St. Lucie Estuary Lake Discharge Elimination Vision Statement

Lake Okeechobee discharges have been impacting the City of Stuart since 1923.

Human health has suffered. As a result of harmful, polluted freshwater discharges, the citizens of Stuart and surrounding areas have been exposed to dangerous toxins that have adversely impacted human health. A recent study from The Ohio State University found that our region experiences deaths due to nonalcoholic liver diseases nearly twice that of the national average. This higher rate of death is correlated to Lake Okeechobee discharges containing or otherwise proliferating toxic cyanobacteria in the region (OSU 2015). Other studies raise concerns over potential increased risk of both cancers and neurological and neurodegenerative diseases resulting from human contact with the cyanobacterial toxin microcystin.

Our economy has suffered. In addition, polluted discharges from Lake Okeechobee have adversely impacted the region's economy through depressed retail and commercial business revenue, loss of water-related jobs, and other partial or total losses to businesses that rely on clean water in the St. Lucie Estuary. A recent economic analysis by (Martin County, 2017) determined that not only have both sales revenues and hotel occupancy rates been impacted by algae bloom events, but overall visitations can be reduced regionally for up to 10 years following these environmental and health-related crises.

Our environment has suffered. Furthermore, the region's estuarine and near-shore ecosystems have been significantly degraded with catastrophic impact and potentially irreversible damage caused by the transport and deposition of millions of tons of sediment (muck) and nutrients from Lake Okeechobee, into the Saint Lucie Estuary. Infrequent and intermittent relief from these damaging discharges has failed to allow aquatic life in the Saint Lucie Estuary to rebound to the point of reestablished biodiversity and resiliency, thereby compounding the man-made threat posed to this ecosystem.

The U.S. Army Corps of Engineers (Corps) is primarily responsible for sending polluted water to the St. Lucie Estuary. Since 2008, operations by the Corps have exacerbated the human health, economic, and environmental impacts as a result of discharging greater volumes of polluted lake water during the summer and fall months when toxic algae are more prevalent. However, during 2019, the Corps and the South Florida Water Management District moved enough lake water west and south during the dry season to sufficiently allow the lake to drop below 11.0 ft by June 1st. No Lake Okeechobee Service Area (LOSA) water supply users experienced significant damages by having the lake at that level; in addition, submerged aquatic vegetation in the lake rebounded by fivefold, and further expansion is critical to both the recovery and resiliency of this fragile ecosystem. As a result of achieving this low stage at the beginning of the rainy season, it was not necessary to make damaging releases to the St. Lucie Estuary during the summer and fall of 2019.

Operational Goal. While lake stage on June 1st is not the sole determinant, lowering Lake Okeechobee's water level below the nominal target of 12.5 ft by June 1st will reduce the potential for discharges of potentially toxic lake water to the City of Stuart and the St. Lucie Estuary. ***The fastest, simplest, and cheapest way to minimize toxic and damaging discharges to the estuaries is to lower the lake by sending maximum beneficial freshwater flows south to the Everglades National Park and west to the Caloosahatchee River throughout the dry season, and not to the St. Lucie River with a goal of bringing Lake Okeechobee to a target level of 11 feet NGVD or lowest achievable level by June 1st, the start of the wet season. To accomplish this goal, the U.S. Army Corps of Engineers should prioritize sending maximum beneficial flows south and west earlier in the dry season. Any and all freshwater discharges to the St. Lucie Estuary should be identified as a "measure of last resort" in all operational parameters within the Lake Okeechobee water management system.***

This operational goal is within the current operational flexibility of the U.S. Army Corps of Engineers, as defined in the Lake Okeechobee Regulation Schedule (LORS08).

The City of Stuart is committed to continued coordination with the Corps, the District, and other local, state, and federal agencies to achieve this goal.

References:

The Ohio State University, 2015. Zhang, F., Lee, J., Liang, S. *et al.* Cyanobacteria blooms and non-alcoholic liver disease: evidence from a county level ecological study in the United States. *Environ Health* 14, 41 (2015). https://doi.org/10.1186/s12940-015-0026-7.

Tourism Economics, An Oxford Economics Company, on behalf of Martin County, FL 2017. The Impact of the 2016 Algae Blooms in Martin County, FL. Losses Suffered by the Tourism Sector and Overall Economy.