



Mayor's Office

**Keith A. James**  
**Mayor**

September 19, 2019

**Via U.S. Mail & Email**

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**Re: Comment Regarding Proposed LORS 2008 Deviation**

Dear Sirs,

The City of West Palm Beach (City) is providing these comments regarding the U.S. Army Corps of Engineers (Corps) planned deviation from the water control plan for the Lake Okeechobee and the Everglades Agricultural Area (also known as the Lake Okeechobee Regulation Schedule or LORS 2008) to address harmful algal blooms (HABs) (Proposed Deviation) and the Environmental Assessment (EA) and the Proposed Finding of No Significant Impact (FONSI) prepared in support of the Proposed Deviation.

The City is the largest municipality in Palm Beach County with more than 110,000 residents. The City also operates a public water supply system that provides clean, safe and cost-effective potable water to approximately 150,000 residents of the City, the Town of Palm Beach and the Town of South Palm Beach. The City is dedicated to ensuring that its water supply will be protected from environmental harm and will remain a reliable source of drinking water for the foreseeable future.

The current Lake Okeechobee Regulation Schedule represents a delicate balance of many factors. It was developed after careful consideration of each of those factors after many years of study and public input. LORS 2008 represents an extremely complex program and any change to this regulation schedule like the Proposed Deviation will upset this balance.

The Proposed Deviation, EA and FONSI were posted on the Corps' Jacksonville District web site on August 6 without any advance warning. The Corps did not formally or informally engage or coordinate with the City prior to developing the Proposed Deviation. Rather, the Corps conceived of this strategy behind closed doors without public meetings or notifications and without soliciting public input from stakeholders or affected parties. This approach is unacceptable for a resource as important to the region as Lake Okeechobee.

The Corps then compounded this lack of transparency by establishing an unrealistically short period of time for public comment. The Corps initially gave the public 15-days to comment on a 130 page document containing a significant amount of information. Although the Corps ultimately extended this deadline to September 20 because stakeholder requests and Hurricane Dorian, we still believe the time was too short due to the complex nature of these issues. In sum, the City was not able to devote the time required to properly address the Proposed Deviation. Thus, these comments do not represent the necessary scientific studies and analyses required for such a drastic action on the part of the Corps.

#### **A. The Corps Lacks Authority to Implement the Proposed Deviation**

According to Section 1.1 of the EA, the Proposed Deviation is a Congressionally authorized purpose of the Central and Southern Florida (C&SF) Project. However, as the EA points out the Congressionally authorized purposes of the C&SF Project are described in House Document 643, 80th Congress, Second Session as authorized by the Flood Control Act of 1948, Public Law 80-858 and the Flood Control Act of 1954, Public Law 83-780. However, the control of HABs is not a Congressionally authorized purpose under the governing statutes. As recognized in Section 7-01 of the *Water Control Plan for Lake Okeechobee and Everglades Agricultural Area (ACOE 2008)*, the authorized project purposes are “flood control; navigation; water supply for agricultural irrigation, municipalities and industry, the Everglades National Park, regional groundwater control, salinity control; enhancement of fish and wildlife; and recreation.” HAB control is not among the authorized project purposes.

The fact that HAB control is not an authorized purpose is confirmed by Section 1109 of the Water Resource Development Act of 2018, Public Law 115-270, which sanctions the Secretary to “implement a 5-year harmful algal bloom technology development demonstration program” and “support research that will identify and develop improved strategies for early detection, prevention, and management techniques and procedures to reduce the occurrence and effects of harmful algal blooms in the Nation’s water resources” and that technologies identified “have the ability to scale up to meet the needs of harmful algal-bloom related events.” If Congress had already authorized the operation of the C&SF Project for the purpose of controlling HABs under the statutes cited in the EA, then the authorization to conduct 5-year harmful algal bloom technology development demonstration program would not be needed. The fact Congress specifically authorized such a program persuasively argues the HAB control is not currently authorized by Congress and the Corps does not have any legal authority to implement the Proposed Deviation.

Assuming, HAB control is in fact a Congressionally authorized purpose of the C&SF Project, then Section 309(l) of the Water Resources Development Act of 1992, Public Law 102-580 does not

authorize the Corps to unilaterally modify the C&SF Project to include HAB control due to significantly changed physical, biological, demographic or economic conditions. As quoted in Section 1.1 of the EA, this section only authorizes the Chief of Engineers to review House Document 643 and other pertinent reports, “with a view to determining whether modifications to the existing project are advisable at the time....” Clearly, the statute intends that the Corps seek Congressional approval for modifications to the project once the Chief of Engineers has completed his or her review, as was the case with the approval of the Comprehensive Everglades Restoration Program (CERP) by the Water Resource Development Act of 2000, Public Law 106-541.

Again, even assuming the Water Resources Development Act of 1992 authorizes the Corps to bypass the U.S. Congress to implement modifications to the C&SF Project without first seeking Congressional approval, Section 309(l) mandates that such modification only be made with “particular reference to modifying the project or its operations for improving the quality of the environment, improving protection of the aquifer, and improving the integrity, capability and conservation of urban water supplies affected by the project or operation.” As indicated below, the Proposed Deviation will reduce and not improve the integrity, capability and conservation of urban water supplies such as the one managed by the City. Consequently, the Water Resource Development Act of 1992 does not authorize the Corps to implement the Proposed Deviation.

#### **B. The Proposed Deviation Lacks Critical Definitions and Standards Required for Implementation**

The intent of the Proposed Deviation is to make preemptive releases from Lake Okeechobee during Winter and Spring (“dry season”) to the St. Lucie and Caloosahatchee Estuaries in excess of what is authorized under LORS 2008 until the water level in the lake is down to within 0.25 feet of the Water Shortage Management Band so that discharges would not have to be made during the Summer and Fall (“wet season”), when HABs are more likely to occur. Additionally, the Proposed Deviation would allow maximum practicable releases to the south to the Water Control Areas (“WCA’s”) when LORS 2008 would not authorize such releases so that water containing HABs would not have to be released to the St. Lucie and Caloosahatchee Estuaries. Under the Proposed Deviation, these releases could be implemented by the Corps under any of the following conditions:

- If a HAB is currently in Lake Okeechobee, C-43, C-44, the Caloosahatchee Estuary or the St. Lucie Estuary;
- If the State of Florida declares a state of emergency due to HABs on Lake Okeechobee, C-43, C-44, the Caloosahatchee Estuary or the St. Lucie Estuary;
- If a HAB is anticipated to occur on Lake Okeechobee, C-43, C-44, the Caloosahatchee Estuary or the St. Lucie Estuary; or
- If a HAB has occurred and caused harm, or have impacted public safety during the last 12 months in Lake Okeechobee, C-43, C-44, the Caloosahatchee Estuary or the St. Lucie Estuary.

