M E M O R A N D U M

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SUBJECT: Operational Position Statement for the Week of July 2-8, 2013

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance. The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and has evaluated the overall status of the water management system. Detailed reports are available at the SFWMD's Operational Planning internet page.

Recommendation to the USACE

This week the SFWMD recommends the USACE continue to follow the 2008 LORS release guidance to manage the Lake stage. This week Part D suggests releases up to 3,000 cfs at S-79 and up to 1,170 cfs at S-80. Part C of the 2008 LORS suggests up to maximum practicable releases to the WCAs if desirable or with minimum Everglades impacts. However Lake Okeechobee water levels are rising and tributary inflows increased since Sunday (30-June), which necessitates evaluating the release guidance more frequently than weekly. Based on 1-July (and 2-July) information, Part D of the release guidance suggests releases up to 4,000 cfs at S-77 and up to 1,800 cfs at S-80. Note that high discharge rates may adversely affect the St. Lucie and Caloosahatchee Estuaries; discharge rates pertaining to impacts are provided below.

During the past week (June 26 – July 2) C-44 basin runoff rates decreased, but C-43 basin runoff rates increased due to heavy rainfall. S-79 discharges averaged about 5,100 cfs with 645 cfs coming from the Lake via S-77 during June 26-28. S-77 remains closed since 28-June. S-80 discharges averaged just under the target of 1,170 cfs with 470 cfs coming from the Lake via S-308. The current release ends Friday, 5-July. Target releases for the current release: average 3,000 cfs at S-79, and 1,170 cfs at S-80.

SFWMD estuary scientists indicate that S-79 flow rates greater than 1,500 cfs are more likely to cause salinity to fall within a harmful range for some organisms. Average flow rates exceeding 2,800 cfs should be minimized since they will likely cause salinity near Shell Point to drop to levels that threaten many species in the area including oysters and seagrasses.

SFWMD scientists also suggested avoiding total inflows to the St. Lucie Estuary in excess of 2,000 cfs for longer than two weeks since such flow rates will likely cause mortality of oysters. The total inflow is measured as the sum of S-80, S-49, S-97, and from Ten Mile Creek at the Gordy Road weir. Further details are provided below, which includes optional S-79 and S-80 pulse-release patterns suggested by SFWMD estuary scientists.

All WCA stages currently exceed their respective regulation schedules; therefore the SFWMD will continue to follow USACE release guidance and not make Lake regulatory discharges to the WCAs.

Weather and Climate

Rainfall during the past week totaled 3.26 inches district wide (through 7 am July 2nd). About 3.85 inches of rain fell directly over Lake Okeechobee during the past 7-days. District-wide rainfall for the past 30 days totaled 10.65 inches, which was 30% above-average. The combined Upper and Lower Kissimmee Basins received rain averaging about 3 inches during the past week. For the past 30-days the upper basin received about 52% above-average, while the lower basin received about 51% above-average rain.

The SFWMD short-term weather forecast indicates near-average rainfall for the next week. Below-average rainfall is expected the following week although there is relatively high uncertainty this time of year. The available (20-June) Climate Prediction Center (CPC) outlook for July shows equal chances of above-normal, normal, and below-normal rainfall for central and southern Florida. For the three-month windows through the 2013 wet season, the available CPC outlook (20-June) shows increased chances of above-normal rainfall for central and southern Florida.

Current Conditions and Operations

The July 2, 2013 Lake Okeechobee stage (reported by the USACE on July 1) was 14.23 feet NGVD, 0.28 feet higher than last week. The Lake stage is 0.90 feet higher than it was a month ago and is about 2.2 feet higher than it was a year ago. The current stage is 0.82 feet above the historical average for this date. The stage is within the middle third of the Low Sub-band of the 2008 Lake Okeechobee Regulation Schedule (2008 LORS) and is rising about 0.1 feet per day. The current stage is about one foot above the top of the Baseflow Sub-band and within one foot of the Intermediate Sub-band.

Dry Season Water Supply releases from Lake O to the EAA ended with the sustained rain starting in late May. Water Supply releases from the WCAs to the lower east coast also ceased; however releases continue to relieve high water levels in the WCAs. Regulation discharges through S-39, S-38, and S-31 are being made when downstream capacity is available while WCA-1, WCA-2A, and WCA-3A stages are above their respective regulation schedules. Releases from C-10A were made for most of the dry season, however they are reducing as the runoff into the L-8 Canal increases. A large portion of the C-10A releases were used for the water supply needs of the L-8 Basin, the City of West Palm Beach via the M-Canal, and the Lake Worth Drainage District via S-5AE and S-155A. As the rainfall increased in May and June, water supply demands reduced and excess water was discharged to tide via S5AE, S-155A, and S-155. The SFWMD continues to discharge water from the southern end of the L-8 Canal (S-5AE/S5AW) to provide a dilution flow for water discharge by the Design Build Contractor (Archer Western) for the L-8 Flow Equalization Basin (FEB) {inflow structure, outflow structure and revetment}.

