notice. Following publication of the FEIS, the SFWMD provided a letter to the Corps dated 16 June 2006, which further responded to comments received from the Natural Resource Defense Council (NRDC) on the DSEIS. On 29 June 2006, the SFWMD provided the Corps with a response to comments submitted by the SCGCF and USFWS on the FEIS. Paragraph 11 of this Memorandum includes a response to comments submitted on the FEIS.

8. Alternatives:

a. Avoidance (no action, uplands, availability of other sites):

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(1) The Central and Southern Florida (C&SF) Project Comprehensive Review Study (Restudy): The purpose of the Restudy was to reexamine C&SF Project to determine the feasibility of modifying the project to restore the south Florida ecosystem and to provide for the other water-related needs of the region. Specifically, as required by the authorizing legislation, the study investigated making structural or operational modifications to the C&SF Project for improving the quality of the environment; protecting water quality in the south Florida ecosystem; improving protection of the aquifer; improving the integrity, capability, and conservation of urban and agricultural water supplies; and, improving other water-related purposes. The Restudy recommended the CERP which identified 68 components, individually focused at the local scale, but ultimately benefiting the entire Everglades ecosystem. Since the Restudy and April 1999 "Final Integrated Feasibility Report and Programmatic Environmental Impact Statement", the SFWMD and the Federal Government have been acquiring lands needed for CERP implementation. Large acreages of land have been acquired in the southern end of the EAA for Everglades restoration. One of the most studied and computer modeled components in the Restudy was the storage reservoir in the EAA. The EAA Storage Reservoirs project is one of the components of CERP which was initially authorized by WRDA 2000.

(2) State of Florida's Acceler8 Initiative: The proposed EAA Reservoir A-1 is a State of Florida "Acceler8" project. On 14 October 2004, a Memorandum of Agreement (MOA) regarding acceleration of the Comprehensive Everglades Restoration Plan between the Executive Office of the Governor and the SFWMD was signed (Acceler8). Annex H of the FEIS includes a copy of the Acceler8 MOA. Acceler8 expedites restoration of the Everglades and attainment of benefits ahead of the CERP schedule and serves as the initial foundation for other comprehensive restoration efforts to follow. Under Acceler8, the State proposes to accelerate the funding, design, and construction of planned federal projects within the CERP in order to provide environmental benefits sooner and in a cost-effective manner avoiding inevitable increases in land, construction materials,

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and labor costs. Acceler8 consists of eight projects (some with multiple components) that, when completed, will provide immediate environmental benefits including both water quality and water quantity benefits, flood control and water supply benefits. The MOA includes a finance plan that describes how the Acceler8 projects will be funded. The MOA constitutes the State of Florida's commitment to build the projects consistent with CERP and provides reasonable financial assurance that the projects can be built.

(3) Construction of the entire CERP EAA Storage Reservoirs project: This alternative was considered but not evaluated in detail. Projected costs to implement CERP have increased since 1999 from \$8 billion to approximately \$10.5 billion. The State's Acceler8 Program includes a series of projects with a total budget of 1.8 billion dollars. This limitation was determined based on the SFWMD's ability to obtain debt service and limitations imposed by the State of Florida. The overall objective of Acceler8 projects is to provide benefits throughout the south Florida ecosystem. As a result imposition of realistic limitations on the scope of individual Acceler8 projects is crucial in order to allow construction of all the projects thus achieving this goal of system-wide benefits. Building the entire CERP EAA Storage Reservoirs would meet the purpose of the project but consume so much of the available budget other projects necessary to meet the overall system wide benefits would have to be eliminated. This careful balance to achieve system-wide benefits throughout the south Florida ecosystem within the economic constraints imposed on the applicant is clearly reasonable, and therefore, the Corps did not evaluate construction of the entire preferred alternative for the CERP EAA Storage Reservoirs project (both Cell A-1 and Cell A-2). The State's proposal to build a portion of what it expects to be included in the larger federal project will provide a significant portion of the system-wide benefits expected from the implementation of the full scale two-cell reservoir anticipated under CERP. This will also provide important experience and information that can be applied through the adaptive management process to improve and optimize the operations of other Everglades restoration projects constructed through the CERP or

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Acceler8 processes thus minimizing impacts to the aquatic environment.

(4) Alternatives Described in the FEIS: Land located in the southern end of the EAA that has been purchased for Everglades' restoration includes Compartment A (Cell A-1 and Cell A-2), Compartment B and Compartment C. These parcels are also adjacent to the existing STAs and the canals that connect with Lake Okeechobee therefore reducing the need to construct significant additional canal infrastructure. For CERP projects, the Corps' policy in plan formulation is to consider lands that have already been acquired for Everglades' restoration purposes. Because the Acceler8 projects are an advancement of CERP, only lands already acquired for Everglades Restoration were considered in the alternatives analysis in order to control costs associated with implementation of the projects. Table 1 includes a comparison of the alternatives considered for the proposed reservoir(s).

Table 1. Comparison of Build Alternatives

Evaluation Criteria	No Action	Compartments B & C	Cell A-1	Cell A-2
Project Objectives				
Ability to capture Lake Okeechobee regulatory releases	Did not meet objective	Canal capacity from LO very limited to Compartment C. Canal capacity from NNRC available for Compartment B	Largest capacity alternative- Canal capacity from NNR available for Compartment A-1	Canal capacity from NNR available, however, greater distance to convey from NNR to compartment A-2
Ability to capture EAA stormwater runoff	Did not meet objective	Compartment C limited due to location away from primary regional canals	Largest capacity alternative- Compartment A-1 has good access	Compartment A-2 has access to NNRC however, greater distance to

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Evaluation Criteria	No Action	Compartments B & C	Cell A-1	Cell A-2
		and location on far western portion of EAA. Compartment B has good access to the NNRC	to NNRC	convey from NNRC to Compartment A-2
Ability to provide water to Everglades (EPA)	Did not meet objective	Compartment C limited due to location away from primary regional canals and location on far western portion of EAA, located adjacent to STA 5 and 6. Compartment B located adjacent to STA 2	Largest capacity alternative-Compartment A-1 has good access to NNRC for supply from LO and EAA runoff also directly north of STA 3/4 for flows to WCA 3A.	Compartment A-2 has access to NNRC however, greater distance to convey from NNRC to Compartment A-2. Water from A-2 would then need to be routed via canal to STA 3/4 for flows to WCA 3A
Ability to provide water to meet EAA agricultural needs	Did not meet objective	Compartment C limited due to location in far southwestern corner of EAA. Compartment B located adjacent to NNRC, however the southern cell is a significant distance from agricultural areas	Largest capacity alternative-A-1 located adjacent to NNRC, good location to provide water supply needs	A-2 located midway between Miami and NNRC if canals constructed for discharge, good location for water supply
Improve	Did not	Compartment C	A-1 located	A-2 located

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Evaluation Criteria	No Action	Compartments B & C	Cell A-1	Cell A-2
water management flexibility within the EAA including flow equalization and optimization of existing STAs	meet objective	limited due to location away from primary regional canal system	adjacent to NNRC, good location to improve water management flexibility	midway between Miami and NNRC if canals constructed for discharge, good location to improve water management flexibility
Provide public access and recreation opportunities	Did not meet objective	Compartment C road access from county roads. Compartment B access from US 27	Access from US 27	Access via agricultural roads and levees
Environmental Impacts				
Wetland Impacts	No wetlands impacts	288.88	194	18.25
Cultural Resource Impacts	No change in cultural resource impacts	Compartment C has significant issues if used as a deep reservoir. Compartment B no cultural resources present	not present	not present

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Evaluation Criteria	No Action	Compartments B & C	Cell A-1	Cell A-2
Socio/Economic Impacts				
Flood Protection impact to adjacent property	No effect on flood protection	Compartment B need to minimize seepage along northern boundary due to private ownership. Compartment C need to minimize seepage along western boundary due to private ownership and along eastern boundary due to Rotenberger.	Need to minimize seepage to east due to US 27, Seepage south STA 3/4 and limited area adjacent to HLWMA acceptable	Need to minimize seepage along northern and western boundary due to private ownership and southern boundary due to HLWMA
Storage Capacity				
	No storage provided	165,000 ac-ft (B= 90,000 ac-ft; C=75,000 ac-ft)	190,000 ac-ft	170,000 ac-ft
Location				
Access to water supply	No change	Compartment C limited due to location away from primary regional canals, Compartment B adjacent to	North New River Canal directly adjacent to Cell A1	Canal construction required to convey water to and from either Miami and/or North New River Canal

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Evaluation Criteria	No Action	Compartments B & C	Cell A-1	Cell A-2
		North New River		
Connectivity with STAs	No change	Adjacent to STAs 2,5,6	Adjacent to STA 3/4	No direct connectivity
Accessibility for construction	No change	Access via county roads and project levees	Access from US 27	Access via agricultural roads and project levees
Construction Features				
Ability to utilize existing pumps to fill reservoir	No change	Partially fill Compartment B using STA 2 pump stations; partially fill Compartment C using STA 5 pump station. Two pumps necessary due to two cell configuration	Partially fill Compartment A1 using STA 3/4 pump station	Limited ability to fill Compartment A2 with STA3/4 pump station, requires additional infrastructure for even limited capacity
Miles of embankments	No change	30 miles	21 miles	24 miles

(a) No Action Alternative: The No Action Alternative would not allow the applicant to achieve the overall project purpose. Lands within the project footprint would likely remain as agricultural; however as a result of the project would not be provided. Currently, there is insufficient storage volume in the regional water management system in South Florida to prevent harm to natural system areas during wet periods when high water levels in Lake Okeechobee must be lowered to maintain flood control. Conversely, during dry periods, there is not currently enough water available in the regional system to meet competing needs

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for environmental, agricultural, municipal, and Tribal water supplies. With construction and operation of an above-ground reservoir, it is reasonable to expect that both this low level and the maximum stage at the end of the wet season would be reduced accordingly. Without the project, Lake Okeechobee would continue to be used to store water for agricultural and flood control. High water levels in the lake would continue to adversely affect shallow littoral zone habitat, and deeper littoral zones would remain without vegetation. In addition, the continued storage of nutrient-rich waters would maintain reduced water clarity that in turn adversely affects submerged aquatic vegetation (SAV) which reduces the availability of bedding habitat for fishes.

Continued regulatory releases from Lake Okeechobee to the Caloosahatchee and St. Lucie River watersheds would further exacerbate stormwater impacts to the estuaries by releases of freshwater impulses. During the wet season, large pulses of freshwater decrease salinity, increase nutrient inflow and increase turbidity to the estuary, thereby adversely affecting seagrasses. Reduction of the health or extent of the SAV has deleterious impacts to the estuarine fish and invertebrates that utilize this habitat as a nursery area. Loss of juvenile fish and shellfish as prey for predatory fish and birds has a cumulative adverse impact through the estuarine and marine food web, as well as directly reducing commercially important fish and shellfish.

