M E M O R A N D U M

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DATE: October 23, 2013

SUBJECT: Operational Position Statement for the Week of October 12-28, 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 (2008 LORS). 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. The Lake stage receded about 0.19 feet during the past week to a stage of 15.46 feet, NGVD, and is in the middle third of the Low Subband.

The 22-October outcome from Part D of the release guidance is "S-79 up to 3000 cfs, and S-80 up to 1170 cfs". However the release guidance is likely to suggest baseflow release rates within the week if stages continue to decline at rates equal or greater than 0.02 ft/day.

Part C of the 2008 LORS suggests "Up to Maximum Practicable to WCAs IF desirable or with minimum Everglades Impacts". Water levels in WCA-2A and WCA-3A remain above their respective regulation schedules. SFWMD Everglades scientists again responded favorably to the idea of passing limited treated Lake O regulatory discharges to WCA-2A now, as long as this will not detrimentally affect the marsh recession rates in January through early May. Further discussion with the USACE today indicated there is no need for Lake O regulatory discharges to the WCAs to manage/regulate the Lake stage. The recent dry weather pattern, dry weather and climate forecasts, and reducing inflow from the Kissimmee River were among the factors considered. Therefore Lake O regulatory releases to WCA-1 via STA-1E (or STA-1W) have been discontinued. No Lake O regulatory releases to the WCAs are planned at this time.

For the St. Lucie Estuary, SFWMD estuary scientists suggest allowing salinity to continue to increase into a range suitable for oyster spat survival at the outer reef. Specifically, they recommend maintaining discharges at S-80 below 1,170 cfs.

For the Caloosahatchee Estuary, SFWMD estuary scientists recommend that the S-79 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 can cause salinity near Shell Point to drop to levels that threaten many species in the area including oysters and seagrasses.

Further details are provided below. C-43 basin runoff has decreased significantly, therefore the SFWMD scientists provided a table of suggested S-79 pulse release patterns. A pulse release pattern would be ecologically preferred over a constant baseflow release rate.

Weather and Climate

Rainfall during the past week totaled 0.32 inches district wide (through 7 a.m. October 22nd). No rain fell directly over Lake Okeechobee during the past 7-days. District-wide rainfall during the past 92 days totaled 16.73 inches (14% below-average). The combined Upper and Lower Kissimmee Basins received rain averaging about 0.20 inches during the past week, although no rain was reported in the Upper Kissimmee Basin. For the past 92 days the upper basin received about 90% of average rainfall, while the lower basin has received about 6% above average rainfall.

The SFWMD short-term weather forecast for the next week is for below-average rainfall. Week two is is also forecast to be below-average district-wide; however the southern portion of the district could receive average rainfall. The available (17-Oct) Climate Prediction Center (CPC) outlook for November shows equal chances of above-normal rainfall for central and southern Florida. The three-month windows through Jan-Feb-Mar all indicate increased chances of below-normal rainfall for central and southern Florida.

Current Conditions and Operations

The October 21, 2013 Lake Okeechobee stage (reported by the USACE on October 22nd) was 15.46 feet NGVD, 0.19 feet lower than last week. The Lake stage is 0.3 feet higher than it was a month ago and is about 0.4 feet lower than one year ago. The October 21st stage was 0.4 feet above the historical average for this date. The stage is in the middle third of the Low Sub-band of the 2008 Lake Okeechobee Regulation Schedule (2008 LORS) and receding.

Current average daily release rates (reported 23-Oct) at the Lake structures are 188 cfs at S-77 and 0 cfs at S-308. S-308 was closed the morning of 21-Oct and S-77 was closed about noon on 22-Oct. At the tidal structures, average daily discharges were about 762 cfs at S-79 and 0 cfs at S-80. S-80 was closed the morning of 21-Oct and S-79 remains open to release target baseflow rates of 650 cfs. C-43 basin runoff has decreased, but is currently enough to provide the baseflow discharge rate without opening S-77. The USACE decreased releases on 21-October to target an average flow rate of 650 cfs at S-79 and 0 cfs at S-80. These target rates are consistent with the 2008 LORS release guidance.

