MEMORANDUM

TO: Governing Board Members

FROM: Kenneth G. Ammon, P.E., Deputy Executive Director, Everglades Restoration Resource Area

DATE: September 19, 2007

SUBJECT: Oyster Monitoring Network for the Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary

Background:
The Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary are located on the southeast coast of Florida. After Lake Okeechobee (LO) was connected to the St. Lucie and Loxahatchee rivers and the Lake Worth Lagoon, discharges from the lake became the major source of freshwater to these estuaries. Over time, these discharges have altered the hydrology of these systems and adversely affected the oyster habitat as well as other key estuarine species. As part of the CERP, the C-44 Basin Reservoir, Indian River Lagoon – South and North Palm Beach projects will construct reservoirs and a number of aquifer storage and retrieval wells (ASR) in these watersheds. Along with other storage facilities designed to supplement LO storage, these project storage facilities will reduce high discharges of freshwater from Lake Okeechobee during the wet season and provide the needed flows to the estuaries during the dry season.

Because a healthy oyster habitat in the estuary is a key indicator of restoration success, a thorough knowledge is needed of the locations and quantities of oysters prior to, during and after the implementation of the CERP storage projects. The RECOVER Division initiated the Northern Estuaries Southeast Coast Oyster Monitoring Network in October 2006 as part of the Monitoring and Assessment Plan (MAP) to provide a long-term program for monitoring oysters in the northern estuaries. This effort began under a contract with Florida Fish and Wildlife Conservation Commission that examined the effects of variation in salinity on oyster condition and health as well as the habitat suitability of oyster reefs for crustaceans and fishes. The data collected will be used to assess the restoration-induced changes on the health of this key indicator species.

Continued support of the Oyster Monitoring Network effort under this second contract will allow for completion of the ongoing work, and will assist in making future decisions about the operations of the water management system. The long-term Oyster Monitoring Network will ultimately determine if the restoration of beneficial patterns of freshwater inflow, salinity and water quality to the Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary will achieve the expected distribution, community structure and viability of oysters.

The first three years of this long-term monitoring network has been successful in providing the start of a baseline dataset of existing oyster beds in the Loxahatchee

River, Lake Worth Lagoon and St. Lucie Estuary. A three-year continuation of the Oyster Monitoring Network in the Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary is necessary to ensure that an accurate evaluation is made of the effects of the CERP storage facilities and other restoration activities.

How this helps meet the District's 10-Year Strategic Plan:
The C-44 Basin Reservoir, Indian River Lagoon – South, and North Palm Beach projects and other water storage projects around LO will improve water quantity and quality by allowing water to be retained during high-flow periods, with subsequent releases to the estuary during drier times. The benefits expected include reduced salinity fluctuations and reduced nutrient loads to the estuary.

Oysters in the estuaries are a key indicator of restoration success. It is imperative that there is a thorough knowledge of the locations and quantities of oysters prior to during and after implementation of the restoration projects.

Funding Source:
This is a 3-year, 8-month contract with the Florida Fish and Wildlife Conservation Commission to collect additional data for understanding and predicting the effect of restoration activities on oyster habitat within the Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary in the amount of $600,000, of which dedicated funds (Comprehensive Everglades Restoration Plan Fund) in the amount of $68,167 are budgeted and the remainder is subject to Governing Board approval of the FY09-FY11 budgets.

This Board item impacts what areas of the District, both resource areas and geography:
The Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary are located on the southeast Florida coast. Staff from the Everglades Restoration Planning Department's RECOVER Division will be managing this effort.

What concerns could this Board item raise?
The Governing Board could be concerned about the ongoing support of the Oyster Monitoring Network and the additional three-year study. This second contract is necessary to establish a pre-restoration baseline and monitor the effects brought about by the initial construction of CERP projects such as the C-44 Basin Reservoir, Indian River Lagoon – South, and North Palm Beach projects as well as LO water storage projects.

Why should the Governing Board approve this item?
Healthy oyster habitat in the Loxahatchee River, Lake Worth Lagoon and St. Lucie Estuary is a key indicator of success for Everglades restoration. The C-44 Basin Reservoir, Indian River Lagoon – South, and North Palm Beach projects and other restoration projects around the LO area have the potential to greatly reduce the existing negative impacts on these estuaries.

KGA/pg
Attachments – Resolution, Map