2008 LORS Release Guidance (Part C): This week Part C suggests "Releases to the WCAs if desirable or with minimum Everglades impacts". The Tributary Hydrologic Condition (THC) increased to the normal classification during the past week (ending Sunday) and into the very wet classification Monday. The THC is determined by the wetter of the Palmer Index and the Lake O Net Inflow. As of July 2nd the Lake O Net Inflow is in the very wet classification, and the Palmer Index remains in the near-normal classification.

All WCA stages currently exceed their respective regulation schedules. WCA-3A water levels rose above the top of its regulation schedule in late May (Zone A), therefore the SFWMD discontinued Lake O regulatory discharges to WCA-3A per USACE guidance.

System conditions continue to be monitored closely. Lake O regulatory discharges to WCA-3A will resume per Part C guidance when the WCA-3A stage recedes below Zone A and when conveyance and STA treatment capacities are available.

2008 LORS Release Guidance (Part D): This week Part D suggests releases up to 3,000 cfs at S-79 and up to 1,170 cfs at S-80. However, based on 1-July (and 2-July) information, Part D of the release guidance suggests releases up to 4,000 cfs at S-77 and up to 1,800 cfs at S-80.

The USACE is currently targeting S-79 discharges averaging 3,000 cfs, and a target steady discharge of 1,170 cfs at S-80. Local basin runoff has caused the actual discharge rates to exceed targets, particularly at S-79.

SFWMD estuary scientists state that, given the amount of existing inflow of freshwater from local runoff and current salinity conditions, the estuary does not need additional inflows. Total water inflows exceeding 2,000 cfs for more than two weeks will likely cause mortality of oysters, therefore releases that cause this number to be

exceeded should be avoided. For example, assuming that the current combined discharge of about 400 cfs from S-49, S-97 and the Gordy Road structure continues for the next week and an additional ground water input of about 250 cfs, indicates that discharges at S-80 of more than about 1350 cfs may cause total discharge to exceed the 2000 cfs threshold.

For the Caloosahatchee Estuary, SFWMD estuary scientists recommend that, since the wet season has begun and the estuary typically receives increasing levels of freshwater inputs, the average flow rate can increase up to 1,500 cfs in a pulsed release from S-79. However, the average flow rate should not exceed 1,500 cfs frequently. Average flows that exceed 2,800 cfs should be minimized because flows greater than this cause salinity near Shell Point to drop to levels that threaten many species in the area including oysters and seagrasses.

Suggested alternative release patterns are provided here. The 2,500 and 3,000 cfs examples for S-79 were requested by the USACE. Note the potential effects from high discharges described above.

	S-79	S-79	S-79	S-80	S-80	S-80
Day	1500 cfs	2500 cfs	3000 cfs	950 cfs	1170 cfs	1170cfs
1	2100	2000	2500	1500	1800	1500
2	2700	3500	4000	2000	2400	2190
3	2300	4500	4500	1800	1500	1500
4	2000	3500	4000	1200	1000	1000
5	1700	2500	3000	900	900	1000
6	1400	1000	2000	700	600	500
7	1100	500	1000	500	600	500
8	800			500	600	
9	600			400	400	
10	300			0	400	

SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance: This week the SFWMD's Lake Okeechobee Adaptive Protocol (AP) release guidance flowchart is not applicable since the 2008 LORS release guidance suggests releases higher than baseflow releases.

Note that the AP release guidance flowchart was designed primarily to guide release recommendations for circumstances when the Lake stage is within the Baseflow Subband or lower. The USACE's Water Control Plan (WCP) for Lake Okeechobee and the EAA recognizes that the SFWMD may allocate water to the environment through its "Adaptive Protocols" or other SFWMD authorities. The WCP provides guidance as to releases, including Adaptive Protocol recommendations, in the various Lake schedule subbands.

There are two primary branches of the AP release guidance flowchart. The upper branch pertains to the 2008 LORS baseflow (aka, regulatory) releases while the lower branch pertains to environmental water supply releases. It is important to recognize that the AP was developed primarily to guide the water supply balance between Caloosahatchee Estuary, permitted water users, and other water supply purposes of the water control system. The water supply balance achieved by following the AP release guidance was evaluated by the Water Resources Advisory Commission and the SFWMD Governing Board, leading to board acceptance in September, 2010. Final Adaptive Protocols for Lake Okeechobee Operations (September 16, 2010).

For additional information pertaining to operations history and past recommendations, refer to the archives of LORS-2008 Release Guidance outcomes and operational position statements at www.sfwmd.gov under the Operational Planning topic.