These changes would be implemented as soon as possible and will be in effect for a minimum of one year, but may extend until LORS 2008 is replaced by a new water control plan (“LOSOM”), which is anticipated to be implemented in 2022



This proposed program lacks critical definitions and standards that provide clear guidance as to when and for what length of time the Corps will make releases from Lake Okeechobee because of HABs. This deprives the City of the ability to reasonably account for these releases in its water supply planning. Also, since these releases can occur any time during the year, the Proposed Deviation may cause abrupt and negative hydrologic changes to our water supply. Finally, even the duration of the Proposed Deviation is uncertain.

The most problematic aspects of the Proposed Deviation are the definition of HABs and the four trigger points that would allow the Corps to make releases from Lake Okeechobee that are not currently authorized under LORS 2008.

The cornerstone of the Proposed Deviation is the definition of HABs. This term is defined in Section 2 of EA Appendix A as “freshwater blue/green algae blooms causing adverse environmental, economic or health effects.” In Section 1.3 of the EA, the Corps acknowledges that most algal blooms are beneficial and cannot be considered harmful. According to the EA, only those algal blooms that produce toxins or cause depletion of dissolved oxygen can be considered HABs. However, according to the EA toxins produced by HABs typically breakdown within 14 days and the impact of HABs on dissolved oxygen depends on the size of the bloom and its impact on fish. Thus, the Corps own EA shows that the type of algae, the size of the bloom and other factors are critical to determining whether a HAB will have adverse economic, environmental and health impacts.

However, no attempt is made by the Corps to include this critical information in its HAB definition. Thus, as presently written, the Proposed Deviation would allow the Corps to initiate the proposed releases at will so long as there was some evidence of an impending or existing algal bloom

The problem with the definition is further compounded by the four trigger points in the Proposed Deviation. First, the Proposed Deviation doesn't specifically indicate how HABs will be detected beyond stating the Corps will use the latest scientific tools to predict potential and/or actual HABs in these water bodies, including satellite imagery and monitoring by the South Florida Water Management District (District) or the Florida Department of Environmental Protection (FDEP). However, absolutely no evidence is provided in the EA as to the effectiveness of these tools in detecting algal blooms and clearly none of these tools can possibly determine whether an algal bloom is causing adverse environmental, economic or health effects.

Second, there are no tools identified in the EA that are capable of determining whether algal blooms will occur in the future. The Corps acknowledges this Section 1.3 of the EA. The Corps states that although HABs are most common in Florida during the wet season, they can occur at any time. The Corps goes on state, in general, there are a number of physical, chemical, and biotic factors that influence formation of HABs, however no single factor has been identified as a root cause for fresh water HAB events.”

Third, algal blooms may occur in the Caloosahatchee and St. Lucie Estuary even when no water is being discharged from Lake Okeechobee, as was the case earlier this year. Nonetheless, as presently written the presence of HABs in these waterbodies would trigger the proposed releases



regardless of whether the HABs were caused by the discharge of water from the lake. Under those circumstances, releasing additional water to the estuaries or south to the water control areas would be of no benefit.

Fourth, the Corps can implement the Proposed Deviation even when there are no actual or anticipated HABs in Lake Okeechobee, C-43 or C-44 canals, the Caloosahatchee Estuary or the St. Lucie Estuary, as long as HABs had occurred in one of those water bodies in the past 12 months. This last trigger essentially gives the Corps a blank check to continue operating under the proposed deviation despite the absence of any actual or anticipated algal blooms.

In sum, these deficiencies give the Corps unfettered discretion to make releases from Lake Okeechobee and the events that would trigger such releases are arbitrary and capricious.

**C. There is No Scientific Evidence that the Proposed Deviation Will Have a Beneficial Impact on HABs in Lake Okeechobee and the St. Lucie and Caloosahatchee Estuaries**

The Corps' intent with the Proposed deviation is to improve the ecological health of Lake Okeechobee and the St. Lucie and Caloosahatchee estuaries with minimal or no impact to the competing project purposes. In order to assess whether the Proposed Deviation achieves this goal, the City retained Janicki Environmental, Inc. to evaluate the water quality and ecological impacts of the Proposed Deviation. The report *Potential impacts of the Army Corps of Engineers 2019 Planned Deviation to the Water Control Plan for Lake Okeechobee and Everglades Agricultural Area: Water Quality and Ecological Impacts (Janicki Environmental 2019)*. ("Janicki Report") is attached.

According to the Janicki Report, the primary outcome of the Proposed Deviation will be a reduction in the probability of delivery of lake water that increases the likelihood of HABs in the Caloosahatchee and St. Lucie estuaries. The most direct way releases might increase the likelihood of downstream HABs occurs when lake waters that are released contain HABs. Thus, a clear understanding of how the revised release schedule might influence the likelihood of HABs within the lake is needed. However, the EA does not present any analyses addressing this question nor does it consider previous research that addresses this question. The Janicki Report identifies some of the prior research and modeling tools the Corps should have considered in addressing this issue. The Janicki Report concludes the EA provides little reassurance that the Proposed Deviation will protect the water quality of Lake Okeechobee.

