

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



EDWIN P. ROBERTS, DC
Pensacola

RODNEY BARRETO
Miami

SANDRA T. KAUPE
Palm Beach

H.A. "HERKY" HUFFMAN
Enterprise

DAVID K. MEEHAN
St. Petersburg

JOHN D. ROOD
Jacksonville

RICHARD A. CORBETT
Tampa

KENNETH D. HADDAD, Executive Director
VICTOR J. HELLER, Assistant Executive Director

BRIAN S. BARNETT, INTERIM DIRECTOR
OFFICE OF ENVIRONMENTAL SERVICES
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

October 14, 2003

Mr. James C. Duck
Chief, Planning Division
Environmental Branch, South Florida Section
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Comprehensive Everglades Restoration
Plan; Scoping Notice for Site 1
Impoundment Project, Palm Beach County

Dear Mr. Duck:

The Office of Environmental Services, Everglades Protection and Restoration Program, of the Florida Fish and Wildlife Conservation Commission (FWC), received the scoping notice for the referenced project, which is a component of the Comprehensive Everglades Restoration Plan (CERP). Our office has coordinated with the FWC Division of Freshwater Fisheries in determining appropriate recommendations for this project and is submitting this Planning Aid Letter in response to your request.

Background

The Site 1 Impoundment Project was recommended as a component of the Central and South Florida Comprehensive Review Study Feasibility Report and Integrated Environmental Impact Statement in April of 1999. The proposed location for the Site 1 Impoundment (previously known as the Hillsboro Impoundment) is a 2,340-acre area adjacent to the Hillsboro Canal and south of the Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR) in Palm Beach County. The project was originally a component of the Water Preserve Areas (WPA) Feasibility Study, and several alternative project designs were described and evaluated in the feasibility study report (USACE and SFWMD 2001). The preliminary alternative included two compartments totaling 1,660 acres with water levels fluctuating up to 8 feet above grade, surrounded by a seepage collection canal. The S-39A structure would be replaced with a new structure designated as S-527B. Operational changes would include redirecting North Springs Improvement District flows, intended for Water Conservation Area 2 (WCA-2), northward via the L-36 Borrow Canal to the Hillsboro Canal where the volume can be pumped into the impoundment. The conveyance of the Hillsboro Canal would be increased from the

impoundment inflow structure east to the Lake Worth Drainage District (LWDD) E-1 Canal to allow back-pumping of additional flows from the western Hillsboro Canal basin. Water stored in the impoundment would be used to supplement water deliveries to the Hillsboro Canal, thus reducing demands on Lake Okeechobee and LNWR (USACE and SFWMD 2003). Under the current planning process, alterations to the preliminary alternative will be evaluated during project development, and some or all of the features described in the preliminary alternative may be removed, replaced, and/or modified in the final project design.

The goals of the Site 1 Impoundment project are as follows: 1) increase the quantity of water available to both the Everglades and to developed areas east of the project site and 2) improve the timing and distribution of water deliveries within the study area. Project objectives identified to date include: 1) improve hydroperiods and hydroperiods in the LNWR and 2) increase the amount of water available for municipal, industrial, and agricultural water supply (USACE and SFWMD 2003). To meet these goals and objectives, the project will capture water that is currently being lost to tide and use it for water supply deliveries (including protection against saltwater intrusion into the aquifer) in the project area during the dry season. Water quality improvements and flood protection may also be provided by the additional storage created in the impoundment.

Issues and Recommendations

Our staff has identified the following issues and recommendations that it would like to have the Project Delivery Team address.

Benefits/Impacts to Existing Natural Area Water Sources

Assess the benefits/impacts of alternatives on hydrologic conditions in natural areas. Section 3.1 of the Project Management Plan (PMP) states that "creation of this supplemental source of water is expected to result in improved hydroperiods and hydroperiods in the Loxahatchee National Wildlife Refuge (WCA-1) and a reduction in water supply demands on Lake Okeechobee" (USACE and SFWMD 2003). The project may also influence hydroperiods in WCA-2, as flows from the North Springs Improvement District may be re-routed away from WCA-2 and into the Site 1 Impoundment (USACE and SFWMD 2001). The Project Delivery Team (PDT) should use performance measures, such as "Hydroperiods and hydroperiods in LNWR and WCA-2" and "Stages in Lake Okeechobee" to evaluate the extent to which alternative plans meet the environmental goals and objectives.