Water released to the WCAs would continue to be difficult to manage. The WCAs need water to sustain ecological needs during the dry season and protection from large freshwater releases related to flood control during the wet season. Both water supply and water quality affect fish and wildlife in the WCAs. The current system does not allow water managers the flexibility of providing water to the WCAs during the dry season for ecological needs. This increases the susceptibility of these areas to large freshwater releases related to flood control. Continuation of altered hydroperiods within the WCAs could have adverse effects on marsh communities and tree islands as well as the wildlife that depend on them.

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(b) Construction of Storage Reservoir(s) within Compartment B and Compartment C: Construction of a reservoir within Compartments B and C considered separately would produce significantly less storage and therefore less benefit than the other alternatives, therefore, further evaluation of the alternatives considered Compartment B and C together. The Restudy recommended a total reservoir storage capacity of a least 360,000 acre-feet within the EAA. The CERP Project Delivery Team (PDT) previously determined that using Compartments B and C would not be cost effective and provided a draft plan providing 360,000 acre-feet of storage in Compartment A. Since the CERP EAA Storage Reservoirs project does not include Compartments B and C, construction of a reservoir within these lands would not meet the overall goal of Acceler8 which is to accelerate the funding, design, and construction of planned federal projects. Furthermore, when the project team screened out alternatives within Compartments B and C, this left these lands open to diversion from the CERP to the Everglades Construction Project (ECP) i.e., STAs. In light of the availability of land in Compartments B and C, permits were issued to the SFWMD in 2005 to initially expand STA-2 with a new 2,015-acre Cell 4 in Compartment B and STA-5 with a new 2,560-acre third flow-way in Compartment C to assist in maximizing the treatment effectiveness of the STAs in improving water quality entering the EPA. Utilizing the remaining land available in Compartment B for a reservoir would require the construction of two separate reservoirs due to location of Cell 4. This coupled with a separate reservoir on Compartment C would not be cost effective due to the additional cost for embankments, pumps, and associated water control structures associated with each of the separate reservoirs. The geographical location of Compartment C away from the regional canal conveyance system used to convey Lake Okeechobee water south would limit the use of Compartment C's ability to accept Lake Okeechobee regulatory releases which is an important project purpose. Also within the available lands in Compartment C, there are eight known cultural resource sites and approximately 800 acres of high probability area. Based on the analyses and mitigation measures taken to protect sites in the STA-6, Section-2 which will have a depth ranging from 0.5 to 4

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feet, it appears that sites within the remaining Compartment C area could not be protected in a reservoir with a maximum depth of 12 feet. Currently the SFWMD proposes to construct STAs on the remaining portions of Compartments B and C as part of the Acceler8 initiative.

(c) Construction of a Storage Reservoir on Compartment A: The CERP PDT recommended the construction of a storage reservoir(s) which can provide 360,000 ac-ft of water storage within Compartment A. Various configurations, sizes and maximum pool depths (6, 10, 12, and 14 ft) for the federal project have been considered to meet the 360,000 acre feet capacity. The Draft Integrated PIR/EIS dated September 2005 and the Revised Draft Integrated PIR/EIS dated February 2006 both recommend a federal project with a preferred project location in Compartment A and construction of both Cell A-1 and Cell A-2. The capacity of 190,000 acre-feet volume and a maximum pool depth of 12 feet were determined to be the most cost effective storage volume on the approximate 16,700 acres of land available for Cell A-1. (This assumed all of Cell A-1 could be used for storage; subsequently the footprint has been reduced to avoid contaminants on the Woerner Farm 3 Tract thus the pool depth has been raised to 12.5 feet.) In addition, the A-1 reservoir can be constructed to discharge through STA 3/4 without constructing additional facilities necessary for A-1. The capacity of 170,000 acre-feet volume (12 feet deep) was determined to be the most cost effective storage volume for the 14,000 acres of land available for Cell A-2.

b. Minimization:

(1) Contaminants: As a result of concerns expressed by the USFWS, USEPA, and FFWCC in response to the DSEIS regarding the potential for toxaphene contamination on Woerner Farm 3, the applicant revised the project design to exclude a portion of the parcel from the wetted footprint of the project. Therefore, the southern edge of the northern embankment was realigned to run parallel with the southern boundary of the Woerner Tract. This realignment leaves approximately 650 acres of the Woerner Tract

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outside of the reservoir footprint. The remaining acreage (approximately 330 acres) will be used for the construction of the northern alignment of the embankment following removal of the muck soils. The excess muck that is scraped down will be used to dress the external face of the embankment and will be vegetated. The exclusion of this acreage from within the wetted footprint of the reservoir required that the average pool elevation be raised 5 inches in order to still attain the 190,000 acre-feet storage capacity.

This revised design was coordinated with and evaluated by the USFWS Environmental Contaminants Program which has concurred that the project as designed will not result in a risk of contamination. The SFWMD has agreed to implement conservation measures and environmental commitments to the maximum extent practicable to further minimize risk of pesticide contamination to wading birds including: minimizing complete drydown of the reservoir cells to the extent practicable in order to minimize potential remobilization of contaminants; implementing a water quality monitoring program to include assessment of contaminants of concern within the reservoir water column, sediments, and/or prey fish species; and notifying the USFWS upon observation of any wood stork or bald eagle nesting activity, or location of dead, injured, or sick individuals.

(2) Seepage: Seepage will occur from the proposed reservoir because the substrate, to approximately 200 feet below the surface of the site, is permeable. Although quite effective at reducing seepage, cutoff walls of practical depth cannot completely eliminate seepage. Additional seepage control measures were considered, including the effect of lowering the water level in the seepage canal as a way to draw seepage to the surface and the use of pressure-relief wells to intercept deep seepage before it migrates to surrounding areas. Five seepage control alternatives were evaluated with Modular three-dimensional finite-difference ground-water model (MODFLOW). The model results for these alternatives are based on the assumption that the surrounding areas such as the farms, STA-3/4, and the HLWMA would not need to be operated to offset the rise in groundwater levels. In reality, the groundwater levels could be

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controlled through additional pumping from the agricultural drainage canals or managing surface water control structures to distribute and divert flows. Alternatives for controlling seepage are discussed in Section 2.4.1 of the FEIS.

The proposed project includes a 34-foot deep cutoff wall and a seepage canal with a bottom depth of 13.5 feet around the northwest, north, and east sides of the proposed reservoir. For that portion of the reservoir that is directly adjacent to the HLWMA and STA 3/4, a 10-foot deep cutoff wall and no seepage canal will be constructed. For the existing seepage canal along the north side of the STA 3/4 Supply Canal, which is adjacent to HLWMA and controls seepage into the farmland north of the HLWMA, the water level in the seepage canal would be held 3.5 feet lower than the water level in the surrounding farmlands. The water collected by this seepage canal would be directed back to the G-372 pump station for discharge to the Miami Canal consistent with the existing operating permit for STA 3/4.

There will be limited seepage affects on the eastern edge of HLWMA when the EAA Reservoir A-1 is at or near capacity. In those cases when seepage occurs, the ground water levels will increase at first. If the water rises above the soil surface, it will then spread out spatially, versus stacking above the soil surface, resulting in negligible stage increases. It is estimated that seepage inflow to HLMA will be < 1 cfs on average because maximum stages in the reservoir and the resulting seepage from the reservoir to HLWMA, will only occur periodically and not on a year round basis. Based on South Florida Water Management Model (SFWMM) modeling results for the EAA Reservoir A-1 project, extreme high and low events as well as inundation patterns within HLWMA will not be adversely affected. Moreover, stage gauges within HLWMA will be monitored to determine the effects of seepage on the stage levels.

Additionally, ancillary water quality improvements are anticipated in HLWMA as a result of seepage from the EAA A-1 project. As water moves from the top, or inflow point, of the reservoir, down through it, the water and associated nutrients/particulates suspended within the water column will

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"settle out" based on the residence time of the water within the reservoir. The seepage water moving into HLWMA experiences a longer residence time i.e. less nutrients and improved water quality, due to the location of HLWMA in relation to the reservoir and therefore receives a higher quality of water. In addition, the water undergoes further filtration and improvements in quality as it passes through the natural substrate from the reservoir into HLWMA. The increases in groundwater levels could be reduced by proper management of existing surface water control structures in the Supply Canal and within STA-3/4.

In conclusion, there will be impacts as a result of seepage. The information available to date suggests the impacts would be minimal and seepage control technology would mitigate the impacts. The permit will be conditioned to include a monitoring program of groundwater levels in the farmland to ensure flood protection is being maintained or improved and surface water elevation monitoring in the HLWMA to ensure no adverse environmental impacts.

(3) Operations: The EAA Reservoir A-1 project was designed to reduce frequency and magnitude of environmentally harmful Lake Okeechobee regulatory releases to the Caloosahatchee River and St. Lucie estuaries; enable more effective management of water levels in Lake Okeechobee to promote recovery of fish and wildlife habitat resources in the lake; improve the quantity, quality, timing, and distribution of environmental deliveries to the EPA through the detention and release of water in a manner responsive to environmental demands; and to provide an alternate source of water for EAA agricultural water supply needs. Additional goals include the following: reduce backpumping from the EAA into Lake Okeechobee by sending the water to the reservoir and provide for STA inflow equalization and optimization of treatment performance by capturing peak storm event discharges within the reservoir for slow release to the STAs. Consistent with the general operational intent of the CERP EAA Storage Reservoirs, the EAA Reservoir A-1 project will be operated in a manner consistent with restoring and/or sustaining hydrologic conditions necessary to achieve the benefits to the natural system as follows:

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- to receive water from Lake Okeechobee and/or from surrounding agricultural runoff;
- to give priority to deliver water from the reservoir to downstream natural areas via STA-3/4 during the wet and dry seasons in a manner consistent with stage, volume, and/or flow based restoration targets; and
- to deliver remaining water from the reservoir to meet other water related needs that would otherwise be met via deliveries from the regional water management system.
- Environmental releases from the reservoir through STA-3/4 will be made with the intent to meet environmental needs identified in the Everglades; however, these releases will be limited to avoid creating undesirable impacts due to constraints of the existing C&SF project that maybe present when the project operates.

(a) Initial Reservoir Operations if C&SF Project constraints are present: It is recognized that the timing, distribution and volume of deliveries from the reservoir to downstream natural areas could be affected by many existing operational and structural constraints of the regional water management system. Several of these existing constraints are planned to be reduced and/or eliminated by the time the EAA Reservoir A-1 project becomes operational. Modifications to the C&SF project that will help to remove these system constraints include the construction of the Modified Water Deliveries to Everglades National Park and other CERP/Acceler8 projects as well as changes in operations such as CSOP, implementation of partial rain-driven operations for the Water Conservation Areas and Everglades National Park and modifications to the Lake Okeechobee Regulation Schedule.

Depending upon the timing of the implementation of these modifications to the C&SF Project, it is possible that the operation of the reservoir will be affected by some existing operational and structural constraints of the C&SF Project. Examples of such potential constraints include limitations imposed by downstream structure capacities, and special water

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management operations tailored toward yielding very specific hydrologic conditions during specific periods of the year. Additional benefits are anticipated to be gained once these features, operational changes, and other CERP projects are put in place. (As indicated in the FEIS on page 4-1, the Corps will reconsider the need to update the NEPA analysis for the project as new information becomes available.)

