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July 29, 2020

Colonel Andrew Kelly  
District Commander  
Department of the Army, Jacksonville District Corps of Engineers  
701 San Marco Boulevard  
Jacksonville, FL 32207-8175

**Subject: LORS 2008, 2020 HAB Deviation**

Dear Colonel Kelly:

The Lake Worth Drainage District (LWDD) thanks you for the opportunity to provide comments on the proposed "Supplemental Environmental Assessment and Proposed Finding of No Significant Impact – 2020 Planned Deviation to the Water Control Plan for Lake Okeechobee and Everglades Agricultural Area (LORS 2008)"(2020 EA), dated June 2020.

LWDD is a single-purpose Special Taxing District created by the Florida Legislature in 1915 to manage water resources in southeastern Palm Beach County for Flood Control and Water Supply purposes. This mission requires that we rely heavily upon the regional water resource network of the federally authorized Central & Southern Florida Project for Flood Control and Other purposes (C&SF Project) for both discharge of excess water during wet periods and as a source of regional supplemental water during dry periods. Maintenance of the appropriate groundwater elevations in our region is critical to protecting the surficial aquifers in southeastern Palm Beach County and the public water supply utilities that rely upon them, from the impacts of Saltwater Intrusion.

While our primary source of supplemental water is Water Conservation Area No. 1 (Arthur R. Marshall Loxahatchee National Wildlife Refuge), the U.S. Army Corps of Engineers (USACE) Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Dade Conveyance System requires that under certain conditions, no supplemental water can be withdrawn unless it is preceded by an equivalent volume of water brought in from Lake Okeechobee. This situation inextricably connects the supplemental water needs of southeastern Palm Beach County to Lake Okeechobee – particularly during drought conditions. Therefore, any proposed alteration in the operations associated with Lake Okeechobee are of particular concern – especially with regard to potential impacts to the water supply objectives of the Lake.

Unlike the previous 2019 Environmental Assessment and Proposed Finding of No Significant Impact, the 2020 EA contains a significant level of scientific detail supported by complex hydrologic simulation modeling output. It is apparent that the LOOPS simulation model has been modified for this analysis, and at this juncture, we have not seen information associated with those changes or any Peer Review that assesses application of the revised model for use in this effort. Furthermore, the voluminous quantity of

this detailed information makes it extremely difficult to adequately digest and provide substantive technical comments within the limited 30-day review period provided by the USACE.

Nonetheless, we have endeavored to evaluate the information provided and have provided comments herein.

**Deviation Objective:**

The Corps is proposing to initiate the proposed planned deviation from LORS 2008 in anticipation of, and following, freshwater Harmful Algal Blooms (HABs) to reduce the risk of exacerbating potential concerns regarding Human Health and Safety associated with algal blooms in Lake Okeechobee, the St. Lucie, and Caloosahatchee estuaries while not impacting other project purposes.

The planned deviation would allow the flexibility to make advanced releases east and west, larger than LORS 2008 Part D (recommends Lake Okeechobee releases to tide (estuaries)) calls for and makes releases south when LORS Part C (recommends Lake Okeechobee releases to the Water Conservation Areas (WCAs)) does not recommend releases within the Beneficial Use Sub-band, Base Flow Sub-band, Low Sub-band, and the Intermediate Sub-band. These advanced releases, when risk of transporting harmful algal blooms (HABs) is low, would allow greater flexibility to reduce releases during times when HABs are present in the lake or estuaries.

The intention would be to change only the timing of releases and not the cumulative volume. The proposed planned deviation intends to help mitigate risk associated with HABs by increasing operational flexibility. Certainly, greater flexibility is desired by the agencies responsible for water control operation. It can be a useful tool for operations staff who can use judgement in the face of changing conditions to make reasonable decisions to obtain the greatest overall benefit among competing objectives. However, as operational flexibility increases, the ability to predict the outcome for various performance objectives becomes less and less clear. Leaving stakeholders with significant uncertainty as to the benefit of the added flexibility to address or protect their areas of concern; particularly those involving current Project Purposes.

It is therefore incumbent upon the USACE to be as prescriptive as possible in addressing added flexibility to the current operational protocols.

**Water Quality:**

While LWDD recognizes the importance of reducing or avoiding the impacts of HAB's to the communities of south Florida, it is important to recognize that the ultimate causation of this risk to Human Health & Safety is the nutrient composition of waters associated with the coastal estuaries and the upland sources of this nutrient input. The USACE has no directive to intervene on the State's authority to manage water quality issues. To this end, there are very few water quality projects associated with the joint Federal/State Comprehensive Everglades Restoration Plan (CERP). Therefore, the proposed 2020 EA is attempting to identify a water quantity solution to a water quality problem.

The USACE states that while the Corps does not have general authority to implement pollution control measures for the C&SF Project, it can incorporate operational methods to minimize nutrients and their effects on fish and wildlife to the maximum practicable extent. However, this implies that limits exist to the application of flexibility in the schedule if the proposal impacts a stated Project Purpose.