Also, according to the Janicki Report, the Proposed Deviation and EA does not consider the effects of the modified releases on the Caloosahatchee and St. Lucie Rivers. For example, the Janicki Report points out that the effects of the Proposed Deviation on these watercourses is hydrodynamic in nature. The EA admits that the Proposed Deviation will decrease tidal flushing and will increase vertical and horizontal stratification of the water column. Both the reduced tidal flushing and stratification can significantly increase the probability of HAB formation conditions for *Microcystis aeruginosa*. Additionally, the blue green algae from Lake Okeechobee are freshwater species that when exposed to higher salinities in the rivers will die, releasing whatever nutrients that are bound up while actively growing and reproducing. Research has shown that the nutrients that are released will be quickly taken up by algae that are more salinity tolerant and, which could

be harmful. Lastly, the Proposed Deviation can have dramatic effects on how nutrient loading is manifested in the rivers. Thus, it is possible the Proposed Deviation will make things worse in these two rivers with regards to HAB production.

#### **D. The Proposed Deviation Could Negatively Impact Water Quality and Fish and Wildlife**

##### *1. Caloosahatchee and St. Lucie Rivers*

The Janicki Report points out the Proposed Deviation could negatively impact water quality and environmental conditions in the Caloosahatchee and St. Lucie Rivers. It is widely known that both rivers do not meet state water quality standards and have been deemed impaired by the FDEP for nutrients and dissolved oxygen. Also, FDEP has established nutrient Total Maximum Daily Loads (“TMDLs”) for both rivers [Chapter 62-304.800, Florida Administrative Code (F.A.C.) – Caloosahatchee River Basin and Chapter 62-304.705, F.A.C. – St. Lucie River Basin]. To address these TMDLs, FDEP has developed Basin Management Action Plans (“BMAPs”) for both rivers.

The EA does not address how the Proposed Deviation will affect the ability of the stakeholders in each these of basins to achieve their respective TMDLs. The phosphorus concentrations in the waters released from the lake will vary based on lake levels and the timing and magnitude of these releases will differ from the current condition. Additionally, the changes in lake levels have the potential to increase internal loading in Lake Okeechobee due to the variation in lake levels. The EA provides no assurances that the changes in nutrient loading will not preclude achieving the TMDL in either river.

##### *2. Fish and Wildlife*

The Janicki Report points out that the EA did not consider any direct effects on fish and wildlife in the lake and in the receiving waterbodies. For example, with regards to snail kites in the project area, the effect of rapid changes in lake levels may reduce suitability of nesting substrates (nest collapses in cattails) or dewatering of the area around the nest allowing predation. The EA states that any impacts on the fish and wildlife associated with Water Control Area 3A would be avoided without demonstrating how this will be achieved. Finally, the EA acknowledges the potential usage and occurrence of threatened and endangered species and/or critical habitat within the study area, however, with the exception of snail kites, there are no analyses that can support the supposition that the habitats of other threatened or endangered species will remain unharmed with the implementation of the Proposed Deviation.

#### **E. The Proposed Deviation Will Adversely Impact Public Health, Safety and Welfare**

##### *1. The Proposed Deviation will Significantly Reduce the Amount of Water Available for Public Water Supply Systems*

One of the major purposes of the CS&F Project is to provide water to the water utilities in southeast Florida. Major canals drain southward from Lake Okeechobee providing needed water deliveries to manage groundwater levels in the WCAs, recharge wellfields, supply water users and prevent saltwater intrusion into the surficial aquifer system. The Proposed Deviation will impact this water

supply by authorizing increased releases to the Caloosahatchee and St. Lucie Estuary during the dry season that would not be allowed under LORS 2008. These increased releases will reduce water deliveries to the southeast Florida and will reduce the water level in Lake Okeechobee at the start of the wet season to possibly as low as 0.25 feet above the Water Shortage Management Band. That makes water shortages more likely and increases the risk of salt water intrusion.

In the *Utilities of Concern in the Lower East Coast Regional and Lake Okeechobee Service Area (SFWMD 2007)*, the District identified all the public water supply systems that either draw water directly from Lake Okeechobee, the C-43 or local surface waters to meet their needs and systems in the Lower East Coast Region, which are dependent on water deliveries from Lake Okeechobee to recharge wellfields and impede the movement of saltwater inland during dry times. In total, these public water supply systems supply water to over 6 million persons.

Out of all of these public water systems, the report identifies a number utilities of concern during drought conditions. These utilities of concern were divided into three categories: Coastal Utilities at Risk, Coastal Utilities of Concern and Surface Water Utilities of Concern. The Coastal Utilities at Risk include utilities with wellfields near the saltwater interface, which do not have a western wellfield, have not developed alternative sources of water and have limited ability to meet water needs through interconnects. At the time, the report identified 14 Coastal Utilities at Risk in Palm Beach, Broward, Miami-Dade and Monroe Counties. The Coastal Utilities of Concern have wellfield near the saltwater interface, but either have a western wellfield, and/or an alternative source that is not threatened by saltwater intrusion. At the time, the report identified 16 Coastal Utilities of Concern in Palm Beach, Broward and Miami-Dade Counties. Finally, the Surface Water Utilities of Concern include those public water systems that take water directly from Lake Okeechobee or are dependent on surface water deliveries from the lake. At the time, the report identified 7 Surface Water Utilities of Concern.

The City of West Palm Beach operates the largest water utility identified at risk in the 2007 District Report. The City supplies potable water to 150,000 customers within West Palm Beach, the Town of Palm Beach and the Town of South Palm Beach. The City receives the majority of its water supply (98% or more on average) from Lake Okeechobee via the District's L-8 and L-8 Tieback Canals, beginning at Culvert 10A. Flow from Lake Okeechobee is conveyed into the City's system via the L-8 and L-8 Tieback Canals at the City's Control 2 Pump Station. From there the water enters the City's M-Canal through Control Structure 3, crossing Grassy Waters Preserve through Control Structure 4 and from there eastward to Lake Mangonia. Water from Lake Mangonia travels through a canal into the main body of Clear Lake and then into the east lobe of Clear Lake, where the intake to the City's water treatment plant is located.

In 2016 the District began operation of the L-8 Reservoir System. Since that time the hydrologic data shows a complementary relationship between the L-8 Reservoir System and the Control 2 Pump Station. Under this relationship, when Control 2 is not pumping flow passes south to the L-8 Canal to assist with many objectives, some of which are related to CERP. During the times the City needs water and it available in the L-8 Canal, flow reverses and passes north into the L-8 Tieback Canal to assist with water supply for the City. The relationship between the L-8 Reservoir and the Control 2 Pump Station assumes the seasonable releases of LORS 2008 as a foundational protocol.