Until such time that additional water can be delivered in a manner consistent with restoring and/or sustaining hydrologic conditions necessary to achieve the benefits to the natural system, the quantity, quality, timing and distribution of water made available by the EAA Reservoir A-1 project for introduction to the EPA may not achieve the same of level benefits as described by the system-wide benefits. Environmental benefits of the EAA Reservoir A-1 are discussed in Section 5.3.5 of the FEIS.

It is anticipated that there will be periods during which releases from the reservoir will be necessary to maintain reservoir stages at safe/acceptable levels and/or in preparation for storm events.

(b) Operational Intent as existing C&SF Project constraints are removed: Since it is expected that the existing constraints on the system described above will be eliminated by 2010 when the EAA Reservoir A-1 project becomes operational, the future operational conditions provide the best information on how the project will ultimately function. Additional projects and system modifications already planned should reduce or eliminate many of the existing operational and structural constraints by the time the EAA Reservoir A-1 project is operational. These projects include:

- Construction of the Mod Waters construction project and implementation of CSOP. These structural and operations changes associated with Mod Waters and CSOP will provide additional capacity to move waters from WCA 3A & 3B to the Everglades National Park.
- Implementation of partial rain-driven operations, which will allow more water to move through the Everglades Protection Area.

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- Other CERP/Acceler8 Projects

Once existing constraints on operations are reduced and/or eliminated such that additional water could be delivered in a manner consistent with restoration goals, the quantity, quality, timing and distribution of water made available by the EAA Reservoir A-1 project for introduction to the EPA are anticipated to help achieve the CERP restoration goals. Such deliveries will be released to the EPA by way of STA-3/4.

See also Paragraph 11(a) of this document for a discussion of phased operations of the A-1 project.

(c) Adaptive Management: Although hydrologic improvements are expected in the natural system, some areas may not see the same level of improvements as water is stored and redistributed throughout the system (See Section 5.3.3 and Annex D of the FEIS). The Acceler8 projects will be implemented using an Adaptive Management Strategy consistent with the CERP Adaptive Management Strategy. The permit will include special conditions for monitoring and early indication of potential problems so that corrective actions can be implemented.

c. Project as Proposed: The proposed project consists of the construction of an above-ground reservoir for water storage, with a capacity of 190,000 acre-feet at an approximate depth of 12.5 feet. The reservoir will be constructed on a 16,768-acre parcel of land situated on the eastern portion of Compartment A known as Cell A-1. Construction of the reservoir is anticipated to be completed in approximately five phases.

d. Conclusions of Alternatives Analysis: The proposed EAA Reservoir A-1 is the least damaging practicable alternative. The EAA Cell A-1 alternative with a storage capacity of 190,000 acre feet has the greatest capacity of all alternatives considered. This will result in more environmental benefits to the WCAs, Lake Okeechobee, and the estuaries because of the ability to store more water. When compared to the other alternatives this alternative will best meet the purpose and need of the project as well as all project objectives. Selection of the Compartment B

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and C alternative is too costly, and would not meet all of the project objectives due to reduced storage, would not meet the goal of Acceler8 which is to advance Everglades Restoration consistent with CERP. Construction of both the Compartment Cell A-1 and Cell A-2 alternatives are consistent with CERP since the PDT has selected a plan that includes construction of both of these cells. Cell A-1 was selected over Cell A-2 because it is the most cost effective alternative for storing water in the EAA due to location, construction features, and cost. All practical means to avoid or minimize environmental harm have been adopted in project design, construction, and operation and will be incorporated into permit conditions as described in this Memorandum.

9. Evaluation of the 404(b)(1) guidelines. See also Annex A of the FEIS although it should be noted that some of the information below has been updated since the FEIS in order to provide the most current information.

a. Factual determinations:

(1) Physical substrate: The physical substrate includes muck overlaying limerock by approximately 1 foot to 2 foot in depth. Muck will be excavated from the entire embankment, seepage canal, and borrow area footprints. Underneath the muck is a caprock layer which varies in depth between 3 and 8 feet, and averages 4 feet deep. This material will be removed and used as embankment building material. The last layer of material to be excavated will be the silty sand layer (which is part of the upper Ft. Thompson Formation). This layer extends beyond the required seepage canal bottom elevation and will constitute the remaining construction material for the embankments. The two types of embankment construction materials will be mechanically processed in different gradations of construction fill.

(a) Substrate Elevation and Slope: The embankment will be constructed to a 26 foot elevation with a minimum 12-foot wide crest. Side slopes will be 3:1 on the exterior and 2.5:1 flat plate soil-cement upstream below roller compacted concrete steps (normal pool) and 2:1 above normal pool. Exterior side of

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the levees will be earthen. A soil-bentonite cutoff wall will be installed below the centerline of the embankment to an average minus 22-foot elevation (30-foot depth) along the northwest, north, and east sides of the reservoir and a minus 2-foot elevation (10-foot depth) cutoff along STA-3/4 and HLWMA. The seepage canal would be excavated to minus 7-foot elevation (13.5-foot depth) with a bottom width of 20 foot and side slopes of 1V:2.5H to center along all sides of the reservoir. No seepage canal would be constructed along STA 3/4 or the HLWMA.

(b) Sediment Type: The proposed fill for the embankments will be composed from on-site soils of select granular materials primarily limestone or quartz, gravel and sand sized particles. Cutoff wall will be composed of a soil-bentonite slurry.

(c) Dredge/Fill Material Movement: The fill material will be stabilized and would not be subject to erosion. Erosion control measures would be used during canal widening to prevent and contain any turbidity during excavation or movement of dredge materials.

(d) Physical Effects on Benthos: Benthic organisms may be temporarily displaced during construction activities. Short-term impacts to benthos are expected in seepage canals with removal of material; however, they should re-establish rapidly.

(2) Water circulation, fluctuation, and salinity:

(a) Water Column Effects: The water column in the immediate vicinity of excavation within the canals is anticipated to be temporarily impacted during construction as widening activities and slopes are created. Turbidity and erosion will be controlled during and post-construction.

(b) Current Patterns and Circulation: Construction and expansion of the seepage canal would have minimal effect on current hydrologic circulation patterns. Construction of the levees and cutoff wall will have an impact to hydrological patterns within the EAA footprint. Surface flow would be

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collected within the EAA reservoir. The pathlines for the movement of water particles from the reservoir will be intercepted by the cutoff walls. Seepage will be forced to flow between the bottom edge of the cut-off wall and the semi-impervious layer. Any underseepage that re-emerges within the project's seepage buffer would be collected in the seepage canals. The off-site migration of water will be restricted by the canal system. The fraction of seepage passing through the bottom of the cutoff wall will be collected to avoid any adverse effects in the near and far field areas. Holding water in the EAA Reservoir A-1 should reduce flows to St. Lucie and Caloosahatchee Estuaries from Lake Okeechobee, reduce withdrawals from the lake for water supply, and increase water deliveries to the WCAs.

(c) Normal Water Level Fluctuations and Salinity Gradients: Water level fluctuations should improve as the EAA Reservoir A-1 holds water for managed deliveries. Surface and ground water levels would be minimally impacted in the immediate project footprint where seepage will be collected in buffer areas and canals. Salinity gradients should improve in the affected St. Lucie and Caloosahatchee Estuaries as reduced fresh water flows from the lake would help stabilize salinity in these areas. The EAA Reservoir A-1 project reduces the other high flow and low flow events as shown below, both of which exert influence to the salinity envelope which has a direct effect on the estuarine community i.e. vegetation, fish and invertebrate. In addition, reductions in high flow events will improve the water quality by reducing nutrient loads flowing into the estuaries, thereby reducing the occurrence of algal blooms. Improvements to both salinity patterns and water quality will positively affect the 5,120 and 16,300 acres of estuarine communities comprising the St. Lucie and Caloosahatchee Estuaries, respectively.

(3) Suspended particulate/turbidity:

(a) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site: There may be a temporary increase in turbidity levels in the project area during dredging of canals. Turbidity will be short-term and

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localized and no significant adverse impacts are expected. State standards for turbidity will not be exceeded. Turbidity will be controlled during and post construction.

(b) Effects on the Chemical and Physical Properties of the Water Column: There may be temporary impacts to the chemical and physical properties of nearby waters during construction activities. There are no acute or chronic chemical impacts anticipated as a result of construction. An environmental protection plan will be prepared by the SFWMD to address concerns regarding monitoring of equipment, maintenance and security of fuels, lubricants etc.

(i) Light Penetration: Some decrease in light penetration may occur in the immediate vicinity of the construction area. This effect will be temporary, limited to the immediate area of construction, and will have no adverse impact on the environment. After construction during operation, as water stages within the reservoir rise, the potential exists for decreased light penetration especially when the reservoir is full. This is not anticipated to cause a significant impact because water levels will continuously fluctuate.

(ii) Dissolved Oxygen (DO): There may be a slight decrease in DO in the immediate construction area of the canal during dredging operations. DO levels are anticipated to return to normal post-dredging. During operation, DO will be monitored in accordance with the project water quality monitoring plan.

(iii) Toxic Metals, Organics, and Pathogens: No toxic metals, organics, or pathogens are expected to be released by the project. The project has been designed to include remediation of toxaphene. A monitoring plan has been developed to confirm water held and released from the reservoir is safe for plant and animal life.

(4) Contaminant availability. The toxic materials of primary concern are persistent pesticides. Due to residual concentrations of toxaphene in surficial soils (from previous

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agricultural operations) within a portion of the project, these soils will be removed from the wetted footprint of the project. The permit will be conditioned to include proper handling of soils within the Woerner Farm 3 Tract to ensure no contaminants enter the water column once the area is inundated. Other deposited fill material which will be dredged from the proposed borrow site will not introduce, relocate, or increase contaminants at the fill area.

(5) Aquatic ecosystem effects: Aquatic resources within the canals within the EAA, Lake Okeechobee, the St. Lucie and Caloosahatchee Estuaries, and the WCAs should maintain their functional value or improve as environmental benefits of the project are realized. This is described throughout the FEIS in Chapters 3, 4, and 5. Mitigation for loss of wetland and other aquatic resource function and value is described in detail in Chapter 5 of the FEIS. Annex B of the FEIS includes the project mitigation monitoring plan.

(a) Effects on Plankton: No adverse impacts on autotrophic or heterotrophic organisms are anticipated.

(b) Effects on Benthos: No adverse impacts to benthic organisms are anticipated.

(c) Effects on Nekton: Mostly small forage fish may be temporarily displaced by construction and turbid water. However, no long-term adverse impacts on nekton are anticipated.

(d) Effects on the Aquatic Food Web: No adverse impacts on aquatic organisms are anticipated. There is expected to be a relatively minor temporary effect on the aquatic food web due to construction activities.

(e) Effects on Special Aquatic Sites:

(i) Hardground and Coral Reef Communities: There are no hardground or coral reef communities located within the proposed project site.