Clarify the recipients of impoundment discharges. The PMP states that one of the project goals is to improve water deliveries to the Everglades. However, it is not clear whether water deliveries are to be improved only by re-routing excess water to the impoundment during the wet season, or whether water releases would also be made from the impoundment to the Everglades during the dry season. In addition, we understand that CERP projects will be expected to create "water reservations" for the natural environment under the forthcoming Programmatic

Regulations. If so, will such a reservation target specific natural area basins or will it reserve water only for a region-wide water budget? We request that the PMP, a) specify the recipients of water deliveries from the impoundment, b) indicate whether this project is expected to create a water reservation for the natural environment, and c) specify which natural area basin is expected to benefit from such a reservation.

Assessment of Existing Conditions

Evaluate existing habitat values in the study area. The Site 1 Impoundment will convert existing habitats to deep-water reservoirs within the project footprint. A field evaluation methodology should be utilized to determine existing habitat functional value within the proposed reservoir site and in nearby areas potentially affected by reservoir operations. Evaluations will allow the PDT to determine the benefits/impacts associated with alternative project designs.

Assessment of impacts to listed species. Field surveys should be conducted to determine whether habitats within the project footprint are being utilized by listed species. State listed species potentially occurring within the project footprint include: *Alligator mississippiensis* (American alligator), *Drymarchon corais couperi* (eastern indigo snake), *Ajaia ajaja* (roseate spoonbill), *Aramus guarauna* (limpkin), *Egretta caerulea* (little blue heron), *Egretta thula* (snowy egret), *Egretta tricolor* (tricolored heron), *Eudocimus albus* (white ibis), *Grus canadensis pratensis* (Florida sandhill crane), *Haliaeetus leucocephalus* (bald eagle), *Mycteria americana* (wood stork), *Rostrhamus sociabilis plumbeus* (snail kite), *Trichechus manatus* (West Indian manatee), *Speotyto cunicularia* (burrowing owl), and *Gopherus polyphemus* (gopher tortoise). FWC staff from the Office of Environmental Services will provide additional suggestions on avoidance of fish and wildlife impacts during project development. Additionally, the FWC Permit Coordinator in Tallahassee should be contacted for more details on permit requirements.

Indicate status of Phase II Hazardous, Toxic, and Radioactive Waste assessment. In Section 7.16 of the Draft WPA Feasibility Report and SEIS, the authors recommend a Phase II Hazardous, Toxic and Radioactive Waste (HTRW) assessment be conducted for the project areas that border the State Priority-Listed Sites and the former landfills (USACE and SFWMD 2001). Is the Site 1 Impoundment one of these areas? If so, what is the status of the Phase II assessment?

Assess impacts to existing recreational access. The FWC currently provides access to WCA-2A via a ramp along the L-36 borrow canal just west of the proposed impoundment. Road access to this ramp should be maintained.

Modeling Considerations

Evaluation of “next-added” and “last-added” increments. Section 8.1.1.1 of the PMP states that several hydrologic simulation model runs and corresponding analyses (including “next-added” and “last-added” increments) were deemed necessary after the release of the draft WPA Feasibility Report in October 2001 (USACE and SFWMD 2003). We request that those identified model runs specific to the Site 1 Impoundment be completed and distributed, so that both RECOVER and the PDT can evaluate the Site 1 Impoundment within the framework of the CERP.

