

**APPENDIX H
RECREATION**

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H RECREATION

H.1 AUTHORIZATION

The Comprehensive Everglades Restoration Plan (CERP), authorized by the Water Resources Development Act of 2000 (WRDA 2000), will involve modifying the Central and Southern Florida (C&SF) Project, which was constructed with extensive congressional authorizations from the 1944 Flood Control Act to the Water Resources Development Act of 1996. The Federal Water Project Recreation Act (Public Law 89-72) and the Water Resources Development Act of 1986 (PL 99-662) provide additional guidance. Further, specific CERP design guidance was signed on May 12, 2000, in the form of the Department of the Army and South Florida Water Management District Design Agreement for Everglades and South Florida Ecosystem Restoration Project.

Additional authorization and guidance for the proposed ancillary recreation resources development is contained in CECW-AG, June 11, 1998, Memorandum, Policy Guidance Letter No. 59, Recreation Development at Ecosystem Restoration Projects and EP 1165-2-502. Despite austere budgets and policy requirements, recreational developments can and do contribute to community health and well-being (CECW, 1998). The recreation resources that are being proposed as part of Winsberg Farm Wetlands Restoration would comply with the philosophy and inclusion of the CESAD-PD-J September 15, 2004, Memorandum, are economically justified, and fall within the 10 percent rule.

H.2 INTRODUCTION TO RECREATION FOR WINSBERG FARM WETLANDS RESTORATION

The recreation resources appendix contains a description of the environmental restoration project, public access, high quality environmental interpretation and educational recreation features. The Winsberg Farm Wetlands Restoration Project was authorized by Section 528 of the WRDA of 1996 and Other Project Elements (OPEs) identified as crucial to overall CERP ecosystem restoration. The Winsberg Farms aerial photograph below displays the Phase I (75 acres) constructed wetland and recreation facilities of the wetland restoration project footprint (150 acres). This analysis will determine the net recreation benefits for the Phase I wetland (cell one and wetland cell 2) restoration. This area is bordered by Hagen Ranch Road, and Canals L-29 and L-30. No recreation access for environmental education or interpretation is proposed for Phase II construction.

Recreation features are being included in the Winsberg Farm Wetlands Restoration Project as an incidental project benefit. However, the recreation benefits will not be used to help justify the selected plan. Palm Beach County Water Utilities Department's (PBCWUD) contractor, CH2MHill, provided the

recreation plan which identified facilities and their locations. The Phase I recreation facilities (visitor center and 25-car parking, boardwalk with shade pavilions and interpretive signage) has been constructed and the local sponsor is requesting credit for the recreation features, as per WRDA 2000, Section 601. Construction costs are displayed in **Table H-4**. Sponsor-prepared plans and specifications were reviewed for adequacy of design (Americans with Disability Act [ADA] and Architectural Barriers Act [ABA]), specifications and constructability to ensure public health, safety and welfare. Total recreation construction costs are provided as \$3,816,000.

The sponsor is interested in cost-sharing the visitor center and parking lot as included on Exhibit E-2, Recreation Facilities Checklist, Page E-293 of ER 1105-2-100, April 2000. The combined total cost of the visitor center and parking lot would be \$2,492,632 which would exceed the 10 percent limit rule, since the total project cost is \$19,135,351. The 6,300 linear feet of boardwalk, constructed for \$1,329,000, is a necessary and integral project component that is more reasonably priced and is within the 10 percent limit rule. The sponsor would appreciate the appropriate credit for the allowed amount in compliance with the USACE recreation cost-sharing policy.