The City retained Collective Water Resources, LLC to assess the impact of the Proposed Deviation on its water supply. The report *Potential Impacts of the ACOE's 2019 Planned Deviation to the Water Control Plan for Lake Okeechobee and Everglades Agricultural Area (LORS 2008) – Water Supply and Hydrologic Review (Collective Water, LLC 2019)*. (“Collective Report”) is attached. According to this report, Collective Water ran a series of sensitivity analyses to determine the potential impact of the Proposed Deviation on the City’s ability to pump water eastward for water supply needs via Control 2. A range of flow reduction scenarios were simulated to examine four potential discharges scenarios as described in the EA. The results of those simulations are reported in Table 1.

Further analysis was conducted using scenario 4. This scenario was selected as an example of a moderate impact of the Proposed Deviation on the City’s water supply. According to Collective Water Resource’s analysis, the Proposed Deviation would generally decrease flows to the L-8 Reservoir during the wet season. This decrease would affect inflows to the L-8 Reservoir System and the many critical objectives related to its operation, as well as decreasing the City’s ability to receive quantities of water from the L-8 Reservoir during drought.

Collective Water Resources then analyzed the potential impact of a drought against the Proposed Deviation. Its analysis indicated the City would have essentially run out of surface water, if the 2009 drought was superimposed against the Proposed Deviation under scenario 4. Although the City has reserve supplies (groundwater or emergency interconnects), those sources may also be limited by the impact of the Proposed Deviation and the drought conditions. Thus, in the City’s case, the Proposed Deviation would lead to a public health and safety emergency under moderate to severe droughts such as has been experienced in the past, as documented in the *2000-2001 Drought in South Florida Report (SFWMD 2001)*.

## 2. *The Proposed Water Bank Will Not Work*

In the EA, the Corps contends that the Proposed Deviation will not impact water users any differently than they are currently impacted under LORS 2008. This would be accomplished through what the Corps calls a “water bank” for HAB operations. The volumes of releases that are called for in LORS 2008, but are not made will be banked as a “deposit.” Releases that exceed those called for in LORS 2008 will be banked as a “withdrawal” or “loan.” The banking period is the 12 months between February 1 and January 31. This time period was chosen to coincide with the beginning of the endangered everglades snail kite nesting period, for which Lake Okeechobee is considered a critical habitat. Actual releases will be based on targeted weekly averages at the associated structures (S-79 and S-80).

The goal of this bank will be to always get to a zero balance by February 1. However, the EA acknowledges that this goal may be more aspirational than real as conditions out of the Corps’ control may impact the water bank such as “large rainfall or tropical events, drought, La Niña, or El Niño, or environmental concerns.” The Corps is right to be concerned that these events may prevent the water bank from operating properly. According to the Collective Water Report, South Florida is experiencing increased variability in hydrology. This variability not only indicates that droughts are becoming more common, but also flooding is increasing in frequency and intensity.

Also, the time of year when droughts and flooding occur is changing as well. According to the Collective Water Report, the data from 1991 to 2018 indicates that South Florida is experiencing more intense and frequent storm events during what typically would be the dry season.

The Collective Water Report also specifically looked at the feasibility of the Corps' water bank approach by examining water flow through Culvert 10A from Lake Okeechobee for the period of record (2000-2019). During this period, the peak flow occurred in January 2003 (555 cfs). Peak annual inflows at Culvert 10A have generally decreased since LORS 2008 was implemented. However, since 2009, peak annual flows have routinely occurred during the dry season (and the majority during January). This analysis also suggested that despite allowing for higher flows through Culvert 10A in the dry season (almost a 10% increase at times), it was nearly impossible to match the historical average inflows for Culvert 10A for the period of record. The upper range of the dry season discharges needs to be carefully constrained to maintain safe conditions in the L-8 Canal and many of the connecting secondary and tertiary canals. This canal balance issue suggests that the Corps will find it nearly impossible to attain the "net zero" discharge assumption for the water bank.

Finally, relying on weekly meetings to make decisions regarding discharges is also likely an inappropriate mechanism given unreliability of drought predictions – among other concerns. According to the Collective Water Report, data from the National Weather Service Climate Prediction Center (2004-Current) identified many times when drought predictions over the past 9 years have been incorrect for the West Palm Beach area, including all years since 2009 (except for 2016). Among those times was May 21, 2009 and June 4, 2009. The early summer drought of 2009 represented one of the most severe droughts the City has experienced in recent years. However, on June 4, 2009, the National Weather Service predicted no drought for the West Palm Beach area.

In sum, the "water bank" concept proposed by the Corps will not work and most importantly will not limit the impact of the Proposed Deviation on the City's water system to the same impact it currently experiences under LORS 2008.

#### **G. The Proposed Deviation Could Cause Increased Coastal Flooding**

The Proposed Deviation will have the unintended consequence of increasing the risk of flooding in secondary and tertiary canal systems in the West Palm Beach area during the dry season. According to the Collective Water Report, the Corps did not simulate or work with stakeholders to evaluate or adjust operations within the various secondary canal systems. According to the EA, no secondary or tertiary canal systems were evaluated as part of the Proposed Deviation. However, virtually all these canal systems are currently operated with the seasonality of LORS 2008 as a foundational assumption. Further, because the Corps decision to pursue an EA rather than an Environmental Impact Statement (EIS) and the shortened comment period, the various stakeholders that operate secondary and tertiary canal systems have not had the opportunity to evaluate any shift in the seasonality of discharges under the Proposed Deviation on their canal systems.

Since South Florida is experiencing higher variability across the entire hydrologic spectrum, it is also anticipated that South Florida will experience more intense and frequent storm events during

the dry season. This would increase the risk of flooding since the Corps would be discharging more water during the dry season and the secondary and tertiary canals would be close to capacity with an unadjusted operational protocol linked to LORS 2008.

