11. **OLD BUSINESS**

a. Water Quality Issues

2. Staff Report

i. Water priority initiatives

August 2007

City of Sanibel Priorities Regarding Nutrient Pollution of the Caloosahatchee Estuary

Statement of the Problem:

The waters surrounding Sanibel define our island community. The quality of our waters, and the marine life within, is at risk because of massive and prolonged water discharges from Lake Okeechobee into the Caloosahatchee River. These discharges contain heavy nutrient loads, especially nitrogen and phosphorus, that contribute to algae blooms, as well as dense sediments that can cover grass beds and be re-suspended whenever the wind blows. Impacts to seagrass beds, vital to the health of the estuary, have been particularly severe. Drift algae deposits on our previously nearly pristine beaches have resulted in economic damage and a reduction in resident's quality of life. The agencies responsible for these discharges are the South Florida Water Management District and U.S. Army Corps of Engineers. It is the City of Sanibel's intent to get these agencies to change their policies and construct the necessary changes to the Lake Okeechobee water management infrastructure so that in conjunction to needed improvements in the way the stormwater and other nutrient sources such as sewage and fertilizer are handled in the Caloosahatchee Basin itself, our estuaries are no longer threatened.

Tier 1. Proposed Top Priorities:

1. **Provide Input to Lake Okeechobee Management Decisions** - The U.S. Army Corps of Engineers' (USACE) Lake Okeechobee Regulation Schedule Study (LORSS) process is nearing an end but is no less of a priority for the City. The new schedule, on track to be in place by January 2008, is a significant improvement over the previous schedule which had little reference to the potential damage to estuaries caused by excessive Lake discharges. It keeps the Lake at a generally lower level, measures flows and discharges at the Caloosahatchee's Franklin Locks (S-79) which is more accurate, and emphasizes consideration of the estuaries in operational decisions. However, it also provides the USACE with maximum flexibility to determine flows, which means that significant input must be made by the City and indeed the entire Florida west coast in order that other potentially competing interests do not lead the Corps staff into making bad decisions for this coast, as was certainly the case following Hurricane Wilma when unnecessary huge discharges fouled our waters for the second straight year. The loss of this water from the Lake is still severely impacting communities and water users near the Lake during the subsequent and ongoing drought. The way to provide input is for staff to participate in the weekly management decision meetings as the Lake rises. Persuading the USACE and the South Florida Water Management District (SFWMD) to prepare and utilize all available alternative storage and flow options south of the Lake prior to damaging releases to the estuaries is also critical. The SFWMD promised 450,000 acre feet of such storage

at a City Council meeting in 2006 and these lands have yet to be made available. Non-emergency releases to the Caloosahatchee River should be of a maximum of 800 cubic feet per second (cfs) average over a 30 day period as measured at the Franklin Locks (S-79) during the dry season (November-May), and a maximum of 2800 cfs average over a 30 day period at S-79 during the wet season (June-October). These maximum release levels are based on the findings of SFWMD biologists in order to protect the most important estuarine components including marine seagrasses, spotted seatrout and oysters. The Lake also needs to be managed not solely as a reservoir for water supply, but as an ecologically viable Lake with healthy aquatic vegetation.

2. **Promote Productive Projects that will Benefit the West Coast for the State's Northern Everglades and Estuaries Protection Act (NEEPA) Implementation** The 2007 Legislature has designated $200 Million in Funds to be spent on projects to improve water quality and decrease excessive flows to both the Caloosahatchee and St. Lucie basins. The SFWMD is in charge of these funds and has begun a research and project evaluation phase that will ultimately lead to projects in the ground. The City needs to be a part of that process including via participation in the "Northern Everglades Interagency Team" which has its first meeting on August 15 in Okeechobee, Fl.

3. **Support Water Quality Treatment for the C-43 Reservoir** We strongly encourage the State to work with the Corps to finance, design and construct a significant WQ component for the Caloosahatchee Basin C-43 CERP (Comprehensive Everglades Restoration Project) Acceler8 Reservoir. A Stormwater Treatment Area (STA) area is essential for the C-43 reservoir project so that water quality improvements are made prior to any releases from the reservoir into the Caloosahatchee and downstream estuary. Approximately 1800 acres of land is currently available at the SFWMD owned Barry Groves C-43 site that could be utilized for this purpose. If additional lands are necessary for the STA, that acreage needs to be acquired as soon as possible to prevent conflicting land uses from preventing adequate water treatment.