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(ii) Sanctuaries and Refuges: Adjacent wildlife management areas (Rotenberger Wildlife Management Area and HLWMA) should not be negatively impacted by the project

(iii) Wetlands: Within the project site and EAA region in general, historic Everglades communities were converted to agricultural crops and therefore the site does not exhibit large areas of native habitat or a high degree of wetland habitat function. As proposed, construction of the project would impact 187.63 acres of jurisdictional wetlands and approximately 15,467.48 acres of atypical wetlands i.e., farmed sugarcane fields which exhibit hydric soils and hydrology necessary to meet the federal definition of a wetland.

(v) Mud Flats: There are none within the project footprint and none should be impacted by the project.

(vi) Vegetated Shallows: There are none within the project footprint and none should be impacted by the project.

(vii) Riffle and Pool Complexes: There are none within the project footprint and none should be impacted by the project.

(6) Proposed disposal site: The placement of fill will occur adjacent to the area from where it is excavated. Material is not expected to migrate from its location of placement.

(a) Mixing Zone Determination: The dredged material will not cause unacceptable changes in the mixing zone water quality requirements as specified by the State of Florida's Water Quality Certification permit procedures. No adverse impacts related to depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents are expected from implementation of the project.

(b) Determination of Compliance with Applicable Water Quality Standards: Because of the inert nature of the material to be used as fill, applicable State water quality standards would not be violated.

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(c) Potential Effects on Human Use Characteristics:

(i) Municipal and Private Water Supplies: No municipal or private water supplies would be adversely impacted by the implementation of the project. Minor water quality improvements to water intake for municipal supplies may take place by reducing the back-pumping of storm water from agricultural lands to Lake Okeechobee. Other water use classes, primarily agricultural, would not be impacted; supplemental backup supplies from the reservoir will be available in addition to existing Lake Okeechobee supplies. In addition, the reservoir will act to recharge both the surficial and Floridan aquifers.

(ii) Recreational and Commercial Fisheries: The reservoir is anticipated to provide recreational fishing opportunities. Recreational and commercial fisheries would not be negatively impacted by the implementation of the project.

(iii) Water Related Recreation: Water related recreation in the immediate vicinity of construction will likely be impacted during construction activities within the canals. This will be a short-term impact. The 15,211-acre open water portion of the reservoir will likely provide additional recreational opportunities in the form of boating, fishing and wildlife viewing.

(iv) Aesthetics: The existing environmental setting would be altered from agricultural fields to a reservoir system surrounded by an emergent wetland ecosystem. Construction activities will cause a temporary increase in noise and air pollution caused by equipment as well as some temporary increase in turbidity. Some vegetation and natural areas within the footprint would be unavoidably removed during construction. These impacts are not expected to adversely affect the aesthetic resources over the long term. The proposed project includes 844 acres of undisturbed lands around the north, east, and west of the reservoir. These lands would be left in their natural state except for maintenance of exotic plant species providing aesthetic value as well as somewhat of a visual buffer between adjacent lands and the reservoir.

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(v) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves: No adverse impacts are anticipated. State and local parks do exist south and east of the project site. These include the WCAs, Holey Land Wildlife Management Area, and Rotenberger Wildlife Management Area. These would be temporarily impacted by construction activities as described in (d) above. These impacts would be minimized and avoided as practicable.

(7) Cumulative effects: There will be no adverse cumulative impacts as a result of the placement of fill at the project site. The proposed EAA Reservoir project is part of the State of Florida's Acceler8 Program. Anticipated future projects that may occur as a result of the proposed project include construction of the remaining suite of Acceler8 projects as set forth in the MOA (see Annex H of the FEIS) which would have positive cumulative effects on the south Florida ecosystem. Specifically improvements to Bolles and Cross canals and buildout of the STAs are anticipated. This Bolles and Cross Canals project is considered a separate action from the EAA Reservoir A-1 project although it will include conveyance capacity increases for both canals in order to provide improved flood protection and water flow capabilities for moving water to and from the EAA Reservoir and STAs. Buildout of the STAs within the remaining Compartment B and C lands is also likely since the lands were purchased with federal grants for Everglades restoration and have been deemed not needed for water storage.

The Acceler8 projects are designed to contribute to many of the benefits from CERP as early as possible with the remainder of the CERP projects will follow as time and resources allow.

The SFWMD's Acceler8 Program and the CERP are both anticipated to convert large areas within the EAA, around Lake Okeechobee, in the Caloosahatchee River basin, and on the upper east coast to reservoirs for increasing water storage for the overall gain and long-term benefit of the regional system. Project features of both Acceler8 and CERP will cause some adverse consequences to agricultural land uses - permanently removing tens of thousands of acres from agricultural production. These impacts may be felt

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locally and/or regionally as the economic base derived from agriculture is incrementally reduced relative to other sectors of the economy. The overall benefit to the regional system is expected to be far greater than the localized adverse effects. As these features occur disparately across the landscape within different hydrologic basins, and as distinct units rather than multiple features within a single subregion, they will not likely result in a significantly detrimental cumulative effect. See Chapter 4 of the FEIS for more detail on cumulative impacts.

(8) Secondary effects: There will be no adverse secondary impacts on the aquatic ecosystem as a result of the construction. During construction the site will be contained with sedimentation barriers. Erosion will be controlled by compaction of soils, construction of ditches, and embankments, maintenance of relatively flat grades, and other appropriate erosion control techniques. Sedimentation will be controlled during construction by use of sediment controls basins and traps, filter berms, straw bales, etc. Impacts associated with construction traffic and equipment will be localized due to construction occurring in phases. Phasing construction will allow wildlife to utilize undisturbed portions of the site. Once constructed the initial flooding of the reservoir will be at a rate of one-half inch per day until a depth of six inches is attained in order to minimize negative impacts to slow moving wildlife species. A monitoring plan would be implemented during and after construction to ensure no adverse impacts to water quality. Secondary effects due to seepage are discussed in Paragraph 8.b.(2) of this Memorandum. Chapter 6 of the FEIS includes a discussion of specific environmental commitments, engineering and design commitments, and operational commitments in order to avoid, minimize, and/or mitigate for adverse effects during construction. These measures, where applicable, would also be implemented beyond the construction phase during operation of the project.

b. Restrictions on discharges:

(1) Alternatives: (See Paragraph 8 of this Memorandum).

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(a) The activity is located in a special aquatic site (wetlands, sanctuaries and refuges, mud flats, vegetated shallows, coral reefs, riffle and pool complexes).

(b) The activity does not need to be located in a special aquatic site to fulfill its basic purpose.

(c) It has been demonstrated in Paragraph 7 of this Memorandum above that there are no practicable or less damaging alternatives which would satisfy the project's basic purpose.

(2) Other program requirements:

(a) The proposed activity does not violate applicable State water quality standards or Section 307 prohibitions or effluent standards.

(b) The proposed activity does not jeopardize the continued existence of federally listed threatened or endangered species or affects their critical habitat.

(c) The proposed activity does not violate the requirements of a federally designated marine sanctuary.

(3) The activity will not cause or contribute to significant degradation of waters of the United States, including adverse effects on human health, life stages of aquatic organisms, ecosystem diversity, productivity and stability; and recreational, aesthetic, and economic values.

(4) Minimization of adverse effects:

(a) Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

(b) Compensatory mitigation: Mitigation is discussed in Chapter 5 of the FEIS.

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(i) The mitigation plan includes accounting for the system-wide interdependencies and watershed benefits of the Acceler8 projects operated together as a system consistent with the C&SF Project as modified. The Acceler8 projects are anticipated to provide watershed functions to the south Florida ecosystem consistent with the goals and objectives of CERP. The goal of the Acceler8 program is to assist in the restoration, preservation, and protection of the south Florida ecosystem while providing for other water related needs of the region. This program of projects will be designed to accomplish this by helping to provide the quantity, quality, timing, and distribution of water necessary to achieve and sustain those essential hydrological and biological characteristics that defined the undisturbed south Florida ecosystem.

Cumulatively, the Acceler8 projects are anticipated to improve ecological performance by moving closer to the NSM depth targets for wetlands in the WCAs and ENP. Additional improvements can be expected in Lake Okeechobee, the Caloosahatchee and St. Lucie Estuaries, and Picayune Strand by moving closer to hydrologic and ecological restoration targets identified by the REStoration COordination and VERification (RECOVER) program through the Monitoring and Assessment Plan (MAP). The preliminary mitigation ledger based on the Unified Mitigation Assessment Methodology (UMAM) indicates that 6439.58 functional units will be provided through implementation of Acceler8 and the projects' environmental lift to the nearshore habitat of Lake Okeechobee, St. Lucie Estuary, and Caloosahatchee Estuary.

(ii) It is also anticipated that there will be project specific benefits directly related to EAA A1 Reservoir: reduction of freshwater pulse releases and stabilization of salinities such that oyster reefs and submerged aquatic vegetation in the Caloosahatchee and St. Lucie Estuaries will increase; reduction of extreme high and low stage levels in Lake Okeechobee such that the amount and quality of SAV and emergent plant communities will increase thereby improving foraging and habitat for wading birds and native fish; and improvements to the water quality entering the WCAs. Independently, the EAA Reservoir will move toward the NSM depth targets and anticipated

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corresponding ecological benefits and goal UMAM scores identified for these areas, although the project on its own without the synergistic effects of the other Acceler8 projects is not expected to achieve all targets.

(iii) The mitigation will be monitored as set forth in the mitigation monitoring plan, Annex B of the FEIS. The mitigation monitoring plan incorporates portions of the RECOVER programs MAP performance measures and restoration targets. A review of existing monitoring efforts proposed by the RECOVER team has revealed the Acceler8 system-wide benefits can be assessed using existing monitoring programs as described in the RECOVER. If RECOVER ceases to monitor any of the performance measures and restoration targets identified in the monitoring plan, it will be the responsibility of the SFWMD to fill the monitoring gaps with monitoring parameters acceptable to the Corps. Each year the Corps will receive from the SFWMD a report that evaluates the monitoring data to ensure a trend toward the restoration targets and UMAM goal scores projected on the mitigation ledger. Annual evaluation will also allow for adaptive management or corrective actions if monitoring indicates adverse environmental responses.

(iv) The mitigation plan is based on hydropattern benefits as predicted in modeling found in Annex D of the FEIS. Although improvements are expected in the natural system, some areas may not see the same level of improvements as water is stored and redistributed throughout the system. Specifically, the duration of high stages in Lake Okeechobee increase, although the frequency of high stages declines, and WCAs 2B and 3B did not meet defined NSM depth targets resulting in reduced performance described in the Greater Everglades Section 5.3.3.2 Some of the conditions in WCA2B and WCA-3A actually worsen compared to present.

The permit will include special conditions for monitoring and adaptive management that provides early indication of potential problems and direction for corrective actions. Project monitoring will be conducted and evaluation on an annual basis in order to determine if environmental responses indicates problems or

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undesired trends. In such case the Corps and the SFWMD will re-evaluate the data and determine appropriate course of action. This could include operational modification, structural modifications, or alternative mitigation.