## **H. The Proposed Deviation Could Result in Increased Significant Environmental Harm to MFL Water Bodies**

### *1. General*

The overall goal of Chapter 373, Florida Statutes is to ensure the sustainability of water resources in Florida. Chapter 373 provides water management districts like SFWMD with several tools to carry out this responsibility, including authority to establish minimum flows and levels (“MFLs”). MFLs are either flows in surface watercourses or minimum water levels in an aquifer or surface water body at which further withdrawals would be significantly harmful to the water resources and ecology of the area. *See* §373.042, Fla. Stat. Significant harm is defined by SFWMD in Rule 40E-8.021(31), Florida Administrative Code, as the temporary loss of water resource functions, which results from a change in surface or groundwater hydrology that take more than 2 years to recover.

Section 373.0421, Florida Statutes requires water management districts to adopt and implement a recovery or prevention strategy for water bodies with flows or levels that are below, or are projected to fall within 20 years below the adopted MFL criteria. Prevention strategies are developed when MFL criteria are not currently violated but are projected to be violated within 20 years of the establishment of the MFL. Recovery strategies are developed when MFL criteria are currently violated.

Between 2001 and 2006, MFLs were adopted for several water bodies that may be impacted by the Proposed Deviation, including Lake Okeechobee, the St. Lucie River, the Caloosahatchee River, the Northwest Fork of the Loxahatchee River and the Biscayne aquifer. Simultaneously with the adoption of these MFLs a prevention/recovery strategy was adopted for Lake Okeechobee, a recovery strategy was adopted for the Northwest Fork of the Loxahatchee River and a prevention strategy was adopted for the Biscayne aquifer.

### *2. Lake Okeechobee*

In 2001 an MFL of 11 feet NGVD was adopted for Lake Okeechobee. *See* 40E-8.221(1), F.A.C. The MFL criterion was based on the relationship between water levels in the lake and the lake’s ability to 1) protect the coastal portion of the surficial aquifer system against saltwater intrusion, 2) supply water to Everglades National Park, 3) provide littoral zone habitat for fish and wildlife, and 4) ensure navigational and recreational access. Consideration was also given to the lake’s function as a storage area for supplying water to adjacent areas such as the Everglades Agricultural Area, the Seminole Tribe of Florida reservations and the Lake Okeechobee Service Area.

An MFL exceedance occurs when the water level in Lake Okeechobee falls below 11 feet NGVD for more than 80 consecutive or non-consecutive days during an 18 month period. The 18-month period over which MFL compliance is assessed starts following the first day the lake falls below 11 feet NGVD and cannot include more than one wet season (May 31 through October 31) on any



given calendar year. An MFL violation occurs when an exceedance occurs more than once every 6 years.

An analysis was conducted in 2000 to determine if the Lake Okeechobee MFL criterion could be expected to be violated. *See Lower East Coast Water Supply Plan (SFWMD 2018)*. The South Florida Water Management Model was used to evaluate the MFL criterion. Under the assumptions of the then regulation schedule adopted by the Corps for Lake Okeechobee in July 2000, it was determined that the MFL criterion would not be violated and existing as well as projected users would have a 1-in-10 year drought level of certainty. Therefore, SFWMD adopted a prevention strategy for the lake.

However, that all changed with implementation of LORS 2008, which resulted in a lowering of water levels in Lake Okeechobee. As a result MFL violations were projected to occur. Consequently, in 2008, SFWMD changed the prevention strategy to a recovery strategy consisting of four components: Environmental enhancement projects to be implemented during extreme low lake stages; regulatory constraints on the consumptive use of lake water; increased water shortage restrictions for water users depending on the regional system like the City; and, capital projects that improve storage capacity both within and adjacent to the lake. *See Lower East Coast Water Supply Plan (SFWMD 2018)*. It was assumed this recovery strategy would halt further significant harm to Lake Okeechobee until the Herbert Hoover Dike rehabilitation was completed in 2022 and the change in the regulation schedule would be expected to return the lake to an MFL prevention strategy.

However, the Proposed Deviation will now result in a further lowering of water levels in Lake Okeechobee beyond what was contemplated by LORS 2008. It is no longer certain the existing recovery strategy will be adequate to prevent increased significant harm to those factors the MFL criterion was designed to protect including: 1) protection of the coastal portion of the surficial aquifer system against saltwater intrusion, 2) the provision of water to Everglades National Park, 3) preservation of littoral zone habitat for fish and wildlife, and 4) maintenance of navigational and recreational access. Since the EA did not evaluate the impact of the Proposed Deviation on the MFL or the adequacy of the existing recovery strategy to counter those impacts, it must be assumed that the Proposed Deviation will cause further significant harm to those critical features. Furthermore, according to the Proposed Deviation, this situation could remain in place until LORS 2022 is adopted three years later. Finally, it should be pointed out that this Proposed Deviation is the first change to the Lake Okeechobee regulation schedule in the nearly 20 years that the MFL has been in place, which was not coordinated with SFWMD.

### 3. *St. Lucie River*

An MFL was established by the District for the St. Lucie River and Estuary in 2002. Rule 40E-8.341, F.A.C. states mean monthly flows to the St. Lucie Estuary should not fall below 28 cfs at the Gordy Road Structure to the St. Lucie River North Fork for two consecutive months during a 365-day period for two consecutive months. Clearly this MFL is intended to preserve the freshwater-salinity interface in the river.

Simultaneously with the adoption of this MFL, the District determined the river was in prevention and established a prevention strategy. According to Rule 40E-8.421(5)(a), the prevention strategy is to manage discharges to the St. Lucie River and Estuary within the operational protocol of the Ten Mile Creek Project, scheduled to be completed by 2004. Flow targets will be consistent with the CERP performance requirements for Indian River Lagoon.

As pointed out in the Janicki Report, the Proposed Deviation will change the magnitude, timing and manner of freshwater releases from Lake Okeechobee to the St. Lucie River. These changes can have significant effects on the temporal and spatial distributions of salinity in the river. The EA fails to address the impact of the Proposed Deviation on the MFL or the prevention strategy for the St. Lucie River. The documents prepared by the District in support of the MFL and prevention strategy provide tools that allow assessment of the impact of the Proposed Deviation on the MFL. There appears to have been no effort to apply these tools to support the Proposed Deviation. Consequently, the EA provides little reassurance that the MFL in the St. Lucie River will be met or that the prevention strategy remains viable.