The adjacent Wakodahatchee Wetland treatment area boasts an annual visitation rate of about 125,000 people. Visitors come from all over the state of Florida, nation and foreign countries. School children, professional societies, conference attendees and general public visit the facilities. Based on the current recorded public visitation to the Winsberg Farm Wetlands Treatment Facility over the past seven months, annual visitation is expected to exceed 130,000 visitors per year. The Winsberg Farm Wetlands Restoration impoundments are likely to experience increased visitation due to high-quality environmental education and interpretive opportunities, as well as an increasing public interest in bird watching and environmental education. As available adjacent lands are developed, the local draw of visitors to the Winsberg impoundments will increase, and it is conservatively projected the restoration cells will experience local, regional, state and international visitors. The project location is in an urban area with excellent transportation routes in the immediate vicinity, including interstates, state and county roads, city arteries and collectors/distributor roads.

The proposed features of the Winsberg Farm Wetlands Restoration recreation plan will not require additional real estate to be purchased or project restoration plan to be modified. All features will be compatible with the environmental purposes of the restoration project and will not detract from the environmental or socio-economic benefits being generated by the project. The activities that will be permitted in the restoration cell impoundments (nature study, wildlife viewing, walking, environmental interpretation and education) are all well-

suiting to the environmental purposes of the project. A major recreation attraction of the Winsberg Farm Wetlands Restoration project will be the visitor center, followed by the 6,300 linear feet of boardwalk with interpretive signage and shade shelters that will provide a high-quality environmental interpretive and education opportunity.



FIGURE H-1: WINSBERG FARM WETLANDS RESTORATION CONCEPTUAL RECREATION PLAN

H.3 BENEFIT CATEGORIES

H.3.1 Study Area

The study area for the recreation benefit analysis is specific to Palm Beach County, Florida. The 2000 Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) identifies the proposed project area as part of Region 10, comprised of Indian River, St. Lucie, Martin and Palm Beach counties. Resources-based, recreation activity deficits identified by the SCORP for this region include bicycle riding, freshwater fishing, hiking, saltwater beach activities and saltwater fishing (SCORP, 2000). A National Survey of Recreation and Environment, conducted by the Outdoor Recreation Coalition of America, 1997, determined that recreational walking and bird watching interest in the United States increased 43 percent and 155 percent, respectively, between 1984

and 1995. The National Survey of Fishing, Hunting and Wildlife-Associated Recreation, conducted by the U.S. Fish & Wildlife Service, 1996, determined 32 percent of Florida residents took part in wildlife-related recreation, with 25 percent focused on wildlife watching. To date, 100 different species of birds have been identified in the completed wetlands of Phase 1. The visitor center and parking lot would provide access to 6,300 linear feet of boardwalks with shade shelters and interpretive signage providing a high-quality environmental education experience focused to meet increasing public demands in the wildlife watching arena.

TABLE H-1: RECREATION FEATURES OF CELL ONE LOCATION

Feature	Quantity	Unit Cost	Total Cost
Parking Lot	100,000 SF	\$4.87/SF	\$487,000
Visitor Center	1	JOB	\$2,005,632
Interpretive Signage	4	\$6,250	\$25,000
*ADA Accessible Boardwalk with Shade Shelters	6,300 LF	JOB	*\$1,329,000
Site Total			\$3,846,632
Cost-Shareable Total			\$2,517,632

* Cost-Shareable Recreation Facilities as listed in ER 1105-2-100, Exhibit E-2, Page E-293

H.4 RECREATION BENEFITS

The national economic development (NED) benefit evaluation procedures contained in ER 1105-2-100 (April 22, 2000), Appendix E, Section VII, include three methods of evaluating the beneficial and adverse NED effects of project recreation: travel cost method (TCM), contingent valuation method (CVM), and unit day value (UDV) method.

The UDV method was selected for estimating recreation benefits associated with the creation of Winsberg Farm Wetlands Restoration. The UDV approach in recreation-benefit analysis consists of two parts: determining value per visit and estimating visitation.

H.4.1 Determining Value Per Visit

When the UDV method is used for economic evaluations, planners will select a specific value from the range of values provided annually. Application of the selected value to estimated annual use over the project life, in the context of the with- and without-project framework of analysis, provides the estimate of recreation benefits.

