

**Winsberg Farm Wetlands Restoration Project
Final Regional Evaluation Report
Prepared by RECOVER**

May 13, 2005

1.0 Introduction and Purpose of the Evaluation

The Winsberg Farm Wetlands Restoration Project Team has completed the plan formulation phase of their project and requested that RECOVER prepare a Regional Evaluation.

The RECOVER Evaluation Team (ET) is an interagency and interdisciplinary scientific and technical team charged with developing and using performance measures for evaluating alternative plans developed for Project Implementation Reports (PIR). The purpose of ET evaluations is to ensure that each PIR selects an alternative that is consistent with the goals and purposes of the CERP, specifically, an alternative that maximizes ecological benefits on a system-wide spatial scale. For evaluating alternative restoration projects, the ET has developed a suite of approximately 40 ecological performance measures and 8 water supply and flood protection performance measures to evaluate project-level alternatives. Performance measures are calculated using output from the South Florida Water Management Model (SFWMM), which is the primary hydrologic simulation model for the CERP. The SFWMM is a regional scale model that provides simulations of hydrologic conditions at a 2 mile by 2 mile spatial resolution. Due to the large-scale resolution of the model and the relatively small hydrologic influence of some CERP projects, ET performance measures will not always illuminate differences in system-wide performance or alternatives even in cases where they occur.

2.0 Project Background.

The Winsberg Farm study area is located in the rapidly developing southeastern Palm Beach County west of the municipalities of Boynton and Delray Beach and east of the Arthur R. Marshall Loxahatchee National Wildlife. The proposed action is the construction of a wetland system hydrated with treated wastewater from the Southern Region Water Reclamation Facility (SRWRF) in Palm Beach County. Palm Beach County, the local sponsor, constructed a similar wetlands project with matching objectives in the mid-1990s called the Wakodahatchee Wetlands. Wakodahatchee is an approximately 50-acre site comprised of a mosaic of upland, emergent marsh, and deepwater habitats. The site has attracted and supported a wide variety of wildlife species and served as a model for the planning of the Winsberg Farm wetland. The tentatively selected plan (TSP) is a 175 acre project footprint with conversion of 150 acres of former farmland at the Winsberg Farms site to a constructed wetland system and a 25 acre nature center with planted upland vegetation. The wetlands would contain a mosaic of deepwater, upland, and emergent marsh zones. The water source for wetland hydration would be the SRWRF, and water would exit the site through evapotranspiration and seepage.

The project is in the process of being built with Palm Beach County funds and this is therefore, technically an “after-the-fact” evaluation.

3.0 Evaluation

The Winsberg Farms project is a relatively small-scale wetlands creation project and remote from the Indicator Regions utilized by the SFWMM. Because of these factors, use of ET performance measures would not likely discern differences between alternative plans or between the tentatively selected plan and the no action alternative. Accordingly, SFWMM simulations of the alternatives for the Winsberg Farms project were not performed. Therefore, the ET cannot use any of its accepted or proposed performance measures to compare alternatives for the project and this evaluation will concentrate on consistency of the selected alternative with the Comprehensive Plan (USACE and SFWMD 1999) and CERP goals and objectives and a qualitative analysis of regional and system-wide effects.

3.1 Consistency with the Comprehensive Plan

Winsberg Farms is included in the Comprehensive Plan as an “Other Project Element” (OPE). During preparation of the Comprehensive Plan, the Restudy team saw many projects that were either outside the domain of SFWMM or that did not create regional effects. These came from a number of sources including Critical Projects, earlier formulation documents, and proposals. Within the context of this review it is important to note that the OPE Evaluation Matrix in the Comprehensive Plan anticipated only local benefits of low significance, only some beneficial effect on ecology and water supply, and no effects on flood control or water quality for this project.

3.1.1 Alternatives

According to the draft Alternatives Formulation Briefing (AFB) Report, the primary objectives of the Winsberg Farm Project are to: “(1) use treated wastewater to restore wetlands in a highly urbanized environment; and (2) reduce the amount of treated wastewater that is being wasted through deep well injection by using it to restore these wetlands, thereby returning the water to the natural environment.” In actuality, the project was identified in the Comprehensive Plan as a wetlands creation, rather than a wetlands restoration project. Eight alternatives were considered for this wetland construction project with areas that ranged from 150 to 640 acres. All alternatives were generally consistent with the conceptual design outlined in the Comprehensive Plan that called for the construction of a 175-acre wetland east of the Loxahatchee National Wildlife Refuge in Palm Beach County. Alternatives were developed and evaluated based on spatial extent of wetlands and an estimation of wetland quality using the Wetlands Rapid Assessment Procedure or “WRAP”. The preferred or TSP alternative was chosen on the basis of cost effectiveness and overall project cost and creates the smallest amount of wetland habitat of the studied alternatives. The TSP alternative creates 150 acres of wetlands, 25 acres less than specified in the Comprehensive Plan.

The 25 acres lost from the original plan has been converted into a nature center managed by Palm Beach County.

3.1.2 Consistency with Comprehensive Plan Ecological Goals and Objectives

The Comprehensive Plan (Table 5-1) lists an inclusive set of goals and objectives for the Restudy which includes three bulleted goals under enhancement of ecologic values as follows below.