#### 4. *Caloosahatchee River*

An MFL for the Caloosahatchee River was first established by the District in 2003. It was amended in 2018. The amended MFL appears in Rule 40E-8.221(2), F.A.C., which states that the MFL for the Caloosahatchee River is the 30-day moving average flow of 400 cfs at S-79. This MFL is also intended to preserve the freshwater-salinity interface in the river.

Simultaneously with the adoption of the MFL, the District determined the river was in recovery. Analysis completed with the *Lower East Coast Water Supply Plan (SFWMD 2000)* showed that long-term regional storage was necessary to achieve proposed MFL criteria and that MFL violations would continue until a recovery strategy was implemented. As a result, the District adopted a recovery strategy based on construction of the CERP project known as the Caloosahatchee River (C-43) West Basin Storage Reservoir. This reservoir would allow flows to the Caloosahatchee River Estuary to be moderated through capture of surface water flows and a portion of Lake Okeechobee releases in the reservoir during wet periods and release of water from the reservoir during dry periods.

As pointed out in the Janicki Report, the Proposed Deviation will impact this recovery strategy by directing releases from Lake Okeechobee away from the Caloosahatchee River during the wet season. This would appear to impact the design purpose of the Caloosahatchee River Reservoir by reducing the amount of water available for storage during the wet season and consequently reducing the release of water from the reservoir during dry periods. However, the EA fails to address the impact of the Proposed Deviation on the MFL or the recovery strategy. Again the documents prepared by the District in support of the original MFL, the amended MFL and the recovery strategy provide tools that allow assessment of the impact of the Proposed Deviation on the MFL. There appears to have been no effort to apply these tools to support the Proposed Deviation. Consequently, the EA provides little reassurance that the MFL in the St. Lucie River will be met or that the recovery strategy remains viable.

## 5. Northwest Fork of the Loxahatchee River

The Loxahatchee River is located in Martin and Palm Beach County and flows into the Atlantic Ocean through Jupiter Inlet. It is regarded as the last free-flowing river in southeastern Florida. Approximately 7.6 miles of the river's Northwest Fork were designated as Florida's first Wild and Scenic River in 1985 and a National Wild and Scenic River. To protect freshwater flows in the Northwest Fork, an MFL was adopted in 2003. The MFL criteria area minimum flow of 35 cubic feet per second over Lainhart Dam and an average salinity of less than 2 at river mile 9.2. An MFL exceedance occurs when 1) flows decline below 35 cfs for more than 20 consecutive days; or 2) salinity, expressed as 20-day rolling average, is greater than 2 at river mile 9.2 An MFL violation occurs when an exceedance occurs more than once in a 6 year period.

The MFL criteria protects the freshwater floodplain swamp of the Northwest Fork. The designation of the Northwest Fork as a National Wild and Scenic River identified the floodplain swamp and its associated cypress forest as a resource of outstanding value that needs to be protected.

The Northwest Fork of the Loxahatchee River was not meeting the MFL criteria at the time of adoption. Therefore a recovery strategy was adopted. According to the *Lower East Coast Water Supply Plan (SFWMD 2018)* the recovery strategy includes the following components: Structural Improvements, including CERP projects that support the MFL; Operational Protocols – Providing flows from Lainhart Dam and other sources to meet the MFL (35 cfs) as well as restorative flows greater than 50 cfs; and, Regulatory Activities – SFWMD regulatory program and water shortage plans to ameliorate low-flow conditions.

The two CERP projects identified to meet the MFL are the G-160 and G-161 Structure Projects and the Loxahatchee Watershed Restoration Project. The former includes restoring the natural hydroperiod by providing additional water to the Loxahatchee Slough from Grassy Waters Preserve, a natural preserve owned and maintained by the City of West Palm Beach. The latter project involves the restoration of flows to the Northwest Fork of the Loxahatchee River through the Pal Mar and J.W. Corbett Wildlife Management Area Hydropattern Restoration Project, the L-8 Basin Modifications, the C-51 Reservoir and L-8 flow equalization basin and flow-way features in the L-8, C-18 and Loxahatchee tributary basins. Most of these projects involve re-diverting flows from Lake Okeechobee and the L-8 Basin to provide additional water to meet the MFL.

The EA did not examine the impact of the Proposed Deviation on the MFL for the Northwest Fork of the Loxahatchee River or the adopted recovery strategy. However, this was one of the items evaluated in the Collective Water Report. Based on the analysis conducted by Collective Water, it is reasonable to deduce that the Proposed Deviation would generally decrease flows to the L-8 Reservoir System during the wet season. This decrease will affect inflows to the L-8 Canal and the many critical objectives related to its operation, as well as decreasing the City of West Palm Beach's ability to receive water from the L-8 Reservoir during drought. These reduced flows may impact the recovery strategy by affecting the District's successful operation of the G-161 Structure. Therefore, the Proposed Deviation will have a negative impact on the MFL, which is designed to protect the outstanding value of freshwater floodplain swamp habitat in the Northwest Fork. This in turn will cause harm to a National Wild and Scenic River.



#### *4. Biscayne Aquifer*

The Biscayne aquifer extends beneath Monroe, Miami-Dade, Broward and Palm Beach Counties, over an area of approximately 2.56 million acres. It is a highly permeable, wedge-shaped, unconfined aquifer more than 200 feet thick in coastal Broward County, thinning to an edge of 35 to 40 miles inland in the Everglades. The Biscayne aquifer supplies all, or a large portion, of the potable water supply systems from Palm Beach County southward, including the Florida Keys, which is primarily supplied via pipeline from mainland Miami-Dade County. The primary source for the Biscayne aquifer is indirect groundwater recharge from canals discharging from Lake Okeechobee.

Due to its widespread use, an MFL and prevention strategy was adopted for the Biscayne aquifer in 2001 based on analysis of the relationships between groundwater and canal water levels, and the potential for saltwater intrusion. The MFL criterion is the water level in the aquifer that results in the movement of the saltwater interface landward to the extent that groundwater quality at an established withdrawal point is insufficient to serve as a water supply source. An MFL violation occurs when water levels within the aquifer produce this degree of saltwater movement at any time.