The without-project condition in this analysis has no recreation value since the Winsberg Farm Wetlands Restoration impoundments would not exist and the land would not be open to the public. It is presumed that the impoundments must be opened to the public to realize the recreation benefits being claimed. The with-project condition will be the expected value of the recreational activities based on the UDV method. **Table H-2** illustrates the method of assigning a point rating to a particular activity. The table also shows the point values assigned based on measurement standards described for the five criteria of activities, facilities, relative scarcity, ease of access, and aesthetic factors.

Point-value assignments for **Table H-2** above are based on Economic Guidance Memorandum (EGM) 04-03. The Criteria and Judgment Factors for General Recreation were specifically used as the basis of the estimated point values for the proposed recreation area. Judgment factors were based on site visits and coordination with local agencies. The following selection factors were used for the criteria outlined in **Table H-2**:

- Winsberg Farm Wetlands Restoration Phase I recreation resources provide opportunities for several general-recreation activities afforded by the project setting and wildlife resources associated with the project. The site offers solitude and a very specific setting in a growing urbanized area. It provides specific recreation amenities (as outlined in **Table H-2**) for the expanding regional population and increasing demands for recreation. The environmental restoration component (water treatment and release) would help educate visitors on water treatment and reuse goals. Bird watching and environmental education and interpretation would also be available. High-quality environmental education and interpretation activities would be available to all visitors. Therefore, a mid-range point value of 11 is scored.

TABLE H-2: GUIDELINES FOR ASSIGNING POINTS FOR GENERAL RECREATION

Criteria	Judgment Factors				
Recreation experience Total Points: 30	Two general activities	Several general activities	Several general activities: one high quality value activity	Several general activities; more than one high quality high activity	Numerous high quality value activities; some general activities
Point Value: 11	0-4	5-10	11-16	17-13	24-30
Availability of opportunity 4 Total Points: 18	Several within 1 hr. travel time; a few within 30 min. travel time	Several within 1 hr. travel time; none within 30 min. travel time	One or two within 1 hr. travel time; none within 45 min. travel time	None within 1 hr. travel time	None within 2 hr. travel time
Point Value: 3	0-3	4-6	7-10	11-14	15-18
Carrying capacity Total Points: 14	Minimum facility for development for public health and safety	Basic facility to conduct activity(ies)	Adequate facilities to conduct without deterioration of the resource or activity experience	Optimum facilities to conduct activity at site potential	Ultimate facilities to achieve intent of selected alternative
Point Value: 10	0-2	3-5	6-8	9-11	12-14
Accessibility Total Points: 18	Limited access by any means to site or within site	Fair access, poor quality roads to site; limited access within site	Fair access, fair road to site; fair access, good roads within site	Good access, good roads to site; fair access, good roads within site	Good access, high standard road to site; good access within site
Point Value: 15	0-3	4-6	7-10	11-14	15-18
Environmental Total Points: 20	Low esthetic factors that significantly lower quality	Average esthetic quality; factors exist that lower quality to minor degree	Above average esthetic quality; any limiting factors can be reasonably rectified	High esthetic quality; no factors exist that lower quality	Outstanding esthetic quality; no factors exist that lower quality
Point Value: 9	0-2	3-6	7-10	11-15	16-20

- The availability-of-opportunity rating is based upon current local recreation facilities near the project area in the proposed recreation resource location. A 25-mile radius around the proposed project area represents a fairly dense urban population to the east. A 50-mile radius

