January 3, 2005

Staff with the Broward County Environmental Protection Department has reviewed the November 2004 Draft Master Implementation Sequencing Plan (MISP 2004) for CERP projects and respectfully offers the following comments with regards to the proposed schedule. The Broward County Board of County Commissioners has long been a strong proponent of Everglades restoration efforts and of the Comprehensive Everglades Restoration Plan, as evidenced in County policy and numerous resolutions. With the support of the Broward County Commissioners, staff has advocated for the acceleration of CERP projects and supported the Accelerate initiative, which is expected to result in the expedited implementation of certain critical projects, such as the Indian River Lagoon, the Broward WPA, and the Site 1 Impoundment.

The Accelerate projects are designed to produce numerous environmental enhancements as a result of better hydroperiods, improvements in water quality, and reduced demands on the regional system. While the value of pursuing individual Accelerate projects is certainly recognized and appreciated, it is staff's opinion that the cumulative benefits of the Broward WPA and Site 1 Impoundment could be substantially enhanced with concurrent implementation of the Broward County Secondary Canal Improvement Project. As discussed below, this authorized project not only **complements** the Broward WPA, but is **integral** to its function. Staff is concerned that postponement may reduce the benefits of this, and other CERP projects, as redevelopment and other projects pursued outside of the CERP restrict future water management options.

Complementary to the Broward WPA

Water quality benefits

The Broward County Secondary Canal Improvement Project complements the Broward WPA by increasing the functional capacity of the WPA without requiring additional acquisition of land. Broward County's water managers maintain and operate an elaborate network of secondary canals, a system which offers tremendous surface water storage and treatment capacity and provides some of the same benefits for which the Broward WPA was designed. These benefits can often be gained with fairly minor infrastructural modifications which not only reduce total discharges to the C-11 Canal, but improve the quality of the water that is discharged. As a result, during storm events when back-pumping from the C-11 to the WCA might be required, the quality of discharges to the C-11 would be better than that which is discharged today.

Seepage reduction

Another function of the Broward WPA is to reduce seepage from the WCA. This will be achieved through increased surface water storage and the maintenance of higher groundwater levels. Hydrologic modeling performed by Broward County has shown that secondary canal improvements can enhance aquifer recharge and increase annual average groundwater levels. Secondary canal improvements in western Broward County would

likely produce comparable benefits and therefore complement the function of the WPA as a seepage barrier with the maintenance of higher groundwater levels immediately east of the WCA.

Regional water deliveries

One of the stated purposes of the Broward WPA is to reduce urban demands on the regional system. This is to be accomplished by providing seasonal water deliveries from the impoundment system to critical areas, such as wellfields and areas subject to saltwater intrusion. The Broward County Secondary Canal Improvement Project also helps support this objective. In Broward's North Regional Recharge System, secondary canal integration has been shown to increase the storage capacity of the system and the efficiency with which water can be diverted, or routed, from an area of surplus to an area in need of recharge. So, instead of discharging stormwater to tide, much of this water is captured and retained within the secondary canal system for recharge of natural systems, wellfields, and areas of saltwater intrusion. Such water management strategies allow for more efficient use of local water resources and hence may reduce reliance on regional water deliveries for satisfying urban water needs.

Integral to the WPA

As discussed above, one of the principal objectives of the Broward WPA is to improve the quality of water that is back-pumped from the C-11 west basin to the Everglades WCA. Phosphorus pollution has been identified as one of the principle causes of ecosystem degradation in the Everglades and, as a result, the state has developed a phosphorus standard for water quality in the WCA. The Broward WPA and the Obermeyer structure on the C-11 canal will assist in meeting this standard by providing separation and storage of stormwater runoff. The Broward County Secondary Canal Improvement Project will be integral to the effectiveness of these projects by increasing retention time, and hence water quality treatment, prior to the discharge of stormwater to the C-11 canal. These water quality benefits will be of particular importance even after completion of the WPA when storm events necessitate operation of S-9 pump station in order to provide flood control.