Because of the relationship between water levels in the Biscayne aquifer and the canal system discharging water from Lake Okeechobee, the MFL is expressed as minimum water levels at 11 primary water management structures maintained by SFWMD in canals that overlie the Biscayne aquifer. To meet the MFL, canal stages cannot fall below the levels shown in Table J-2 of the 2000 Lower East Coast Regional Water Supply Plan for more than 180 days, and the average annual stage must be sufficient to allow water levels and chloride concentrations in the aquifer to recover to levels that existed before a drought or discharge event occurred. The prevention strategy is a series of actions designed to maintain canal stages at the minimum operation levels.

The EA did not examine the impact of the Proposed Deviation on the Biscayne aquifer MFL. However, since the Proposed Deviation will lower water levels in Lake Okeechobee, it will likely have a negative impact on the availability of water in the canal system discharging to the Biscayne aquifer. Thus, the Proposed Deviation could cause a violation of the MFL and possible saltwater intrusion. This would have a devastating impact on the public water supply systems of those water utilities, who supply the potable water needs of over 6 million persons.

### **I. The Proposed Deviation Requires an Environmental Impact Statement**

#### *1. General*

The Proposed Deviation requires an EIS under the National Environmental Policy Act because of the significant impacts on the human environment. A FONSI is not appropriate in this case.

According to 33 Code of Federal Regulations (“CFR”) 230.10, an EA is a document, which provides sufficient information to the Corps’ district commander on the potential environmental effects of the proposed action for determining whether to prepare an EIS or FONSI. According to 33 CFR 230.11 and 40 CFR 1508.13, a FONSI may only be prepared for a proposed action that

will not have a significant impact on the human environment. The EA and the information submitted in this comment letter clearly shows that an EIS is required because the Proposed Deviation will have a significant impact on the human environment.

According to 40 CFR 1508.14, "Human Environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with the environment. According to 40 CFR 1508.27, significant impact requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as whole (human, national), the affected region, the affected interests and the locality. 40 CFR 1508.27(a). Intensity refers to the severity of the impact, which requires consideration of 10 factors.

## *2. Context*

The context of the Proposed Deviation includes all of South Florida. The Proposed Deviation will modify the established regulation schedule for Lake Okeechobee, which is a critical component of the CS&F Project. The authorized purposes for this project are flood control; navigation; water supply for agricultural irrigation, municipalities and industry, the Everglades National Park, regional groundwater control, salinity control; enhancement of fish and wildlife; and recreation. This project impacts the lives of over 8 million persons, the economy of the State of Florida, the environmental health of the Everglades National Park, a resource of worldwide significance and the environmental wellbeing of related water bodies that provide critical habitat to endangered and threatened species.

In considering the context of the Proposed Deviation, one must keep in mind that the Corps is proposing a major change to LORS 2008, which was adopted by the Corps only after preparation of an EIS. In fact, the adoption of every regulation schedule or major modification of a regulation schedule for Lake Okeechobee has required an EIS. In point of fact, 33 CFR 230.6(c) provides that proposed major changes to the operation and/or maintenance of a completed project, such as the CS&F Project, normally require an EIS.

## *3. Intensity*

Upon consideration of the following factors, it is clear that the intensity of the Proposed Deviation is significant.

### *a. Impacts that may be both beneficial and adverse*

The EA has documented what it believes are beneficial impacts from the Proposed Deviation on controlling the proliferation of HABs in Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries by modifying the releases from the Lake authorized under LORS 2008. This comment letter has documented a number of adverse impacts resulting from the Proposed Deviation. Those include negative impacts to: (1) water quality in the Caloosahatchee and St. Lucie Rivers; (2) fish and wildlife, including endangered species; (3) the City's public water supply; (4) coastal flooding risk; (5) the operation of CERP Projects such as the L-8 Reservoir; and, (6) minimum flows and

levels and prevention and recovery strategies for Lake Okeechobee, the St. Lucie River, the Caloosahatchee River, Northwest Fork of the Loxahatchee River and the Biscayne aquifer.

*b. The degree to which the proposed action affects public health or safety*

As stated above this will have a negative impact on public health and safety by reducing the amount of water available to the City during drought conditions and increasing the risk for coastal flooding. The analysis by Collective Water Resources indicates that if the Proposed Deviation were superimposed on the 2009 drought, the City would have run out of surface water, which would create a public health emergency for its 150,000 customers.

*c. Unique characteristics of the geographic area such as proximity to historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas*

Lake Okeechobee and the areas receiving water releases from the lake represent a unique region. The geographic area encompasses all of South Florida, which is home to over 8 million persons. It contains natural systems of worldwide significance such as the Everglades Park. It contains nationally recognized wild and scenic rivers such as the Northwest Fork of the Loxahatchee River. It also contains ecologically critical wetland habitat like Grassy Waters Preserve and others too numerous to mention. It contains the geologically unique Biscayne aquifer. It contains prime farm lands. All of these unique resources will be negatively impacted by the Proposed Deviation.

*d. The degree to which the effects on the quality of the human environment are likely to be highly controversial*

Any change to the current regulation schedule is likely to be highly controversial. This is evidenced by the fact that scoping meetings for LOSOM, the water control plan that will replace LORS 2008, were attended by hundreds of people and thousands of comment letters were submitted by interested persons. The comments for the most part dealt with the issues raised in this comment letter, which relate to modifying the Lake Okeechobee operation schedule to address HABs and the consequences of that decision on the other congressionally authorized purposes of the CS&F Project.

*e. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks*

As documented in this comment letter and the Janicki Report, the degree to which the Proposed Deviation will actually be effective in reducing the likelihood of HABs in the Caloosahatchee and St. Lucie estuaries is highly uncertain. The EA does not present any analysis addressing this question nor does it consider some of the prior research and modeling tools that have addressed the occurrence of HABs in Lake Okeechobee, some of which indicate that the proposed variation in lake levels may increase phosphorous concentration due to internal loading, which in turn could increase the occurrence of HABs.

Another matter of uncertainty is actually how the Proposed Deviation will be implemented. As stated above, the Proposed Deviation lacks any meaningful definitions or standards that would provide guidance to the public as to when HAB discharges would be made. This makes it impossible for water utilities to plan for water shortages and the operators of secondary and tertiary canals to plan for the avoidance of coastal flooding conditions.