(v) During development of the Acceler8 system-wide mitigation plan, the Corps coordinated with the USEPA, the USFWS, and the FDEP and formed an interagency mitigation team. The team is currently conducting UMAM evaluations of habitats throughout the south Florida ecosystem where hydrologic changes are predicted. The team is also reviewing the model performances in order to project the environmental lift anticipated once all of the Acceler8 projects are brought online. The Corps recognizes that the model results are based on assumptions for operation that are based on the best available information with regard to constraints in the system and other projects that will be online when the Acceler8 projects are all completed. Therefore, the permit requires the submission of an operating plan that also includes updates of the predictive models such as for hydropattern changes and recognizes the mitigation ledger will continue to be updated by the team as projects come on line and operations plans are developed.

c. Findings: The proposed project complies with the Section 404(b)(1) guidelines and is the least environmentally damaging practicable alternative with the inclusion of the specific permit conditions as described below.

(1) Special Condition number 1 requires the permittee to provide all submittals and reports required under the permit in a single Consolidated Annual Report.

(2) Special Condition number 2 requires the permittee to hold a pre-construction meeting with notification to the agencies for the purposes of informing contractors on the conditions of the permit with.

(3) Special Condition number 3 requires the permittee to notify the Corps prior to commencement of construction.

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(4) Special Condition number 4 requires the permittee to provide as-built drawings of the authorized work and a completed As-Built Certification Form.

(5) Special Condition number 5 is specific for projects the permittee plans to construct in furtherance of the CERP, but which are being constructed in advance of final authorization/approval of the associated CERP PIR and/or execution of a Project Cooperation Agreement. This set of conditions addresses the Regulatory Division's NEPA analysis which is solely for the purpose of permitting, indicates the regulatory action does not constitute approval of engineering or work-in-kind credit for any future consideration of the project under CERP, and requires the project to be consistent with the C&SF Project as modified.

(6) Special Condition number 6 requires the permittee to adhere to the CESAJ Master Specifications including Environmental Specifications from Section 01355 and the Turbidity Specifications from Section 01411.

(7) Special Condition number 7 includes environmental commitments for avoiding, minimizing, or mitigating adverse effects during construction activities and/or operation of the reservoir as well as measures for dealing with contaminated soils on the Woerner Farm 3 Tract.

(8) Special Condition number 8 includes environmental commitments and measures for avoiding, minimizing, or mitigating adverse effects to wildlife and listed species.

(9) Special Condition number 9 includes conditions in the event unknown cultural resource sites or human remains are encountered.

(10) Special Condition number 10 includes conditions for authorizing construction in phases as WQC from the State or USEPA is received.

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(11) Special Condition number 11 addresses the initial and phased operation of the reservoir.

(12) Special Condition number 12 includes mitigation conditions for consideration of the system-wide environmental benefits expected to result from the interrelationships of the design, construction, and operation of the project in concert with the other Acceler8 projects. The condition includes monitoring, reporting, financial assurances, adaptive management, and remedial measures. The permit requires the submission of an operating plan for review and approval by the Corps, updates of the predictive models such as for hydropattern changes, and no allocation for consumptive use of any water made available by the project until it demonstrated that the project can be operated consistent with the approved final operations plan to achieve the project's anticipated environmental benefits.

(13) Special Condition number 13 is intended to ensure the permittee notify the Corps of issues which implicate the Miccosukee Tribe of Indians and the Seminole Tribe of Florida so that the Corps can ensure Government to Government coordination and relations.

(14) Special Condition number 14 requires the permittee to submit any revisions and/or modifications to the project plans as well as all required monitoring reports. Failure to do so may result in the Corps not moving forward with authorization for a future modification of the permit.

(15) Special Condition number 15 requires the permittee to submit a recreational plan prior to operation of the reservoir.

10. Public Interest Review:

a. Corps analysis of comments and responses. All comments received in response to the public notice, DSEIS, and FEIS have been considered in the following public interest review.

b. All public interest factors have been reviewed. The Corps reviewed all of the public interest factors and considered the

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factors listed below relevant to this proposal. Both cumulative and secondary impacts on the public interest were considered.

(1) Conservation: The goal of the Acceler8 program is to assist in the restoration, preservation, and protection of the South Florida ecosystem while providing for other water related needs of the region. This program of projects will be designed to provide the quantity, quality, timing, and distribution of water necessary to achieve and sustain those essential hydrological and biological characteristics to improve the South Florida ecosystem. The construction and operation of Acceler8 will be required to remain consistent with the Federal C&SF Project as modified by law and its project goals and purposes. Acceler8 serves as the initial foundation for other comprehensive restoration efforts to follow. The remaining CERP projects are anticipated to follow as time and resources allow.

There are minor design differences between the Acceler8 EAA Reservoir A-1 project and the CERP EAA Storage Reservoir project. The EAA Reservoir A-1 differs from the plan recommended in the Draft PIR/EIS for the CERP EAA Storage Reservoirs project due to the SFWMD's requirements to build approximately 3 miles of 25-foot high levee to dam safety standards, whereas this same segment of levee described in the Draft PIR/EIS is 21 feet high and serves only to separate the two reservoir cells providing operational flexibility and a wave break function. For the proposed project this levee would be an earthen embankment with a slope of 3:1. The proposed design does not preclude future adjustments that may be necessary for the federal project such as degrading the exterior face to save volume or installing fetch reduction.

Another design difference between the proposed project and the CERP EAA Storage Reservoirs project is the result of the Woerner Tract, a 966-acre tract located in the northernmost portion of Cell 1 which was evaluated for potential contaminants. Due to residual concentrations of toxaphene in surficial soils (from previous agricultural operations), these soils are not currently recommended for inclusion within the proposed Federal reservoir; however, the non-Federal sponsor may choose to remove impacted

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soils from all or part of these lands. The project design for lands outside the reservoir will prevent the inundation of soils containing toxaphene, thus, minimizing potential for ecological risk. The SFWMD has chosen to design the project to maximize use of the Woerner lands. This design has been fully coordinated with and evaluated by the USFWS Environmental Contaminants Program which has concurred that the project as designed will not result in a risk of contamination.

Both EAA reservoir projects include a seepage buffer along the east, north, and western boundaries of the reservoirs. For the EAA Reservoir A-1 project, the seepage buffer would be approximately 150-feet in width from toe of embankment to the seepage canal. The Revised Draft PIR/EIS for the CERP EAA Storage Reservoirs project recommends a seepage buffer approximately 200 feet in width for the project.

These design differences between the EAA Reservoir A-1 project and the CERP EAA Storage Reservoirs project have been reviewed and coordinated with the CERP PDT. It has been determined these differences will not preclude construction of the federal project and that the project as designed will be constructed consistent with the CERP project.

(2) Economics: Implementation of the proposed project will allow for a CERP component to be built ahead of the CERP schedule in a cost-effective manner avoiding inevitable increases in construction materials and labor costs. The SFWMD has implemented a small business outreach program designed to solicit the involvement of local industries in the construction and operations of the reservoir.

(3) Aesthetics. The existing environmental setting would be altered from agricultural fields to a reservoir system with a 25-foot high embankment. This would be a major change in the landscape from current agricultural activities. The proposed project includes 844 acres of undisturbed lands around the north, east, and west of the reservoir which would be left in their natural state except for maintenance of exotic plant species providing aesthetic value as well as somewhat of a visual buffer

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between adjacent lands and the reservoir. Other features including canals, water control structures, and pump stations are not unlike existing features in the area. Whether this change is good or bad is a matter of personal judgment.

(4) General environmental concerns. The environmental effects are described in Chapter 4 of the FEIS and elsewhere in this Memorandum. The direct effects of the project result in the reduction of the spatial extent of wetlands within the project footprint and conversion to an above-ground reservoir. Since the function and value of the existing wetlands are reduced due to the agricultural practices, adverse effects can be offset by benefits anticipated as a result of the project. The goals and objectives of the SFWMD's proposed EAA Reservoir A-1 will:

- Capture, move and store regulatory releases from Lake Okeechobee, reducing the number/volume of harmful discharges to coastal estuaries.
- Capture, move and store agricultural stormwater runoff, reducing the need for emergency flood control (backpumping) into Lake Okeechobee.
- Provide additional water to meet Everglades and agricultural water demands, improving the timing of environmental deliveries of water to the WCAs and lessening water supply dependency on Lake Okeechobee.
- Improve operational flexibility to move water within the EAA, including flow equalization and optimization of STA performance to further reduce phosphorus inflows to the Everglades.

Achievement of these goals and objectives will result in the reduction of extreme high and low stage levels in Lake Okeechobee subsequently improving foraging and habitat for wading birds and native fish throughout Lake Okeechobee's littoral zone. Benefits to downstream estuaries are expected as a result of reduction of abrupt and high volume freshwater discharges and pulse releases from Lake Okeechobee and subsequent in stabilization of salinities such that oyster reefs and submerged aquatic vegetation will increase. Within the WCAs habitat will be

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enhanced by improving water quality and timing and delivery of water.

(5) Wetlands: Wetlands are discussed in Chapter 4 of the FEIS and in Paragraphs 9.a.(5)(e)(iii) and 9.b.(4)(b) above. Impacts as a result of project construct include 187.63 acres of jurisdictional wetlands and approximately 15,467.48 acres of atypical jurisdictional areas (farmed sugarcane fields). In addition, the works authorized will result in approximately 205 acres of upland and wetland mosaic within the reservoir seepage buffer, approximately 13 acres of wetland habitat i.e. littoral shelves in the seepage canals, and 878.83 acres of deepwater refugia within the open water reservoir. In addition, as a result of the project wetland communities within Lake Okeechobee and the WCAs will be improved because implementation of the project will move toward the Natural System Model depth targets and anticipated corresponding ecological benefits and goal UMAM scores identified for these areas.

(6) Historic and cultural resources. There are no cultural sites that will be affected by the project.

(7) Fish and wildlife values. Existing fish and wildlife values are discussed in Chapter 3.5 of the FEIS and effects to fish and wildlife values as a result of the project are discussed in Chapter 4.8 of the FEIS. In general, the project will improve fish and wildlife values through hydropattern improvements in the WCAs, reduced damaging pulse releases to the St. Lucie and Caloosahatchee Estuaries, and improved habitat in the Lake Okeechobee nearshore and littoral zone habitats.

(8) Flood Hazards: The project will be built to State and Federal dam safety requirements with frequent monitoring and maintenance to ensure no flood hazards. The Corps' Engineering Division has participated in technical reviews of Acceler8 design documents including the EAA Reservoir A-1 to ensure compliance with federal dam safety criteria.

(9) Floodplain Values: Improving flood protection is identified as one of the many project purposes. The FEIS documents in Section 4.19.2 that "the removal of acreage in the

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EAA from agricultural production will have a positive affect on the flood protection capability of the C&SF project in the EAA." It is inherent with the construction of the reservoir, that there will be a net reduction of surface water runoff within the basin requiring management within the existing flood control system of the Everglades Agricultural Area. This project effectively removes approximately 16,768 acres of runoff that otherwise would have entered the system. In addition to removing surface water runoff entering the NNRC during storm events, the reservoir "captures" the volume of water that falls as rainfall within the reservoir footprint. This volume equates to approximately 500 cfs during a basin wide ¼ inch per day rainfall event. During any storm event, the net basin runoff is decreased by the corresponding acreage, leaving the flood control system (canals) with more capacity to move water away from areas that may flood. The project also includes infrastructure that could be used to supplement current features within the C&SF Project in emergency situations.