Incorporation of sea level rise in future conditions simulations. The August 12, 2003 draft CERP Guidance Memorandum (CGM), “Sea Level Rise Considerations for Design of CERP Projects” advises that sea level rise should be considered a future-without-project condition and that all CERP components should be designed and operated to ensure that future sea level rise does not adversely impact project performance. The memorandum suggests that the PDT conduct a sensitivity analysis to determine what effects changes in sea level would have on plan evaluation and selection. Projects should consider which designs are most appropriate for the most-probable sea level rise scenario, while giving design and/or operational considerations to the worst-case sea level-rise scenario. As one of the goals of the Site 1 Impoundment project is to protect against saltwater intrusion into the aquifer, we recommend that the PDT fully evaluate the impacts of sea level rise, including the worst-case scenario.

Opportunities to Increase Project Benefits

Investigate means of eliminating reservoir dry-down. Section 7.6.2 of the Draft WPA Feasibility Report and SEIS indicates that both the north and south cells of the Site 1 Impoundment would undergo cycles of 4-foot depths followed by dry downs within one to two month intervals. Does this mean depths will be going from 4 feet to dry within a one to two month period? If so, for how long will the reservoir remain dry? Dry-downs could cause soil oxidation, resulting in flushing of contaminants, including methyl-mercury, phosphorus, and agricultural chemicals, upon re-wetting (USACE and SFWMD 2001). We are also concerned with the impact of dry downs on wetland flora and fauna within the reservoir. The PDT should evaluate the feasibility of increasing levee heights and/or reservoir acreage such that frequent dry downs are eliminated. However, if evaluations indicate that providing increased quantities of water to prevent dry-downs in the reservoir would diminish the ability to improve hydroperiods in upstream natural areas, then restoration of upstream depths and hydroperiods should take precedence.

Incorporate existing vertical structure into designs for the impoundment. Fish and wildlife habitat would be improved if, during reservoir construction, standing timber were left in place within the impoundment. When the St. Johns Water Management District left standing timber within the Stickmarsh/Farm 13 Reservoir, reservoir operations were not negatively impacted and the recreational value is believed to have been greatly enhanced. Timber provides habitat and detritus for lower levels of the food chain, upon which fish, birds, and reptiles rely. The vertical

structure of clusters and/or individual trees or snags offers perching, nesting, and roosting structure for birds, and habitat for turtles and other reptilian fauna (Kadlec and Knight 1996).

Incorporate native riparian vegetation and littoral shelves into design of the impoundment.

The habitat functional value of the Site 1 Impoundment could be improved by establishing native vegetation along the seepage collection canals and the impoundment levee. Similarly, as recommended in Section 7.6.2 of the Draft WPA Feasibility Report, "ground cover could be improved by designing topographic shelves along the levee at optimal elevations"(USACE and SFWMD 2001). Establishment of riparian and littoral vegetation will: enhance the food web; provide habitat for reptiles, small birds, and other wildlife; and improve water quality by intercepting sediments, removing nutrients, and reducing near-shore water temperature (USACE and SFWMD 2002).

Incorporate deep-water refugia into the impoundment. Under the plan recommended by the WPA Feasibility Study, the Site 1 Impoundment would be subject to wide variations in water level. Severe draw-downs of the impoundment could lead to significant fish kills. Deep-water refugia provide important habitat for aquatic wildlife (e.g. fishes, herpetofauna, and aquatic invertebrates) during periods when the surrounding area is dry and act as a "seed source" of aquatic organisms upon subsequent re-flooding of the reservoirs. Deep-water refugia may also provide temporary feeding grounds for avian species such as wading birds and enhance nutrient removal from the water column by allowing uninterrupted submerged aquatic vegetative (SAV) growth (USACE and SFWMD 2002). The 1.7-acre refuge described in the feasibility study appears too small for a 1,660-acre reservoir. We recommend that at least 10% of the total reservoir area be excavated to a depth of 4 feet below reservoir floor elevation.

Incorporate features for maintaining dissolved oxygen (DO) levels. The Draft WPA Feasibility Report and SEIS, Section 7.10, states that the Site 1 Impoundment is projected to release effluent with DO concentrations approximately 34 percent lower than those of inflow waters (Inflow = 4.90 mg/L; Effluent = 3.09 mg/L), but slightly exceeding 3 mg/L (USACE and SFWMD 2001). As projected DO levels fall toward the low end of the range acceptable for marsh fisheries, we recommend that predicted DO levels be considered as a performance measure across project alternatives and that features to improve DO levels within the impoundment be investigated.

