Draft

FINDING OF NO SIGNIFICANT IMPACT

TEN MILE CREEK WATER PRESERVE AREA

ST. LUCIE COUNTY, FLORIDA

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

The proposed action would occur within a citrus grove and pasture. Minimal environmental resources occur on this site. No eligible historic resources are found on the site.

b. The Fish and Wildlife Coordination Act Report of 1 April 1999, indicates no objection by the Department of the Interior and full compliance with the Endangered Species Act and the Fish and Wildlife Coordination Act.

c. Pending the State's concurrence with the Coastal Zone Consistency (CZM) Determination (Appendix C of the EA), the action is consistent with the State's CZM programs.

d. Pending completion of consultation with the State Historic Preservation Officer and the National Park Service, sites of cultural or historical significance will not be affected.

e. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources, including the following: (1**)** Dike raising would occur within the foot-print of the existing diked disposal site. (2) Fill material would be obtained from the interior of the WPA and polishing cell. (3) Any water based activity (none is expected at this time) would follow standard manatee protection measures. (4) The Jacksonville District's Migratory Bird Protection Policy would be followed if any migratory birds are encountered. (5) Prior to construction, the State must concur with the Coastal Zone Consistency Statement. (6) Prior to construction, the State Historic Preservation Officer must concur with the Jacksonville District's determination of no effect on any eligible historic resources.

_____

Joe R. Miller Date
Colonel, U.S. Army
District Engineer

Critical Project, Ten Mile Creek

Project Description

There is a need to regulate the delivery of freshwater to the St. Lucie River and in turn to the Indian River Lagoon (IRL). This need was clearly established by the Indian River Lagoon Surface Water Management and Improvement Plan (SFWMD IRL SWIM plan, 1994). This plan identified excess freshwater as a major pollutant to the St. Lucie Estuary (SLE) and the IRL. Freshwater is considered a pollutant when it is delivered all at once by canals (that is, when too great a volume is delivered over a short time period, causing salinity in the estuary to drop below optimal levels for desired plant and animal communities). Conversely, lack of flow is also detrimental to the estuary. Inflows to the SLE such as Ten Mile Creek, C-23, C-24, C-25, and C-44 efficiently drain the land while increasing the drainage area as compared to the historic natural system. This altered freshwater delivery changes salinity concentration of the estuary, resulting in changes unfavorable to seagrass and benthic organisms which are at the base of the food chain, and potentially affects many other organisms dependent on the estuary for part of their life history requirements.

Implementation of the recommendations of the plan is a primary responsibility of the Indian River Lagoon Feasibility Study. The goal of the feasibility study is to develop plans to restore desirable salinity concentration in the estuaries. Construction of surface water detention systems, including reservoirs or Water Preserve Areas (WPA), is a probable means of reaching that water quality goal. One of the potential WPA sites is the 10 Mile Creek site. This site was selected as a critical project for the Central and South Florida Restudy. The 10 Mile Creek WPA would help to attenuate high volume 10 Mile Creek basin runoff into the SLE.

There is also a need to improve water quality in the Ten Mile Creek basin. Most of the upstream basin is in agricultural land use. Run-off from agricultural land tends to have a higher load of suspended solids and nutrients than native land cover. Capturing and detaining this run-off will allow most of the solids to settle out of suspension and remove a portion of the nutrient load. Vegetation in the reservoir and in the downstream polishing cell will also consume nutrients (Kadlec and Knight 1996, Fall and Hendrickson 1988). Precise nutrient concentration goals for the estuary have not been set, but it is clear that detention facilities will have a positive impact on water quality as well as the quantity and timing of freshwater delivered to the estuary.

The Ten Mile Creek Water Preserve Area (WPA) reservoir berm will be 15-20 feet high and the side slopes are to be 1 vertical on 4 horizontal. Water depths will range from 0 to 10 feet and when filled have a total storage potential of 5000 acre-feet. The WPA will be near capacity 27% of the time. A 380 cfs pump system of pumps will supply water from Ten Mile Creek into the WPA. A 5000 cfs overflow weir, to prevent levee breach, will be located downstream of the pump station. A 500 cfs spillway will feed water into the polishing cell. The deep water storage will have a residence time of at least 50 days. The polishing cell levees will be 6.5 ft. high with the same side slopes as the WPA. Box culverts will penetrate the polishing cell and feed an outlet to Ten Mile creek. The polishing cell water depth will optimize water quality benefits.

Created: June 24, 1999