- would include more of the Everglades and a couple of other parks with similar opportunities. The proposed visitor center and educational boardwalk would provide high-value environmental education opportunities in the restored wetland project area. Recreation resources will help to provide centrally located facilities for current national recreation trend participation in a growing urbanized area. Since there are a couple similar recreation opportunities available within a one-hour travel time and a few within a 30-minute travel time, the point value given to this criterion is 3.
- Carrying capacity values are based on the optimum, potential use of the site, without overuse of the recreation resources. High-value environmental education and interpretation comprise a large part of the projected recreation-resource use. Optimum facilities will be constructed to conduct these activities without deteriorating the resource or activity experience. Peak use is expected to occur during half of the calendar year. Therefore, the point value given to this criterion was 9.
 - The accessibility rating is based upon the availability of local highways, roads and streets in good condition that would provide access to the proposed recreation facilities. The project is located in an urbanized area with good primary and secondary road access. The project is located on Hagen Ranch Road which provides good access to the site with paved access and parking once on the site. Hence, the point value given to this criterion is 15.
 - The environmental quality rating is based upon existing aesthetic values. The site possesses above-average aesthetic resources at initial construction. Once the wetland restoration and surrounding landscape embankment matures, aesthetic values will increase. The best aesthetics of the proposed project areas are views from the visitor center out over wetland restoration to the north, northeast and east. Hence, the point value given to this criterion is 7.

The value of a day of general recreation at the proposed recreation sites for the Winsberg Farm Wetlands Restoration Project Phase I was determined using the guidelines for Assigning Points for the General Recreation in **Table H-2**. The points were then converted to dollar values using conversion factors included in Economic Guidance Memorandum 04-03, Unit Day Values for Recreation, 2001, which is based on ER 1105-2-100. **Table H-3** was used to convert **Table H-2** points to a UDV Fiscal Year 2003 dollar amount. The total point value for the recreation sites was determined to be 45. The user-day value conversion equivalent is \$6.

TABLE H-3: CONVERSION OF POINTS TO DOLLAR VALUES

Point Values	General Recreation Values
0	\$3.00
10	3.57
20	3.94
30	4.50
40	5.63
50	6.38
60	6.94
70	7.32
80	8.07
90	8.63
100	9.01

H.4.2 Estimating Visitation

The Winsberg Farm Wetlands Restoration impoundments can support a significant amount of outdoor recreation in the Lower East Coast of Florida. Recreation experiences in the Everglades are unique, few substitutes are readily available, the proportions of income spent on them are very low, and user occasion are frequent. Therefore, the price elasticity of demand for these recreational experiences is low. This means that the percentage change in the number of trips will be lower than any percentage change in the cost of recreating. For example, if there were a 1 percent increase in the cost of a recreation trip, then there would be a decrease in the number of trips by less than 1 percent. In other words, the demand for these relatively inexpensive recreational experiences will not be sensitive to price changes. Therefore, it is highly likely that the capacity of the recreation facility will be used to capacity.

The State of Florida's Department of Environmental Protection's Division of Recreation and Parks coordinated and developed the Florida SCORP for 2000. This information was used to derive and project total recreation participation and allocate this participation from state to regional to local levels. The SCORP includes guidelines for resource-based outdoor recreation activities. These guidelines are based on maximum levels of carrying capacity developed by the Division of Recreation and Parks for use and protection of state park resources.

SCORP was determined to be the best available resource for estimating recreation usage capacity.

The current SCORP indicates Region X recreation resource deficits for the year 2010 to include bicycling, hiking, non-boat freshwater fishing, saltwater beach activities, and saltwater fishing. These deficits will likely increase by the year 2050 as area population almost doubles. For economic justification purposes, user rates were calculated using the capacity projection for 2010. Utilizing the guidelines and demands available from the SCORP, reasonable capacity-rate projections can be determined. Since there is sufficient recreation resource supply in Region X for the nature study according to the SCORP, the resource-capacity approach could be used to determine the number of visits per year for these activities. The resource-capacity approach recognizes that expanded supply of the new recreation facility would increase use to capacity because sufficient resources exist in the market area. The Winsberg Farm Wetland Restoration Project would help supply environmental study and birdwatching resources that national trends show are becoming more popular with the American public.