Since the Corps conducted no analysis of the impact the Proposed Deviation on public water supply in Southeast Florida and is instead relying on an unworkable water bank concept to mitigate adverse impact, the Proposed Deviation represents a unique and unknown risk to the City's 150,000 water customers.

*f. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration*

The Proposed Deviation and EA indicates it will be implemented as soon as possible and will remain in effect for at least a year and possibly until LORS 2008 is replaced by LOSOM, which is anticipated to occur in 2022. Thus, there is a high likelihood that the Proposed Deviation rather than LORS 2008 will be used as the base case precedent when developing LOSOM. There is precedent for this action insofar as the Corps used a deviation to the 2000 operation schedule for Lake Okeechobee, when developing LORS 2008.

*g. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts*

As explained above, the Proposed Deviation is related to the development of LOSOM. It will likely be used by the Corps in developing LOSOM. The Corps has already determined that LOSOM will significantly impact the human environment by initiating an EIS for LOSOM. So even if the Proposed Deviation were deemed individually insignificant, its relationship to LOSOM will result in cumulatively significant impact.

*h. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources*

As stated in this comment letter, the Proposed Deviation will adversely impact public health and safety by decreasing the quantity of water available to the City during drought and increasing the risk of coastal flooding. There are districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places within the City that may be impacted as a result. Also, the impacts of the Proposed Deviation may cause loss or destruction of significant scientific, cultural or historical resources for the same reason.



- i. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973*

As stated in this comment letter and in the Janicki Report, the Proposed Deviation may adversely affect endangered or threatened species such as the everglades snail kite and may adversely affect endangered or threatened species that utilize Lake Okeechobee, the St. Lucie River, the Caloosahatchee River and Northwest Fork of the Loxahatchee River by impacting the attainment of the MFL established for these waterbodies. An MFL is intended to protect the water resources and ecology of the area from significant harm. In all these cases, this involves preserving critical habitat for endangered or threatened species.

- j. Whether the action threatens a violation of Federal, State or local law or requirements imposed for the protection of the environment*

We believe the Proposed Deviation violates what is known as the Savings Clause in the Water Resources Development Act of 2000, Public Law 106-541, which is applicable to the CS&F Project. This provision provides in pertinent part as follows:

(A) NO ELIMINATION OR TRANSFER.—Until a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of the implementation of the Plan [CERP], the Secretary and the non-Federal sponsor shall not eliminate or transfer existing legal sources of water, including those for—

- (i) an agricultural or urban water supply;
- (ii) allocation or entitlement to the Seminole Indian Tribe of Florida under section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e);

- (iii) The Miccosukee Tribe of Indians of Florida;
- (iv) water supply for Everglades National Park; or
- (v) water supply for fish and wildlife.

(B) MAINTENANCE OF FLOOD PROTECTION—Implementation of the Plan shall not reduce the level of service for flood protection that are—

- (i) in existence on the date of enactment of this Act; and
- (ii) in accordance with applicable law.

CERP has not yet been fully implemented and water from these projects is not yet available to the water utilities. Based on the information contained above, we believe the Proposed Deviation has the effect of eliminating or transferring the City's existing legal source of water from Lake Okeechobee to a new, unauthorized purpose of combating HABS.

We also believe the Proposed Deviation violates Sections 373.042 and 373.0421 by impacting the attainment of MFLs established by the District for Lake Okeechobee, the St. Lucie River, the Caloosahatchee River, Northwest Fork of the Loxahatchee River and the Biscayne aquifer and impeding implementation of the associated prevention and recovery schedules, as described above. This constitutes significant harm to water resources and the environment of the area.

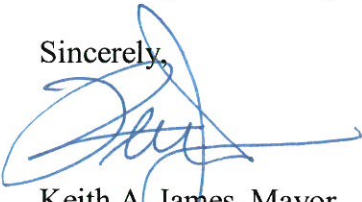
#### 4. Conclusion

For the reasons stated above, the recommended FONSI should be rejected because the Proposed Deviation does in fact significantly affect the human environment.

#### J. Recommendations

In conclusion, the City respectfully requests that the Corps not implement the Planned Deviation. Instead, the of operating Lake Okeechobee to address HABS should instead be left to the current LOSOM process. However, if the Corps still wishes to proceed with the Planned Deviation, the controlling law and regulations indicate that this can only be done after preparation of an EIS.

Sincerely,



Keith A. James, Mayor  
City of West Palm Beach

cc: Ryan Fisher, USACOE  
Major General Diana Holland, USACOE  
Lieutenant Colonel Jennifer A. Reynolds, USACOE  
Lieutenant Colonel Todd Polk, USACOE  
Melissa Nasuti, USACOE  
Drew Bartlett, South Florida Water Management District  
West Palm Beach City Commission

#### ATTACHMENTS

1. *Lower East Coast Regional Water Supply Plan – Planning Document (SFWMD 2000)*
2. *Lower East Coast Regional Water Supply Plan – Appendices (SFWMD 2000)*
3. *2000-2001 Drought in South Florida Report (SFWMD 2001)*
4. *Utilities of Concern in the Lower East Coast Regional and Lake Okeechobee Service Area (SFWMD 2007)*
5. *Water Control Plan for Lake Okeechobee and Everglades Agricultural Area (ACOE 2008)*
6. *Lower West Coast Water Supply Plan Update – Planning Documents/Appendices (SFWMD 2017)*
7. *Lower East Coast Water Supply Plan Update – Planning Document (SFWMD 2018)*

8. *Lower East Coast Water Supply Plan Update – Appendices (SFWMD 2018)*
9. *Potential Impacts of the Army Corps of Engineers 2019 Planned Deviation to the Water Control Plan for Lake Okeechobee and Everglades Agricultural Area: Water Quality and Ecological Impacts and Attachments (Janicki Environmental 2019)*
10. *Potential Impacts of the ACOE's 2019 Planned Deviation to the Water Control Plan for the Lake Okeechobee and Everglades Agricultural Area (LORS 2008) – Water Supply and Hydrologic Review (Collective Water, LLC 2019)*