(9) Land Use: Existing land use is described in Section 3.2 of the FEIS. As a result of the project agricultural lands that are currently in public ownership would be converted to an above-ground reservoir.

(10) Recreation: Recreation is identified as a goal and objective of the project. It is anticipated that a number of diverse recreational opportunities will be associated with the proposed reservoir. These recreational activities will be consistent with and not constrain the purpose of the project and will be governed by the applicable federal laws and state rules. Pedestrian access will be generally facilitated around the perimeter embankments. Boating and other public access activities will be supported in and around the inflow, outflow, and perimeter canal network.

(11) Water supply: Water supply is discussed in the FEIS at Section 4.18. Lake Okeechobee is the main source for agricultural water supply and urban drinking water for municipalities adjacent in the region. The proposed project would have a beneficial effect on water supply by reducing

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undesirable low levels in Lake Okeechobee resulting in a reduction in water restrictions in Lake Okeechobee Service Area and in some cases for the Lower East Coast Service Areas. By reducing the number and duration of low Lake Okeechobee stages, the EAA A-1 Storage Reservoir will provide supplemental water.

(12) Water Quality: Water quality is addressed throughout the FEIS particularly in Sections 3.12 and 4.13.

(a) Implementation of the project will improve water quality conditions in the EAA, as well as in Lake Okeechobee, the Caloosahatchee Estuary, the St. Lucie Estuary, and the WCAs through reducing releases from Lake Okeechobee, reducing backpumping of agricultural runoff into Lake Okeechobee, and reducing phosphorus concentration of water released from the reservoir entering the STAs. The proposed EAA Reservoir A-1 will reduce pollution loading into downstream receiving water bodies through the attenuation of surface flows and reduction of associated pollutant loads prior to discharge. The metering of water from the proposed storage reservoir into the STAs will allow them to consistently improve water quality before release to the WCAs and eventually to the EPA.

(b) This permit decision is being issued with a State Water Quality Certification for construction of the seepage canal along the northern, northwestern, and eastern portions of the reservoir project site, excavation of three borrow pits within the interior of the project site, and excavation of an interior borrow canal that will follow the perimeter of the overall project footprint. The permit instrument recognizes that authorization to construct other portions of the project will be based on the phased receipt of the State Water Quality Certification for that phase. The permit has been made sufficiently flexible to incorporate by modification subsequent water quality permit conditions imposed in permits issued by the FDEP and to conform, where possible and consistent with the law and the public interest, the DA permit to the State permits.

(c) Annex F of the FEIS includes the Water Quality Monitoring Plan that will be implemented once the project is

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constructed and brought on line. This will ensure the quality of water within the reservoir and at the discharge point meets required standards. The permit acknowledges the plan described in Annex F and attached to the permit may be superseded by another plan developed by the FDEP or USEPA.

(13) Safety: Construction of the project will be a major construction undertaking involving blasting, heavy equipment. OSHA regulatory requirements apply OSHA safety requirements provide regulatory control. Workers at the site are required to wear safety equipment such as steel-toed shoes, hard hats, eye and ear protection devices, etc. The blasting operation will meet SFWMD standard specifications including strict set-back and safety requirements. Public access will be controlled during construction. In addition, the embankment around the reservoir will be built to the standards of the State of Florida Dam Safety Program and Federal Guidelines for Dam Safety.

(14) Considerations of Property Ownership: The lands within the project were originally purchased using DOI Farm Bill funds for Everglades Restoration. The DOI, USDA, and the SFWMD are parties to a Framework Agreement which requires an interim land use change until such time that the lands are incorporated into a federal project. In addition, the Agreement specifically requires the lands to be used for restoration purposes during this interim period.

c. Describe the relative extent of the public and private need for the proposed structure or work. The project is needed to capture and store EAA runoff or excess water from Lake Okeechobee during the wet season. This would benefit the general public because ecological improvements are anticipated to the lake and estuaries. During the dry season, reservoir releases could be made to the primary canals for agricultural irrigation which would benefit private agricultural interests and for restoration of the downstream Everglades ecosystem which would benefit the general public. Lake Okeechobee would then no longer serve as the only supplemental supply for meeting EAA irrigation demands. During the periods when supplemental irrigation

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requirements could not be met by the EAA storage reservoir, water supply releases from Lake Okeechobee could still be provided. Private benefits also include employment opportunities during construction and operation of the facility.

d. Describe the practicability of using reasonable alternative locations and methods to accomplish the objective of the purposed work where there are unresolved conflicts as to resource use. There are no unresolved conflicts regarding use of the resource to implement a project for Everglades restoration. In response to the FEIS, the SCGCF suggested a STA be constructed in lieu of a reservoir and Mr. McAliley suggested construction of a flowway. Construction of a flowway was identified as an option for storing water in the Restudy and Final Integrated Feasibility Report and Programmatic Environmental Impact Statement dated April 1999; however, this option was screened from the alternatives as discussed in Section 2.1 of the FEIS. Construction of a STA was not considered because it would not meet the overall project purpose. A STA does not allow for the same storage capacity of water as an above-ground reservoir. Construction of an STA within the Cell A-1 project site would only provide about 32,000 acre feet of storage. Although it has been demonstrated in numerous NEPA analyses and reports that additional treatment methodologies and or additional acres of STA are needed to achieve water quality standards for phosphorus entering the EPA, for the EAA Reservoir A-1, water quality treatment for environmental deliveries into the EPA can be handled through the existing STA 3/4. As part of Acceler8, the SFWMD intends to build STAs on the remaining lands in Compartments B and C. This is documented in the MOA (Annex H of the FEIS).

e. Describe the extent and permanence of the beneficial and/or detrimental effects which the proposed work is likely to have on the public and private uses to which the area is suited. The areas within the project footprint are being taken out of agricultural production. The change is permanent. The beneficial effects associated with the project would be permanent.

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f. Threatened or endangered species: Threatened and Endangered Species are discussed in Sections 3.4 and 4.6 of the FEIS. The proposed project will not jeopardize the continued existence or critical habitat of any threatened or endangered species.

(1) Consultation with the USFWS: The Corps made a determination that the project would not affect the leatherback, hawksbill, green and loggerhead sea turtles and the Audubon's crested caracara; may affect, but is not likely to adversely affect the West Indian manatee, Everglade snail kite, wood stork, bald eagle, eastern indigo snake, and the Okeechobee gourd; and may adversely affect the Florida panther. In a letter dated 14 December 2005, the USFWS concurred with the determinations for all species except the bald eagle and wood stork and requested additional information in order to commence formal consultation for the Florida panther. The concurrence letter was provided for both the SFWMD's EAA Reservoir A-1 project and the CERP EAA Storage Reservoirs project and included conservation and protection measures which have been incorporated into permit conditions. (Following slight design differences in the CERP EAA Storage Reservoirs project and the EAA Reservoir A-1 project, the USFWS advised that consultation for the wood stork, bald eagle, and panther would be handled separately for the two projects.)

On 10 February 2006, the Corps submitted a cumulative impact analysis to the USFWS for the EAA Reservoir A-1 project to assist in preparation of their Biological Opinion (BO) for the Florida panther. By letter dated 24 March 2006, following the SFWMD's redesign of the EAA Reservoir A-1 project to address contaminants within the Woerner Farm 3 Tract, the USFWS concurred with the Corps' determination for the wood stork and bald eagle. This concurrence letter was also based on conservation and protection measures which have been incorporated into permit conditions. On 14 April 2006, the USFWS terminated formal consultation for the panther with a BO that there will be no direct take in the form of mortality or injury of the Florida panther but incidental take of panthers in the form of harm and harassment associated with the loss of 15,924 acres of panther habitat within the "Other Zone" lands. Based on their analysis, the USFWS believes this

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level of take is not likely to jeopardize the continued existence of the Florida panther. The BO included a Reasonable and Prudent Measures that no more than 15,924 acres of panther habitat are lost through implementation of the proposed action and that 59,294 acres and 41,772 acres of habitat used by the Florida panther in the Primary and Other Zones, respectively will be preserved. The BO included six terms and conditions for implementing the Reasonable and Prudent Measures which are incorporated into the permit conditions.

The panther cumulative impact analysis considers the CERP Band 1/Acceler8 projects lands as compensation/preservation for the proposed take of habitat used by the panther. These lands are located in the core area of occupied habitat, the majority are adjacent to other large tracts of natural and preserved lands, and are consistent with the USFWS' goal to locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the Florida panther south of the Caloosahatchee River. The CERP Band 1/Acceler8 projects which include the EAA Reservoir A-1 project will result in preservation of 59,294 acres and 41,772 acres of habitat used by the panther within the Primary and Other Zones, respectively. These preservation efforts will benefit the Florida panther and its prey.

The Corps' initial request for consultation with the USFWS in September 2005 was based on construction and operation of both the CERP EAA Storage Reservoirs project and the EAA Reservoir A-1 project. In their letter dated 24 March 2006, the USFWS indicated the concurrences for both projects are based on an initial operations plan as described in the February 2006 Revised Draft PIR/EIS for the CERP EAA Storage Reservoirs project that includes water deliveries to the south only when there is an environmental demand. As discussed in Sections 2.5.2 and 4.6.2 of the FEIS and in Paragraph 8.b.(3) of this Memorandum, the Corps will require the Acceler8 EAA Reservoir to be operated consistent with the operational intent of the CERP EAA Storage Reservoirs project.

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The Corps also recognizes that consultation has not commenced for two species, the American crocodile (*Crocodylus acutus*) and the Cape Sable seaside sparrow (*Ammodramus maritimus*). These two species were not consulted on because they were not identified by the USFWS as species that could potentially be affected by the project until the March 2006 concurrence letter and April 2006, Final Fish and Wildlife Coordination Act Report (CAR) for the CERP EAA Storage Reservoirs project. The Corps had been coordinating the CERP EAA Storage Reservoirs project with the USFWS since 2002, and these two species were not mentioned as species that may potentially be affected by the CERP EAA Storage Reservoirs project in the USFWS' Planning Aid Letters or Draft CAR (See Annex A of the Draft PIR/EIS.) Prior to revising the interim operations plan to include long-term operations and/or other interrelated projects which send water to the EPA, the Corps will re-evaluate downstream effects to determine if additional NEPA analyses are needed and will consult with the USFWS for these two species. The Corps will also determine at that time if reinitiation of consultation for any other listed species that have already been consulted on is necessary.