Use guidelines for the designated nature study were based on carrying capacity guidelines adopted by the SCORP and used by the state park system. The high-value nature study facility could provide the opportunity for 5–20 groups per mile, with two users per group and a daily turnover rate of four per day for a total of 40-160 users per mile of boardwalk per day. The Winsberg Farm Wetlands Restoration Phase I project consists of a high-value visitor center and about 1.2 miles of high-value nature study boardwalks throughout the 75-acre project tract.

Current monthly visitation figures have ranged from 3,000 to 30,000 visitors which could produce annual visitation between 36,000 and 360,000 people. With population projections doubling by the year 2050 for the Lower East Coast region, annual visitation numbers could be much higher. Even though the SCORP Projections for Region 10 show no projected shortage of nature study in the region by the year 2010, Winsberg Farm Wetlands Restoration Phase I recreation resources are planned to provide these activities. The study team believes potential users will increase over the project life. This recreation facility may also function as an outdoor education opportunity for local school students in the immediate project area.

H.5 ECONOMIC JUSTIFICATION OF RECREATION

The justification of incurring additional costs for recreation features is derived by utilizing a benefit-to-cost ratio. The tangible economic justification of the proposed project can be ascertained by comparing the equivalent average annual

charges with the estimate of the equivalent average annual benefits, which would be realized over the period of analysis. These average annual recreation benefits and costs are summarized in **Table H-4**.

TABLE H-4: SUMMARY OF COSTS AND BENEFITS

Total Project Costs	\$19,135,351
Total Recreation Costs	\$4,508,149
'10 Percent Recreation Cost Limit Rule' Total Federal Share	\$4,783,000
Annual Costs	
Interest during PED and Construction	\$134,900
Total Investment Cost	\$1,600,800
Average Annual Cost	\$97,700
Interest	\$80,900
OMRR&R	\$15,500
Annual Benefits	
Unit Day Value (Table H-3)	\$6.00
Daily Use (Table H-5)	125 users
Annual Use (125x 365)	45,625
Average Annual Benefit	\$273,800
Benefit to Cost	2.80 to 1
Net Annual Benefits	\$179,100

Engineering Regulation 1105-2-100 (The Planning Guidance Notebook), APR 2000, provides economic evaluation procedures to be used in all federal water resources planning studies. The guidelines specified in the regulation were used to prepare this cost analysis. The federally mandated project evaluation interest rate of 5 3/8 percent, an economic period of analysis of 40 years and current prices were used to evaluate economic feasibility.

TABLE H-5: POTENTIAL RECREATION PARTICIPATION USER-DAY PROJECTIONS

Activity	Units Provided	Maximum Area Requirements	Turnover Rates	Guidelines	SCORP Region 10 Resource Deficits (Needs)(2010)		Winsberg Farm Expected Users
					User Occasions	Units	
Visitor Center/ Nature Study	1.2 miles	5-20 groups per mile	4/day	40-160 users per mile of trail/day	1,058,861	0 miles	125

This analysis leads to the conclusion that there are nearly 2.8 times the benefits than the costs. The benefit-to-cost ratio for the recreation features equals 2.8 to 1, with net annual benefits equaling \$179,100.

H.6 SENSITIVITY ANALYSIS

A sensitivity analysis was conducted to further reinforce expected benefits and provide extra support for the justification of recreation features. **Table H-6** includes a sensitivity analysis which contains the expected average annual benefits from the above table, a worst-case scenario depicting the number of annual visitors required for benefits to equal costs, and a scenario in which SCORP guidelines are utilized as they are presented. As can be noted from this sensitivity analysis, a minimum average rate of 45 users per day would be required to justify the proposed costs for recreation, and following the minimum guidelines from SCORP the expected minimum benefits from the site could be \$3.5 million.

TABLE H-6: SENSITIVITY ANALYSIS USING MULTIPLE SCENARIOS

Scenario	Annual Users	Daily Users	Annual Benefit
Worst-Case Scenario	16,425	45	\$98,550
Projected Scenario	45,625	125	\$179,100
SCORP	1,058,861	2,900	\$4,156,537