Incorporate features that will improve discharged water quality. The Draft WPA Feasibility Report and SEIS, Section 7.10.2, indicates that the Site 1 Impoundment will exhibit only a moderate capacity to improve water quality in terms of TP, suspended solids, and pathogenic organisms (USACE and SFWMD 2001). Since some of this water will ultimately reach the estuarine and marine systems, water quality enhancement should be incorporated into the project design. The Clean Water Act requires that discharge waters must not degrade water quality of receiving water bodies and the project may require a NPDES permit. Reservoir designs that allow for extended hydraulic residence time and incorporate littoral and riparian vegetation or other water quality enhancement features could improve discharge water quality.

Assess potential for increased water storage capacity. The current water management system in Florida is under stress, with water stacked deep in Lake Okeechobee, detrimental excessive


freshwater deliveries to the estuaries, lack of surety in large-scale ASR feasibility, and rapid urban development of potential water storage sites. Therefore, we recommend that the PDT assess the potential to increase storage capacity of the Site 1 Impoundment, either through purchase of additional lands or by raising levee heights.

Incorporate additional recreational access features. As Florida's population continues to expand, recreational pressure on existing public lands is increasing, and new reservoirs created by CERP can serve as valuable recreational resources. We understand that a Corps Guidance Memorandum is being drafted specifically to direct projects to consider integration of recreational features into their detailed designs. The Site 1 Impoundment, which will cover approximately 1,660 acres, has the potential to be a valuable new recreational resource and FWC staff from the Office of Environmental Services will provide suggestions on incorporation of appropriate recreational features during project development.

Incorporate features to enhance aesthetics of the reservoir. The Draft WPA Feasibility Report and SEIS, Section 7.14, states that implementation of the WPA project itself may not improve aesthetics in the project footprint (USACE and SFWMD 2001). However, the lack of aesthetic value predicted in the WPA project footprint is not inevitable. Many of the features recommended to improve water quality, habitat functional value, and recreational value of the impoundment will also enhance aesthetics of the area.

In conclusion, we recommend that the PDT: 1) evaluate potential impacts to existing natural area water sources; 2) assess existing environmental and recreational conditions; 3) include specific model evaluations; and 4) pursue opportunities for increased project benefits. For more information on FWC permitting requirements, please contact our Permit Coordinator, Ms. Angela Williams, at (850) 921-5990. Questions regarding our concerns and recommendations can be directed to Ms. Yvette Alger at the Everglades Protection and Restoration office in Vero Beach at (772) 778-5094. We will continue to provide feedback to the PDT as the project is further developed.

Sincerely,


for Brian S. Barnett, Interim Director
Office of Environmental Services

BSB/YA

a:\CERP Site1_scoping YA2 1003.doc

ENV 1-3-2

CC: Ms. Rebecca Weiss, USACOE, Jacksonville
Ms. Jane Tutton, USFWS, Vero Beach
Mr. Barron Moody, FWC, West Palm Beach

Literature Cited

Kadlec and Knight. 1996. Treatment Wetlands. CRC Press: Boca Raton, FL.

U.S. Army Corps of Engineers and South Florida Water Management District (USACE and SFWMD). 2001. Central and South Florida Project Water Preserve Areas Feasibility Study: October 2001 Draft Integrated Feasibility Report and Supplemental Environmental Impact Statement. Jacksonville District Office: Jacksonville, FL.

U.S. Army Corps of Engineers and South Florida Water Management District (USACE and SFWMD). 2002. Preliminary Draft Alternative Plan Evaluation Criteria Hierarchy: Everglades Agricultural Areas Storage Reservoirs, Phase 1. Jacksonville District Office: Jacksonville, FL.

U.S. Army Corps of Engineers and South Florida Water Management District (USACE and SFWMD). 2003. September 2003 Draft Project Management Plan: Site 1 Impoundment. Jacksonville District Office: Jacksonville, FL.

This page intentionally left blank.