(2) Consultation with the National Marine Fisheries Service (NMFS): The Corps made a determination that the project "may affect, but is not likely to adversely affect" sea turtles in their aquatic habitat, the smalltooth sawfish, opossum pipefish, and Johnson's seagrass. By letter dated 11 April 2006, the NMFS Protected Resources Division responded to the letter stating the DSEIS document adequately addresses the issues associated with threatened and endangered species under the NMFS' purview concurring with the Corps' determination.

g. Essential Fish Habitat (EFH): The Corps determined that the proposed action would not have an impact on EFH or federally managed fisheries for which the NMFS is responsible. The NMFS responded to the Draft PIR/EIS with support for the goals and objectives of CERP. The NMFS responded to the February 2006 supplemental public notice on 1 March 2006, indicating present staffing levels preclude further analysis of the proposed activity and no further action is planned. As no EFH conservation recommendations have been provided and the NMFS has

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pledged for support for CERP goals and objectives, the Corps is satisfied that the consultation procedures outlined in 50 CFR Section 600.920 of the regulation to implement the EFH provisions of the Magnuson-Stevens Act have been met.

h. Corps' wetland policy. The proposed wetland alteration is necessary to realize the project purpose and should result in minimal adverse environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. Therefore the project is in accordance with the Corps' wetland policy. All practicable means to avoid or minimize environmental harm from the alternative selected have been adopted.

i. Cumulative and secondary Impacts: There should be no adverse cumulative or secondary impacts caused by the project. This is discussed in Paragraphs 9.a.(7) and 9.a.(8) of this Memorandum and throughout Chapter 4 of the FEIS.

11. Corps' Analysis of Comments and Responses: The Corps has considered all of the comments received in response to the project. Following is an analysis of the Corps' response to the comments submitted on the FEIS by category of comment. As indicated in Paragraph 7.c, responses to comments submitted on the regulatory public notice were addressed in the DEIS and comments submitted on the DSEIS were addressed in the FEIS.

a. Interim Operations and Final Operations: Currently there is no final operating plan designated for the CERP EAA Storage Reservoir project since the project is one component of a much larger and complex environmental restoration program which requires other CERP and non-CERP projects to be in place. As such an operating plan for the EAA Reservoir A-1 project has not been developed. The February 2006 Revised Draft PIR/EIS contains an initial operating plan, and as stated in the FEIS, this project would be operated consistent with the operational intent of the CERP EAA Storage Reservoirs project. As described in Section 2.5.2 of the FEIS, the EAA Reservoir A-1 will be operated initially such that water will only be sent downstream to the EPA when the environment calls for it. It is likely that operations of the reservoir will be phased to send water into the EPA as

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constraints are removed (by the completion of the Mod Waters for example) until such time that a final operations plan can be implemented. The FEIS evaluates effects based on assumptions that a final operating plan which sends water to the EPA will be implemented. Implementation of RDO is based on operational commitments, consistency with operations as discussed in the PIR (and subsequent revisions), and specific conditions including Corps approval of all facets of operations. This issue is resolved through permit conditions that would authorize construction of the reservoir only. Consistent with the general operational intent of the CERP EAA Storage Reservoirs project, the EAA Reservoir A-1 project will be operated in a manner consistent with restoring and/or sustaining hydrologic conditions necessary to achieve the benefits to the natural system as discussed in Paragraph 8.b.(3) above. The SFWMD's operation plan will be evaluated by the Corps with whatever additional analyses are deemed necessary and approved by the Corps prior to implementing the operations plan. The Corps also plans to consult with the USFWS and NMFS for endangered species as appropriate once a final operations plan is developed as indicated in Paragraph 10.f.(1) of this Memorandum. For the purposes of this permit decision, the final operations plan is defined as the operation plan that is developed when all of the Acceler8 projects are brought on line.

b. Compensatory Mitigation Evaluation and Monitoring: The project impacts are projected to be offset by environmental benefits to the south Florida ecosystem as a result of the Acceler8 projects working in concert as well as benefits associated with the EAA Reservoir A-1 stand alone. The Corps recognizes the benefits of the mitigation plan are based on assumptions that a final operation plan which sends water to the EPA is in place and recognizes that the full benefits will not be realized until such time. The Corps' evaluation of the benefits associated with the Acceler8 projects is a fluid evaluation which will continue to be updated by the interagency team as individual Acceler8 projects come on line and a final operations plan is developed. The Corps has developed a mitigation monitoring plan for the project which is consistent with the MAP developed by RECOVER. In addition, there are adequate permit special

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conditions for addressing the mitigation plan to ensure the environmental benefits are achieved. The SFWMD is currently collecting 24-hour flow weighted composite samples for total phosphorus at each inflow point as well as continuous flow monitoring. No intentional bypass discharges are anticipated as a result of the EAA Reservoir A-1 project; however any bypass discharges would be reported in accordance with the NPDES requirements.

c. Operational Constraints of STA 3/4: The analysis presented in the FEIS (Annex D page D-1932) is based on the SFWMM (2x2 model) 2010A1 model run for the simulation period 1965 to 2000, and Total phosphorus (TP) concentrations for the varying sources pulled directly from the Everglades Agricultural Area Regional Feasibility Study. The analysis supports the conclusion that STA 3/4 will not be overloaded. Furthermore, the SFWMD has committed to adaptively manage the system so as to ensure that system operations remain in compliance with the SFWMD's NPDES permit for STA 3/4.

As stated on Pages 2-38 and 6-4 of the FEIS "The operational goals of the EAA Reservoir A-1 are to capture and store Lake Okeechobee Regulatory releases (model results indicate approximately 281,000 acre-feet annual average)... releases from the reservoir into STA-3/4 would not result in failure to meet legal requirements including NPDES discharge criteria."

The Corps is currently conducting the LORSS that may identify differing quantities of Lake Okeechobee water being treated by STA 3/4. An Environmental Impact Statement for the Regulation Schedule change has not been completed. This information will be evaluated when complete and the Corps will determine whether additional NEPA documentation is required for this project. Furthermore, the LORSS change is only anticipated to be an interim change until 2010 and therefore does not factor in the EAA A-1 Reservoir and the reservoir's ability to achieve ancillary TP reductions (projected to be 16%). With the reservoir factored into the analysis additional water could be directed south and remain in compliance with the SFWMD's NPDES permit for STA 3/4.

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As detailed above, the analysis provided in the FEIS is based on the long term historical trends of flows and loads in the EAA as detailed in the Everglades Agricultural Area Regional Feasibility Study, October 2005. While current lake concentrations are above historical trends, it is not reasonable to expect that these elevated concentrations will persist throughout the life of the project.

d. The without project analysis is based on a different hydrologic model than was used in the with-project assumptions which violates a basic analytic principle. The Corps disagrees with the comment. Currently, there is no program to implement RDO outside the CERP/Acceler8 processes. Therefore, including RDO in the without project condition would not be appropriate. Furthermore, the SFWMD plans to implement RDO in the Everglades, to the extent necessary, to optimize the operations and benefits of the EAA A-1 Reservoir. CSOP was not included in the base conditions because the NEPA process has not been concluded, and the ultimate configuration has not been determined. As a result, the best available information from the Mod Waters and C-111 projects was included in the modeling to support the FEIS for the EAA A-1 Reservoir.

Additionally, the Acceler8 modeling has a different purpose than performed for the EAA PIR: the Acceler8 modeling was performed specifically for the regulatory action and is needed to derive the system wide benefits for compensatory mitigation purposes. The Acceler8 modeling was performed based on an assumed implementation timeframe of 2010, and includes all projects assumed to be on line at that time, including the Modified Waters Delivery project. On the other hand, the PIR modeling is based on the requirements set forth in the CERP Guidance Memoranda and applies to CERP projects, not regulatory actions.

e. Reduction of Damaging Flood Releases from the EAA to the WCAs: The Corps disagrees with the comment that the goal of reducing damaging flood releases from the EAA into the WCAs is not met. One of the purposes of the EAA A-1 Reservoir is to improve the timing of environmental deliveries to the WCAs,

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including reducing damaging flood releases from the EAA. Modeling results for the summary mean annual water budget show that with the EAA A-1 reservoir, there will be no direct flood control releases from Lake Okeechobee to the WCAs versus without the EAA A-1 Reservoir. These flows are diverted to the reservoir then through the STAs prior to discharge to the WCAs, eliminating regulatory releases directly to the WCAs, thus accomplishing water quality improvements and metering of high flows into the WCAs during periods of high stages during the wet years. In the extreme wet years, modeling results for WCA 3A (Annex D) show with the EAA A-1 Reservoir, undesirable high events are reduced. Results for occurrence of undesirable extreme low events during the dry years in the north and south section of WCA 3A are improved or do not change from the baseline condition. Furthermore, these operational goals and the operational intent of the project, are addressed in Chapter 2, pages 2-38 to 2-39, of the FEIS and are supported by results of the Dynamic Model for Stormwater Treatment Areas (DMSTA) for STA 3/4 stating the treatment capacity of the STA will not be exceeded.

f. Model results show that WCA 3A would be back to IOP high water levels after Mod Waters which is designed to lower those water levels is completed. Model results do show that the project would have similar impacts as IOP since the IOP operating plan was used in the simulations. CSOP is anticipated to lower water levels in WCA 3A. The SFWMD plans to incorporate CSOP in model runs as the NEPA evaluation for CSOP is completed and the project is approved. Currently CSOP is expected to be on line before operation of EAA Reservoir A-1 commences. If it is not, then the project will be operated more conservatively as discussed in Paragraph 8.b.(3) of this Memorandum in order to avoid harmful water levels in the WCAs.

g. The reductions in estuary releases do not justify the project and/or are not enough. This project is not intended to fully restore the estuaries. Its contribution to restoration is by eliminating damaging releases from Lake Okeechobee. Other CERP and Acceler8 projects as well as other ongoing local programs are needed to achieve restoration of the estuary. An objective of this project is to contribute to the reduction of

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damaging discharges from Lake Okeechobee to the Caloosahatchee and St. Lucie Estuaries. While the CERP and Acceler8 projects are intended to function together, implementation of all projects simultaneously is not feasible.