**Public Health & Safety:**

The agency goal established for LORS 2008 is to implement a regulation schedule that would ensure public health and safety while improving the health of Lake Okeechobee and the St. Lucie and Caloosahatchee estuaries, with minimal or no impact to the competing project purposes. LORS 2008 objectives consist of a) ensuring public health and safety; b) managing Lake Okeechobee at optimal levels to allow recovery of the lake's environment and natural resources; c) reducing high regulatory releases to the estuaries; and d) continuing to meet Congressionally authorized project purposes including flood control, water supply, navigation, fish and wildlife enhancement, and recreation.

The USACE's intent with the proposed deviation is to reduce the risk of exacerbating potential health concerns associated with algal blooms in Lake Okeechobee, the St. Lucie, and Caloosahatchee estuaries while not impacting other project purposes. However, the 2020 EA recognized that conditions could occur that would impact the water supply objectives associated with Lake Okeechobee.

Given that south Florida droughts are notoriously difficult, if not impossible to predict, it is likely that an unanticipated drought could occur in the time frame that the proposed deviation is expected to be active. The 2020 EA describes the situation where advanced releases are made in anticipation of HABs occurrence followed by an extended period of deficit rainfall. In this scenario, there would little or no water available to recover Lake stages to the point that water supply interests would not be impacted. The 2020 EA states that there is a low probability for this to occur—but this exact scenario preceded the 2001 drought that resulted in serious water supply impacts and subsequent economic damage to urban, and agricultural interests.

**HAB Performance Measures:**

The 2020 EA States; "Little is known about exactly what environmental conditions trigger toxin production."

The proposed action would allow for significantly greater flexibility with water management decisions when HABs are present or forecasted in Lake Okeechobee, the St. Lucie or Caloosahatchee estuaries or the system of canals that connect them.

Some algal blooms are harmful to lake and estuarine ecology because they can lead to depleted dissolved oxygen in the water and cause fish kills. But these should not be a consideration of this deviation since in these instances, there is no immediate or projected risk to Public Health & Safety. The 2020 EA recognizes that an only small percentage of algae produce toxins, and when those types of algae blooms occur, they are included in a category of algal blooms termed HABs.

Furthermore, algal bloom proliferation is triggered by multiple factors, including but not limited to, light, temperature, nutrients, and hydrology including stagnant low water with low wind conditions. 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 freshwater HAB events.

The EA further states that there is a potential for the algal blooms to initiate in the littoral zone, which then seed blooms in the pelagic zone. The littoral zone ridge submergence provides a better hydrologic connection between the littoral zone and the pelagic zone. Significant algal blooms are primarily linked to blooms initiated in the littoral zones which under high lake conditions are more easily transferred to

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the pelagic zone. Once the bloom mass is initiated in the littoral zone and then transferred to the pelagic zone, there is a higher potential for a large-scale bloom within Lake Okeechobee. This situation is complicated by the numerous ecological and weather uncertainties that factor into a bloom forming in the littoral zone of the Lake and subsequently moving into the pelagic zone, making the anticipation of HAB formation a problematic assessment.

The State of Florida has deployed two emergency task forces (Blue Green Algae Task Force and Florida Harmful Algal Bloom Task Force) to address algal blooms and has invested significant resources to develop and implement solutions to the algae crisis. To date, neither of these efforts has resulted in specific proposals to adjust Lake Okeechobee operations to address HAB issues.

It is widely recognized that there is enormous uncertainty associated with the formation, composition and projection of HABs in Lake Okeechobee. No Performance Measure currently exists which links Lake Okeechobee operations to the resolution of Health & Human Safety Issues in the region. It is further recognized that the proposed 2020 EA could pose a serious risk to other Project Purposes of Lake Okeechobee and the C& SF Project.

**Summary:**

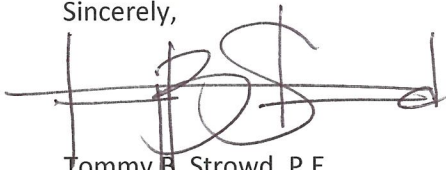
The balance of Lake Okeechobee performance goals has historically been a complicated multi-objective effort, riddled with uncertainty based on the availability of reliable scientific information and the extreme variability of climate, weather, and ecological responses. To assure stakeholders that the operational protocols are safe and reliable, flexibility has historically been constrained such that performance outcomes can be reliably anticipated.

The 2020 EA is absent any real Performance Measures that are associated with the primary focus of the document. There are currently only loosely identified scientific relationships that relate the occurrence of HABs to conditions in Lake Okeechobee. Unfortunately, this has led to the position that extreme operational actions are required to promote a solution that has very little chance of successfully remedying the problem.

Furthermore, the uncertainty associated with this proposal places a significant risk to water supply users across south Florida.

Thank you again for the opportunity to comment on this document. As always, LWDD stands ready to assist you in any way possible.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tommy B. Strowd', written over a horizontal line.

Tommy B. Strowd, P.E.

Executive Director / District Engineer

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