4. **Push for Full Funding and Expedited Construction of "Mod Waters"** The State should plan together with the federal government to fund the full "skyway" road along Tamiami Trail to allow more water to flow towards Florida Bay as part of the proposed "Mod-Waters" CERP project. Currently the 11 miles that was proposed by the scientific community has been scaled back to 3 miles due to budget constraints. This project is absolutely essential for all parts of CERP that result in more flows to the south. Funding of this portion of the project is part of the federal Water Resources Development Act that is expected to come up for a final Senate vote in September, then head to an already announced veto by the President, then back to Congress where an over-ride is hoped for.

5. **Advance New Flow-ways, Storage and "Decompartmentalization" of Surface Water South of Lake Okeechobee** New storage and flow-way projects

requiring significant new land acquisition are needed to move a much higher volume of Lake water south through the Everglades Agricultural Area (EAA), Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs) and, following water quality treatment, into the Everglades and Florida Bay. These new waterbodies could benefit local communities as recreational amenities. An essential part of any such system is to restore sheet flow to the Everglades by widening existing canals, removing berms, and adding culverts and bridges to existing roadways. This flagship CERP project which would partially restore the Everglades "River of Grass" is widely known as "Decomp" but most parts of the overall project requires that Mod Waters improvements be in place before federal appropriations for funding are even included in some future WRDA Bill. However, final design and some canal widening projects can and should be completed before Mod Waters but are facing extraordinary and prolonged delays.

6. **Promote Herbert Hoover Dike Repair and Serious Evaluation of Spillway/Flow-way** The most seriously deteriorated sections of the dike are under repair and scheduled to be fixed by 2010. This in itself will allow for the retention of an additional 1'-1.5' of water during wet periods which translates to up to 750,000 acre feet of additional storage and considerably less concern about public safety in the communities around Lake Okeechobee. However, the past practices of keeping the water in the Lake at too high an elevation for water supply has in the past led to extreme discharges to our estuary when additional heavy rainfall led to high flows from the Kissimee River Basin. Keeping the Lake artificially high has also severely degraded the remaining marshlands and submerged aquatic vegetation around the perimeter of the Lake. These wetlands and aquatic plants are crucial in the effort to reduce nutrient loading in the Lake waters and to wildlife and fisheries. Therefore the City should support repairs but not accept a return to managing Okeechobee more as a reservoir than a Lake. The potential for designing a spillway set at somewhere near 15.5' leading to a flow-way south through the EAA would also alleviate public safety concerns and prevent disastrous flows east and west and should be seriously evaluated by the USACE and SFWMD and included in future CERP projects.

7. **Support Improvements to Water Quality, Storage and Management Practices in the Kissimee River Valley** Most of the water and nutrient pollution entering the Lake does so from the north. Though the Kissimee River Restoration Project continues to be a great success, there is a tremendous need to store, slow down and treat the water that flows south to the Lake all the way from the Orlando area. This must be a massive multi-agency and multi-project effort that needs to include the state's Total Maximum Daily Load (TMDL) water quality improvement program; the Best Management Practices (BMPs) Program that details how farms, ranches and subdivisions treat their stormwater run-off , manure, sewage, fertilizer, etc.; new water storage reservoirs, new STA's and wetland preserves; future development regulation; etc.

8. **Caloosahatchee Basin Nutrient Reduction Initiatives** These needed initiatives include; improving the review of Developments of Regional Impact (DRIs) for better stormwater treatment and reduction of wetland impacts including a **TRUE** no net loss of wetlands implementation with more emphasis on wetland protection and less on mitigation; changing agriculture BMPs to be mandatory, not voluntary as they are now; improved fertilizer regulations for all user groups; conversion of septic and package plant sewage treatment to state of the art central sewage treatment; installation of filter marshes prior to polluted water entering the River; better solutions for sewage solids disposal; audits of treated wastewater inputs; establishment and funding of stormwater utilities in communities that have significant populations but antiquated stormwater systems; etc. Lee County, SFWMD, DEP and the Regional Planning Council are the lead agencies on this but this complex undertaking needs priority ranking and buy-in for all local governments and state and federal agencies in the Caloosahatchee River Basin.

Tier II and III Priorities:

1. Water Quality and water flow monitoring including SCCF's Marine Labs Land-Ocean Biogeochemical Observatory project and sediment flux and analysis. Much of the existing water quality data is of little use without corresponding flow measurements to determine pollutant loading (concentration as a function of total volume).