The Corps disagrees with the comment that the EAA A-1 Reservoir project only reduces high water events in the St. Lucie and Caloosahatchee Estuaries by one event. This comment is based upon only the extreme high discharge event, greater than 3000 and 4500 cubic feet per second (cfs) respectively. To the contrary, the project reduces the other high flow and low flow events as shown below, both of which exert influence to the salinity envelope which has a direct effect on the estuarine community i.e. vegetation, fish and invertebrate. In addition, reductions in high flow events will improve the water quality by reducing nutrient loads flowing into the estuaries, thereby reducing the occurrence of algal blooms. Improvements to both salinity patterns and water quality will positively affect the 5,120 and 16,300 acres of estuarine communities comprising the St. Lucie and Caloosahatchee Estuaries, respectively. Model results for the EAA Reservoir A-1 as discussed in Annex D of the FEIS which describe expected benefits are:

St. Lucie Estuary:

- Reduce high events (2000-3000 cfs) by 4 vs. base condition of 44 events
- Reductions in high events due to Lake Okeechobee regulatory releases > 2000 cfs by 2 vs. base condition of 53 events
- Reduce low events (> 300 cfs) by 1 vs. base condition of 26 events
- Improve flows meeting desirable salinity envelope
 - o Low flow events <350 cfs by 7 vs. base condition of 130 events
 - o High flow events >2000 cfs by 2 vs. base condition of 53 events

Caloosahatchee Estuary:

- Reduce extreme high events (>4500 cfs) by 1 vs. base condition of 38 events

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- Reduction in high events to Lake Okeechobee regulatory releases >2800 cfs by 6 vs. base condition of 39 events
- Reduce high events (>2800 cfs) by 6 vs. base condition of 78 events
- Improve flows meeting desirable salinity envelope
 - Low flow events <300 cfs by 8 vs. base condition of 135 events
 - High flow events >2800 cfs by 6 vs. base condition of 39 events

With all Acceler8 projects on line, additional benefits to the St. Lucie and Caloosahatchee Estuaries improve over base conditions are anticipated and benefits based on modeling results are:

St. Lucie Estuary:

- Reduce high events (2000-3000 cfs) by 8 vs. base condition of 44 events
- Reduce low events (> 300 cfs) by 4 vs. base condition of 26 events
- Improve flows meeting desirable salinity envelope
 - Low flow events <350 cfs by 5 vs. base condition of 61 events
 - High flow events >2000 cfs by 9 vs. base condition of 53 events

Caloosahatchee Estuary:

- Reduce extreme high events (>4500 cfs) by 11 vs. base condition of 38 events
- Reduction in high events to Lake Okeechobee regulatory releases >2800 cfs by 6 vs. base condition of 39 events
- Reduce high events (>2800 cfs) by 17 vs. base condition of 78 events
- Improve flows meeting desirable salinity envelope
 - Low flow events <300 cfs by 38 vs. base condition of 135 events
 - High flow events >2800 cfs by 11 vs. base condition of 39 events

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h. Additional alternatives such as a STA or flowway should be considered. An alternative which involves the construction and operation of a STA on the Cell A-1 site was not considered to be a viable alternative because it would not meet the basic project purpose which is to store water. STAs are designed to treat water and as such normal water elevations fluctuate from 0.5 feet to 2 feet to allow for growth of SAV and emergent plant species. Assuming 2-foot elevation on 16,000 acres (additional acreage would be utilized to support levees around the project as well as internal levees between treatment cells), a storage capacity of only 32,000 acre feet would be provided. A STA located on the A-1 site would fail to meet the goals and objectives for the project as described in the FEIS, Section 1.4.2 with the exception of "providing public access and recreation opportunities".

Construction of a flowway was considered in the Restudy and Programmatic EIS. This option was screened out as an alternative in the FEIS in Section 2.1.1 due to a number of problems concerning its feasibility, including soil subsidence, evapotranspiration, seepage management, invasive exotic vegetation management, timing of flows, and lack of flow events. Additional EAA issues included numerous roads, bridges, and railroad relocations would be required if a flowway cuts through and divides the entire area as well as significant HTRW concerns.

i. Adverse Seepage Effects on Surface Water and Hydroperiods in HLWMA: The effects of reservoir seepage on the hydroperiod in the HLWMA have been discussed with the FFWCC. As described in the FEIS in Sections 2.4.1 and 4.3.2, there will be limited seepage affects on the eastern edge of HLWMA when the EAA Reservoir A-1 is at or near capacity. This is further discussed in Paragraph 8.b. (2) of this Memorandum. Although there will be impacts as a result of seepage, the information available to date suggests the impacts would be minimal and seepage control technology would mitigate the impacts. The permit will be conditioned to include a monitoring program of groundwater levels in the farmland to ensure flood protection is being maintained or

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improved and surface water elevation monitoring in the HLWMA to ensure no adverse environmental impacts.

j. Wetland Jurisdiction within the EAA: Within the project site and EAA region in general, historic Everglades communities were converted to agricultural crops through land management, and therefore the site does not exhibit large areas of native habitat or a high degree of wetland habitat function. The NRCS has classified the farmed fields of the EAA as PC. Only the NRCS can classify an area as a PC, and according to their regulations, once a property changes from agricultural use to non-agricultural use, a PC designation is not applicable and the land becomes subject to regulation under Section 404 of the CWA. At that point, the Corps makes an independent assessment, in accordance with the Federal Wetland Delineation Manual, of whether an area is a wetland or whether it has been converted to non-wetland.

The EIS does not make the claim that the entire EAA is considered jurisdictional atypical wetlands but rather in general there are hydric soils and wetland areas throughout the EAA. A portion of the agriculturally managed lands within the EAA may be found, upon detailed examination, to not exhibit the hydrology necessary to meet the federal definition of a wetland. However, in Compartments B and C where managed agricultural activities were abandoned, wetland plant species are naturally recruiting.

The CWA statute and the Corps' implementing regulations regarding PC lands (33 CFR Part 328.3(a) (8)) do not exempt PC land from abandonment, meaning that if a crop has not been produced on the land for at least five consecutive years and wetland conditions are present, the property is considered to be abandoned. It has always been the intent of the Corps and USEPA to recapture into Section 404 jurisdiction abandoned PC land that has reverted back to wetlands. This is clearly addressed in the preamble at Federal Register, 58, No. 163, 45031-45034.

In addition to some of the farmed fields within the EAA being classified as jurisdictional wetlands, many of the agricultural canals/ditches are also classified by the Corps as "Waters of the United States". The general configuration of the farms

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throughout the EAA was designed for production of sugarcane, but the design could also accommodate row crops. The smallest of the larger ditches (these are sometimes termed laterals) are about 4-foot to 10-foot wide at the water surface and about 4 foot deep) and are usually spaced about 660 feet apart. These ditches lead into a larger ditch, situated either around the perimeter of or within the farm area. During the wet season, water is normally pumped from the central/perimeter ditches into a Conservancy District Canal which is then routed to one of the main canals (Miami, New River, Hillsboro, etc.) where it is transported to the coast. Because the larger ditches had been previously excavated from Waters of the United States they remain Waters of the United States (See Corps 2000 preamble to its Nationwide Permits at Federal Register Vol. 65, No. 47, March 9, 2000, page 12823). Figure 4-1 on page 4-15 of the FEIS shows the C&SF Project major canals and their accessibility to the West Indian manatee. These canals all re-route formal natural flows of other waters of the United States. Under the Jacksonville District's traditional approach, canal and drainage ditches in Florida are tributaries if they re-route former natural flows of waters of the United States. Specifically, if a canal or ditch replaces flow that previously occurred through a slough system or by sheetflow across the landscape that canal or ditch has replaced the former water flow and becomes a tributary water of the United States.

In response to the comment that the EAA does not exhibit any wetland characteristics, the Corps conducted additional site investigations to assess soils and hydrology within the project site with a federal soil scientist from the NRCS on 6 July 2006. To gather a representative sample of the entire area, twelve pits were dug throughout the project site. All soils in the pits were determined to have hydric soil indicators (field data forms are included in the Administrative Record). The NRCS had previously mapped the project site as Pahokee and Lauderdale Soil Series. This was found to be accurate during the investigation with a minor inclusion of Dania Series. All three of these soil series are classified as histosols which in itself is a field indicator of hydric soils. Wetland hydrology i.e., surface water inundation and/or saturated soils within the upper twelve inches was also present within all twelve pits/sites sampled. The

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dominant vegetation within all sites was sugarcane. According to Section F of the 1987 Federal Wetland Delineation Manual, the entire site currently meets the criteria necessary for it to be considered an "atypical wetland."

It should be noted that at the time of this ROD, no guidance or change in policy has been directed to the field as a result of the 19 June 2006, Supreme Court ruling Rapanos versus United States. Should we receive a directive or guidance announcing any changes in criteria for determining jurisdiction, we will re-evaluate the project site in the Jacksonville District, including those within the EAA, accordingly.

k. General Wildlife Comments by USFWS: This Memorandum acknowledges that the bald eagles are actively nesting in STA 2 since information at the time the FEIS was prepared indicated the nest was destroyed by a hurricane in 2004. A permit condition has been added to address inundation of the reservoir during burrowing owl nesting season and clarifying language regarding pre-construction wildlife surveys prior to each construction phase.

l. A revised EIS is needed which includes new information associated with the LORSS and the recent engineering study on the Herbert Hoover Dike. The Corps disagrees with the comment that a revised EIS is needed. Regarding the Herbert Hoover Dike, the Corps is aware of the need for rehabilitation of the dike and conducted technical review in 1998. From that review, implementation of a plan is currently under way. Further, the report referenced by Mr. McAliley did not factor in the Corps' routine efforts to minimize risks, such as maintaining safe lake water levels, performing regular inspections, and making immediate repairs when necessary. The FEIS acknowledges on page 4-1 that as new information becomes available such as the LORSS, the Corps will consider the need to update any analyses associated with the proposed project. The Corps acknowledges that changing the operations of the lake may affect the operation of the proposed project. Development of the operations plan for the project is ongoing and will be a coordinated effort between the Corps and SFWMD which will consider all interrelated projects

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and constraints in the system. In addition, the Corps will conduct any additional NEPA analyses needed during development of the operations plan and consult with USFWS and/or NMFS as appropriate. This is also addressed in the permit specific conditions.

m. The Corps is issuing a permit without completing modeling or the NEPA process. The Corps disagrees with this comment. As discussed in Paragraph 7.a above, because of delays in completion of the Final PIR/EIS for the federal CERP EAA Storage Reservoirs project, the SFWMD is pursuing a Department of the Army permit prior to completion of the CERP EAA Storage Reservoirs FEIS. The Corps has completed the NEPA process for the proposed project which is strictly a regulatory action. The EAA Reservoir A-1 was included in all of the alternatives for the CERP EAA Storage Reservoirs project. This project may or not become a federal CERP project. A DSEIS was prepared which supplemented the Draft PIR/EIS to address the regulatory project and the spin off of the regulatory action from the PIR process. The DSEIS was circulated for public and agency review for a period of 45 days. Model runs for the regulatory action were performed to support the environmental analysis and to respond to comments on the DSEIS. A Notice of Availability for the FEIS for this regulatory action was posted in the Federal Register on 19 May 2006. Annex D of the FEIS includes the modeling information for the project. Thus modeling and the NEPA process for the proposed project have been completed.

12. Public Hearing Evaluation: The Corps did not receive any request for a public hearing during evaluation of the permit application.

13. Determinations:

a. Compliance with 404(b)(1) guidelines. Having completed the evaluation in Paragraph 8 above, I have determined that the proposed discharge complies with the 404(b)(1) guidelines.

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b. Public interest determination. I find that issuance of a Department of the Army permit is not contrary to the public interest.

c. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. At this time construction will be conditioned to include only portions of the project excluding the pump stations. The northeast pump station proposed for the EAA Reservoir A-1 may affect air quality; thus compliance with this act will be required. The SFWMD shall apply for these permits during the construction and operation phases. Prior to modifying the permit to include construction of the pump station, it must be demonstrated that the activities proposed will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

d. Compliance with CERP: This decision to permit the EAA Reservoir A-1 project is based on the agreement by the SFWMD to design, construct, and operate the project consistent with the requirements of the WRDA of 2000, applicable federal and state law, and the C&SF Project purposes as a whole. The State has acknowledged that it will be in full compliance with the Programmatic Regulations, President/Governor Agreement, and Section 601 of WRDA 2000 prior to execution of a Project Cooperation Agreement in order for the project to become a federal project.

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