Improvements to urban water supply, and an anticipated decrease in the reliance on regional water deliveries, constitute another of the intended benefits of the Broward WPA. However, the full benefits of this project cannot be realized without the construction of the necessary distribution network for the conveyance of stormwater from the C-9, C-11, and Site 1 Impoundments to areas in need of supplemental water supply or aquifer recharge. The Broward County secondary canal system is the logical distribution network, and requires relatively minor infrastructural modifications in order to achieve optimal redistribution of surface waters for all beneficial purposes. Broward County is in the final stages of developing a county-wide hydrologic model for application in local water resource planning. Once completed, the County is prepared to dedicate staff resources and the advanced Mike SHE/Mike 11 integrated surface water and groundwater model to support the Broward County Secondary Canal Improvement Project.

Regional significance

Early implementation of the Broward County Secondary Canal Improvement Project serves to integrate urban and regional water management through coordination of efforts and more efficient use of urban water resources and regional water deliveries. Secondary canal improvement projects that optimize the County's ability to capture, retain, and redistribute surface waters throughout its expansive canal network will serve to augment and protect groundwater resources through aquifer recharge. Such improvements in local water resource management will allow the County to become more self-sufficient in meeting urban water needs, thereby limiting future reliance on the regional system as a water source.

It is incumbent upon local, state, and federal partners to participate in a timely and coordinated strategy for pursuing the Secondary Canal Improvement Project as part of CERP in order to ensure that the maximum benefits are gained from not only this project, but the Broward WPA, and the Site 1 Impoundment as well. As time passes, our ability to pursue certain critical projects may become subject to the influences of ensuing development and redevelopment. For example, local stakeholders are currently witnessing the complications presented by projects being proposed in the vicinity of the Fort Lauderdale Peele-Dixie wellfield where expansion of the Florida Turnpike will include modification of the existing water management system. The current project design shows substantial reduction in the cross-sectional area of conveyance ditches. Staff analyses reveal that this reduction in cross-sectional area, compared to the base condition, reduces conveyance while increasing discharges to the C-12 canal, and likely to tide. This is water that is currently captured within the water management system and a source of local groundwater recharge. It is important to note that the maintenance, and potential enhancement, of this conveyance system was included in the conceptual design of one of the original CERP Secondary Canal Improvement Projects.

Clearly, intervening non-CERP projects have the potential to impact the pre-CERP hydrologic and infrastructural conditions in Broward County. Although these projects might be reviewed for CERP consistency by state and federal agencies, there is a general concern about the ability to provide the necessary review without the participation of the Project Delivery Team, which has not convened in almost 2 years.

Local partners, the District, and the USACE cannot afford to lose flexibility in water management alternatives due to ensuing development. While one might be able to engineer around certain obstacles, the added cost might make some project cost prohibitive. There is also the cost of producing the water required to compensate for the change in hydrologic conditions resulting from Intervening non-CERP projects.

The expedited implementation of the Broward County Secondary Canal Improvement Project makes environmental and economic sense. Water storage and treatment capacity to be gained by concurrent implementation with the Broward WPA and the Site 1 Impoundment will increase the functional capacity of these projects, and at a minor cost.

This authorized CERP project can be implemented in a short timeframe and with immediate benefits.

- Secondary canal improvements and system integration have been shown to increase storage capacity within the water management system, reduce discharges to the primary system, and improve the quality of discharges that do occur.

- Water quality benefits to be gained in the C-11 Basin will support efforts to achieve the state's water quality standard for phosphorus and the CERP's goal to improve ecological vitality in areas of the Everglades impacted by urban stormwater runoff.

- Greater surface water storage within the secondary canal system increases groundwater levels and should help reduce seepage from the WCA.

- Better urban water resource management translates into the safeguarding of local water resources, and thereby stimulates greater self-sufficiency on the part of the County, and reduced reliance on the regional system.

Further delay in the implementation of the Broward County Secondary Canal Improvement Project is likely to restrict future water management alternatives, possibly reduce the project benefits, and result in a substantial increase in total project cost.

Broward County strongly supports the Accelerate initiative, but is concerned that the value of the Broward County Secondary Canal Improvement Project was overlooked in selecting the Accelerate and Band 1 MISP projects. Given the numerous benefits to be gained with expedited implementation of the Broward Secondary Canal Improvement Project, and the potential detriments of further postponement, Broward County requests inclusion of this authorized CERP project in Band 1 of the MISP.

Thank you for the opportunity to provide comment. Should you have any questions please feel free to contact my office (954-519-1270).

Sincerely,

David Lee, Director
Water Resources Division