2. Gulf of Mexico and estuary algae and nutrient research support and funding.

3. Algae clean-up on the beaches to remove nutrients from nearshore waters where and when this activity does not conflict with nesting shorebirds including snowy plovers.

4. Keep the USACEs apprised of health and safety issues associated with excessive discharges since that is one of their most important decision tree factors.

5. Pressure agriculture to store water on their own lands rather than the current status quo where every time it rains the water is immediately drained and/or pumped off the fields to an adjacent waterbody, decreasing surrounding storage availability and adversely impacting water quality. When dry weather returns they then want the water back for irrigation which leads to water managers keeping storage areas artificially high to serve this perceived need.

6. The current design of water control structures at s-77 and s-79 releases water from the bottom, which results in discharges of polluted Lake sediments and churns this muck into suspension in the water column, severely reducing water clarity. Releases over the top of the structure would result in undesirable floating vegetation and debris reaching the estuary. The City should urge the redesign of these two structures so that they release from the middle of the water column rather than the top or bottom. A mid-water release could reduce high phosphorus

sediment loads in the Caloosahatchee Estuary. A program of mechanical removal of sediments and floating debris upstream of each structure could then remove these pollutants from the system.

7. Technologies and funding must be found to remove the polluted muck from Lake Okeechobee. The current drought is the perfect opportunity to make major progress on the removal of these heavily polluted sediments.

8. The District and the Corps should re-examine regulatory schedules for Water Control Areas (WCAs) that release water to canals along Florida's east coast to allow for more water to be released from the Lake to these same WCA's. The current conservative regulatory schedules contribute to the lack of capacity for releases to the south.

9. Work with Department of Agriculture and federal entities to minimize spraying for cattails and more efficiently manage exotic vegetation along Lake Okeechobee to reduce accumulation of dead organic matter. In the Lake's degraded condition, this dead material is reducing oxygen in Lake waters and contributing to the excessive nutrient load.

10. Direct the Florida Department of Community Affairs, the SFWMD and FDEP to help prevent conversion of EAA lands to limerock mines and subsequent residential subdivisions or any other development that will forever preclude the ability to utilize these lands for water storage and flow-ways. As these lands become unusable for agriculture they should be purchased to restore and return as part of the Everglades natural system.

11. The Aquifer Storage and Recovery (ASR) component of CERP has been depended upon to provide very considerable storage and providing an alternative destination for excessive Lake water. However, the initial design and permitting of experimental ASR wells have been blocked and delayed by excessive State and Federal red tape. We need to know very quickly whether this technique is going to be viable and the red tape needs to be removed. The current plan is not to have even the feasibility report completed by 2010. Delays and uncertainties in the program have led to a new assessment team involved with preparing an "ASR Contingency Plan" which is something of a misnomer since it is tasked with evaluating how much of a shortfall in storage would result if ASR was either only 50% implemented or 100% eliminated from CERP, not what would replace that storage as a contingency. The Deep Well Injection Alternative needs to be thoroughly and quickly evaluated as one part of a storage contingency together with more storage north and south of the Lake and flow-ways south.

12. Provide input to the Total Maximum Daily Load (TMDL) determination and implementation for the Caloosahatchee River, especially for nitrogen and phosphorus loading.

13. Restore Lake Hicpochee and Lake Flirt in the eastern portion of the Caloosahatchee River and utilize these wetlands for storage and water treatment. Beneficial slowing down of flows and improvements to water quality could also be attained by restoring the historic river oxbows.

14. Consider the use of Recyclable Water Containment Areas for storage on agricultural land as proposed by E. A. Hanlon. "Water Farming" needs to be put into place quickly to the greatest degree possible until more permanent solutions are implemented.

15. Land acquisitions in all areas of the basin should be prioritized and accelerated wherever possible, since every little bit of storage and slowing of flows helps to reduce and treat all types of stormwater runoff. Real estate prices are at recent lows with many motivated sellers which makes now an ideal time to purchase lands.

16. Prohibit all back pumping of agricultural water back into the lake regardless of lake level. Currently this damaging practice is still done during times of both high and low water in the EAA. Recent court decisions and actions by the SFWMD provide some encouragement that this activity may be less frequent but vigilance is recommended. Drainage systems that allow stormwater to flow off farms and ranches directly into the Lake or tributaries also need to be retrofitted for more storage and pollution filtration.