The water level in WCA-1 remains relatively steady near or slightly below the bottom of Zone A; whereas levels in WCA-2A and WCA-3A are above their respective schedules and receding. Lake O regulatory discharges to WCA-1 have been discontinued since the USACE indicated regulatory releases to the WCAs are not needed to manage/regulate the Lake stage. The recent dry weather pattern, dry weather and climate forecasts, and reducing inflow from the Kissimmee River were among the factors considered. The WCA-1 stage is expected to decline with the discontinuation of the inflows of treated Lake O water.

Irrigation demands are being supplied by Lake Okeechobee via S-351 and S-354. The releases have been intermittent as needed to maintain canal stages. C-10A releases have been made to assist with dewatering the L-8 Flow Equalization Basin as well as supplying water needs of the City of WPB and the LWDD.

WCA outlet structures S-38, S-31 and S-151 are no longer needed for discharging excess water from the WCAs due to receding stages and the onset of the dry season. Special operations using S-13AW and the S-13 pump station have been discontinued, as have the special operations for the South Dade Conveyance System (SDCS). The SFWMD is no longer using the S-331 and S-332B, C & D pump stations to convey additional WCA-3A regulatory releases to the C-111 stormwater detention areas.

The SFWMD is conducting a flow test for STA-2 Cell 3. This test will collect data that will be helpful for developing operating strategies for improving treatment capability of the STAs. With the reduced EAA runoff and the limited hydraulic capability for reusing WCA-2A water, the SFWMD plans to use Lake Okeechobee releases to complete the test. The resulting treated flow will be directed to WCA-2A and will be released to meet Broward County water supply needs via S-38 and/or EAA irrigation needs via S-7.

2008 LORS Release Guidance (Part C): Part C of the 2008 LORS suggests "Up to Maximum Practicable to WCAs IF desirable or with minimum Everglades Impacts". Water levels in WCA-2A and WCA-3A remain above their respective regulation schedules. SFWMD Everglades scientists again responded favorably to the idea of passing limited treated Lake O regulatory discharges to WCA-2A now, as long as this will not detrimentally affect the marsh recession rates in January through early May. Further discussion with the USACE today indicated there is no need for Lake O regulatory discharges to the WCAs to manage the Lake stage. The recent

dry weather pattern, dry weather and climate forecasts, and reducing inflow from the Kissimmee River were among the factors considered. Therefore Lake regulatory releases to WCA-1 via STA-1E (or STA-1W) have been discontinued.

The Tributary Hydrologic Condition (THC) remains in the normal classification this week. The THC is determined by the wetter of the Palmer Index and the Lake O Net Inflow. The Lake O Net Inflow receded into the dry classification this week. The Palmer Index remains well-within the normal classification (2008 LORS classifications) and is likely to remain above the -1.5 dry class threshold for the foreseeable future.

System conditions continue to be monitored closely. The SFWMD will continue to follow the 2008 LORS and USACE release guidance and not make Lake regulatory discharges to WCA-2A or WCA-3A.

2008 LORS Release Guidance (Part D): The 22-October outcome from Part D of the release guidance is "S-79 up to 3,000 cfs, and S-80 up to 1,170 cfs". However the release guidance is likely to suggest baseflow release rates within the week if stages continue to decline at rates equal or greater than 0.02 ft/day.

For the Saint Lucie Estuary, SFWMD estuary scientists suggest allowing salinity to continue to increase into a range suitable for oyster spat survival at the outer reef. Specifically, they recommend maintaining discharges at S-80 below 1,170 cfs.

For the Caloosahatchee Estuary, SFWMD estuary scientists recommend that the S-79 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 can cause salinity near Shell Point to drop to levels that threaten many species in the area including oysters and seagrasses.

SFWMD scientists suggest the following S-79 10-day pulse release schedules for varying average discharge rates (cfs). A pulse release pattern would be ecologically preferred over a constant baseflow release rate.

Day	**200**	**450**	**650**	**800**	**1000**	**1500**
1	450	1100	1300	1500	1700	2100
2	800	1600	1900	2100	2300	2700
3	400	850	1300	1600	1800	2300
4	200	500	900	1100	1400	2000
5	100	350	700	800	1100	1700
6	50	100	400	600	800	1400
7	0	0	0	300	600	1100
8	0	0	0	0	300	800
9	0	0	0	0	0	600
10	0	0	0	0	0	300

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 Lake Okeechobee stage is above the Baseflow Subband.

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.