1. Increase the total spatial extent of natural areas.

The project will result in the creation of wetlands with an ecological functional “lift” when compared to either the baseline agricultural land use condition or the likely “future without the project” residential or commercial development condition. The site is physically separated from the Loxahatchee National Wildlife Refuge (> 3 miles away). It is also separated from the nearby Wakodohatchee wetlands by a major highway (Jog Road) and the L-30 canal.

Winsberg Farms project area soils are classified as non-hydric and moderately well-drained, generally characteristic of non-hydric (upland) flatwoods. Therefore the project will create wetlands in an area that historically had very different habitats. All restoration projects, regardless of size, can provide benefits on a system-wide scale if they have the ability to reduce gaps in landscape corridors and restore habitat connectivity. This project does not increase the contiguity of Everglades wetlands or of historic upland flatwood habitat. However, it does add to the local wetlands base.

It is recognized that non-surficially connected wetlands (aka “isolated wetlands”) are an important component of the Everglades landscape and restoration of such wetlands juxtaposed to other natural landscape features would result in increasing the total spatial extent of Everglades natural areas. While this project will technically increase the extent of wetlands, it is difficult to credit created, managed wetlands physically disjunct from other Everglades habitats as increasing the total spatial extent of *natural* areas within the context of this CERP goal. The goal originated from a perceived major stressor on a key unique natural attribute of the Everglades system (large physical extent) and the concern for cumulative loss of physically and functionally connected Everglades habitats through conversion to other land uses and/or fragmentation by roads, embankments and/or canals.

2. Improve habitat and functional quality.

The project will convert approximately 150 acres of agricultural land to a managed wetland system with increased habitat and functional quality when compared to the current baseline or the “future without project” condition. It is expected to improve habitat conditions for a variety of wildlife including reptiles, amphibians, wading birds waterfowl, migratory song birds, and small mammals.

The source water for the project will be reuse water from the SRWRF which currently injects the water into deep wells. The water has a high total phosphate (TP) concentration (1400 ppb), but the water discharged to the reuse system must be filtered to comply with FDEP 62-610 requirements. This reduces TP concentration by removing particulate phosphorus to approximately 239 ppb. The 150 acres of Winsberg Farm Wetlands provides some assimilative capacity of TP but this is outpaced if flows exceed 3-4 MGD. For this reason, the created wetland will be eutrophic at flows above the 3-4 MGD range. This system will not replicate the oligotrophic marsh of the Greater Everglades Ecosystem but will provide habitat for native species that can tolerate eutrophic habitats. This has been demonstrated at the nearby Wakodahatchee Wetlands.

3. Improve native plant and animal species abundance and diversity.

The created habitats should result in increased use by wildlife including reptiles, amphibians, wading birds waterfowl, migratory songbirds, and small mammals. The Wakodahatchee Wetlands system on which this project is modeled has documented use by approximately 120 species of birds as well as many species of the above listed wildlife groups. Depending upon design and management, native plant abundance and diversity is also anticipated to improve. An intensive exotic control program will be important to ensure that native vegetation objectives are realized.

3.1.3 Consistency with Comprehensive Plan Economic and Social Well Being Goals and Objectives

The Comprehensive Plan (Table 5-1) lists an inclusive set of goals and objectives for the Restudy which includes three bulleted goals under enhancement of economic values and social well being as follows below.

1. Increase availability of fresh water (agricultural/municipal & industrial).

The project will utilize a portion [6-8 million gallons per day (MGD)] of the 34 MGD reuse water from the SRWRF to create the hydrological setting for wetland establishment. This water is currently being injected into deep wells. The ultimate fate of the water entering the site will be recharge of the local surficial aquifer with the exception of losses through evaporation, transpiration and seepage to adjacent surface water canals. However, the limited volume of water added to the system is not expected to have any measurable benefit to the regional system (AFB, page 18).

2. Reduce flood damages (agricultural/urban).

The project will not result in a decrease in the level of service for flood damage reduction.

3. Provide recreational and navigation opportunities.

The project is anticipated to result in local passive recreational benefits similar to those attributed to the nearby Wakodahatchee wetlands (e.g., bird watching, nature photography). In addition, the sacrifice of potential wetland creation space for a nature center (25 acres) will offer an opportunity for environmental education and greater public appreciation of wildlife and wetland systems.

4. Protect cultural and archeological resources and values.

The project should have no effect on any cultural resources listed, or eligible for listing, on the National Register of Historic Places.

4.0 System Wide Performance of the Plan

While small projects may cumulatively enhance system wide performance, it is difficult to individually evaluate and document these benefits. As Palm Beach County has demonstrated with the Wakodahatchee Wetlands, this project may provide wading bird forage habitat, habitat for other local wildlife, local water treatment function, and wetland public awareness and outreach benefits. Conversely, the small size of the project, site selection, lack of landscape connectivity, high nutrient status, and the highly managed nature of the wetland complex would result in individually negligible and unmeasurable benefits on a system-wide basis.

5.0 Summary and Conclusions

The scale of the project and sensitivity limitations of current system-wide tools preclude a typical model-driven evaluation of this project. All alternatives presented by the project team, including the selected alternative, are compatible with the project as outlined in the Comprehensive Plan. The Comprehensive Plan did not predict regional or system-wide benefits from the plan and limited expectations to some local ecological and water supply benefits. The selected alternative, although 25 acres less than envisioned in the Comprehensive Plan should accomplish these objectives.

References

U.S. Army Corps of Engineers and South Florida Water Management District. 1999. Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement.