

ITEM #26₍₂₎

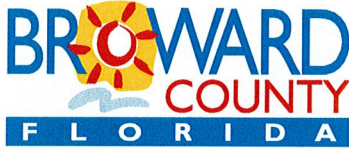
ADDITIONAL MATERIAL

10:00 a.m. Regular Meeting

MARCH 28, 2019

SUBMITTED AT THE REQUEST OF

**ENVIRONMENTAL PROTECTION AND
GROWTH MANAGEMENT DEPARTMENT**



**ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT
ENVIRONMENTAL PLANNING AND COMMUNITY RESILIENCE DIVISION**
115 S. Andrews Avenue, Room 329H • Fort Lauderdale, Florida 33301 • 954-519-1270 • FAX 954-519-1496

To: Broward County Board of County Commissioners
Thru: Bertha Henry, County Administrator
From: Dr. Jennifer Jurado, Chief Resilience Officer and Director *JJ*
Environmental Planning and Community Resilience Division
Date: 3/22/2019
Re: C-51 Reservoir Project Update

This communication provides an update to the collective activities being undertaken to support advancement of the C-51 Reservoir Project.

As shared as part of the February 28, 2018 Parking Garage Update, on February 6, 2019, staff engaged in several significant briefings with the Governor's staff and senior legislators relating to the status of the C-51 Reservoir Project, the importance of pending legislation in allowing the participation of the South Florida Water Management District (SFWMD) in portions of the project, as well as the need for continued policy and permitting support by the SFWMD planning and regulatory staff, especially during the period of transition of the Governing Board.

We are pleased to report that House Bill 95 was heard on March 20, 2019 with unanimous approval (111-0). Scheduling of the Senate version of the bill (SB 92) in the full appropriations committee is pending. County staff has aided several recent conversations with interested stakeholders regarding the merits of the C-51 Project. County staff has noted it is a regional water resource development project that will augment the function and flexibility of the broader water management system while dispelling concerns that the C-51 is reliant upon Lake Okeechobee to support consumptive use permitting, or that the objectives of the C-51 project can somehow be achieved with construction of other reservoir projects.

Water and Wastewater Services is advancing a contract amendment (Item 26) on the March 28, 2019 Board agenda providing for an extension to the termination deadline for obtaining permitting and construction financing to November 30, 2019. While the extension is primarily for the benefit of the land owner, this also expands the opportunity for additional partners to formally engage in Phase I of the project. Regarding the County's own purchase of a 6 million gallon per day (MGD) allocation, WWS has secured an additional 3MGD allocation from SFWMD to benefit the South Regional Wellfield through 2065. The remaining 3 MGD will be shared between our service Districts 1A and 2A.

Staff has reviewed the opportunity for broader project participation within Broward County based on consumptive use permits and projected demands. A meeting has been requested with the

City Manager for the City of Fort Lauderdale to review the history of the project, including the City's historical participation, and benefits of Phase I engagement as part of the City's overall long-term water supply plan. The City of Cooper City has also expressed interest in revisiting this partnership opportunity.

As part of on-going collaboration and engagement with the Broward Workshop and the Greater Fort Lauderdale Chamber of Commerce in support of the C-51 Reservoir Project, staff updated a briefing document to aid private sector partners in their advocacy during Broward Days in Tallahassee (see attached).

Staff continues to remain actively engaged in all aspects of the project (policy, planning, and technical) and continues to coordinate with neighboring counties, local municipalities, private sector partners, legislators, and senior agency officials to advance participation and accelerate construction of Phase I development of the project.

Please feel free to contact me at your convenience if you have any questions, or need additional information.

Cc: Monica Cepero, Deputy County Administrator
Henry Sniezek, Director, Environmental Planning and Growth Management Dept.
Alan Garcia, Director, Water and Wastewater Services

C-51 RESERVOIR PROJECT

Water Quality and Environmental Benefits

Summary and Pending Action

The C-51 Reservoir Project represents a regional water supply project now in its 13th year of planning. The Project involves the phased development of a 75,000 acre-foot reservoir for the purpose of providing regional flood protection, water quality, water supply and environmental benefits. Phase I capacity is expected to provide 35 million gallons per day (MGD) in water supply, of which 14 MGD is committed to water providers. Once a threshold of participation is achieved, construction can be completed in 2-years. Current legislation - SB 92 and its companion HB 95 - would allow for state appropriation of funds and participation of the South Florida Water Management District in portions of the project in addition to clarifying operational protocols. These legislation is critical to the advancement and effective operations of the project, as a compliment to other state investments and regional water storage features.

Introduction to the Lake Worth Lagoon

The Lake Worth Lagoon (LWL) is one of Florida's most valuable ecological resources. Historically, the LWL contained more than 4,000 acres of seagrasses and provided habitat for numerous species, including over 195 different fish species. Located in central Palm Beach County, the LWL is about 20 miles long, up to a half-mile wide, and eight feet deep. During the last 100 years, the health of the LWL has been substantially degraded by excessive freshwater inputs from the LWL watershed, which includes 6 basins. Discharges from the C-51 canal account for the greatest volume of flows (ca. 55% in 2013).

Water Quality

Freshwater discharge from the C-51 canal directly affects turbidity, salinity and nitrogen concentrations in the lagoon with a positive correlation between water quality and distance from the C-51 canal. Particularly problematic is the heavy sediment load associated with these flows (averaging 270 million gallons per day) contributing to reduced light penetration, degradation of benthic habitat, and reduced biodiversity. While the S-155 Structure on the C-51 canal provides partial impoundment and reduction of sediment loads upstream of the LWL, excessive flows continues to burden the estuarine system requiring active sediment management as part of environmental restoration objectives and the construction of surface water storage reservoirs for diversion and treatment of freshwater flows as a priority restoration initiative. Water quality benefits extend to the Everglades Protection Areas if flows are diverted for temporary storage and blending with water in the existing L-8 Flow Equalization Basin.

The Need for Storage

Diversion and improved management of freshwater flows was formally identified as a priority restoration strategy for the Lake Worth Lagoon dating to the 1992 Restudy of the C & SF Flood Control Project. The Restudy included sediment removal or trapping within the C-51 Canal and the 2.5 mile area downstream of the confluence of the C-51 Canal and LWL as key projects, in addition to the construction of a stormwater treatment area for achieving water quality objectives and restoration goals. In addition to water quality improvements and reductions in damaging freshwater discharges to the Lake Worth Lagoon, constructed storage within the C-51 Basin and in association with the C-51 Canal was anticipated to help provide flood protection while also providing an additional water source for unidentified users in the region.

The C-51 Reservoir- An Environmental Solution

Recognizing the unanswered environmental challenges associated with excessive flows and discharges to the LWL, local governments, water managers, and water utilities from Broward and Palm Beach Counties have collaborated for nearly a decade to evaluate the feasibility of advancing a regional water resource development project to achieve diverse environmental and water management benefits. The proposed solution includes the construction of 60,000 acre-feet of storage with an in-ground surface water resource (C-51 Reservoir) in central Palm Beach County, in two phases, located to the northwest of the C-51 Canal and adjacent to the existing L-8 Flow Equalization Basin. Hydrologic modeling indicates the ability to capture sufficient basin runoff so as to reduce excess stormwater flows from the western C-51 Basin flows to the LWL by approximately 40% with a concomitant reduction in associated nutrient loads. Excess stormwater capture in the C-51 Reservoir can be later redistributed through the existing canal network for the benefit of providing aquifer recharge and helping to sustain regional water resources. The C-51 Reservoir is modeled to support approximately 150 million gallons per

day (MGD) in stormwater reuse for beneficial purposes while achieving critical water quality improvements in the LWL. Within this total, Phase 1 will support 35 MGD for water supply purposes.

Water Resource Sustainability

The C51 Reservoir is increasingly recognized as vital means for diversifying water sources and helping to meet future water supply needs while protecting existing wellfield capacity. Saltwater intrusion of coastal wellfields is a growing constraint, threatening as much as 40% of coastal wellfield capacity in Broward County alone, and ultimately necessitating a collective shift in withdrawals towards inland wellfields in the next several decades. Under this scenario, the C51 will provide an important source of recharge to a central wellfield corridor, as well as an offset to additional withdrawals. Modeling reinforces this strategy. Not only can the additional water demands be supported without inducing further saltwater intrusion, but of even greater consequence is the ability to hold the line on saltwater intrusion, preventing additional migration that is otherwise predicted under even the lowest rates of additional sea level rise. This approach is not only sustainable, but cost-effective as it allows local governments to take maximum advantage of existing infrastructure and historical investments in regional wellfields in meeting regional water supply needs.

Environmental Benefits:

- Reduces harmful water quality and quantity discharges to the LWL via the S-155 structure.
- Support water quality improvements in the Everglades Protected Areas by offering additional storage and in conjunction with the L-8 Flow Equalization Basin optimizing flows to the Stormwater Treatment Areas (STAs).
- Operated in conjunction with the L8 Flow Equalization Basin, could aid the SFWMD in meeting objectives of the Loxahatchee River Watershed Restoration Project.
- Opportunity to improve water quality delivered to the STAs via blending with the L8 Flow Equalization Basin water.
- Mitigates stormwater impacts and flooding for western and central Palm Beach County.
- Mitigates for saltwater intrusion and protects wellfields in coastal communities.
- Serves as an alternative water supply.
- Supports water resource protection and potential adaptations strategies in light of sea level rise and during drought.

Economic Benefits:

- Provides “Economies-of-Scale” as a regional water resource development project providing diverse benefits to the region.
- Capitalizes on the current construction and engineering work on the existing L-8 Flow Equalization Basin, including the use of the L-8 Flow Equalization Basin’s intake structure and pumping facilities.
- SFWMD will operate and maintain the C-51 Reservoir in conjunction with the L-8 Flow Equalization Basin, resulting in operational coordination and reduced costs.
- Provides a cost-competitive solution relative end-of-pipe water quality treatment, environmental degradation and economic losses, impacts of flooding, and the costs of alternative water supplies and treatment technologies.
- Capitalizes on current mining activities and construction of rock pit.
- Relies largely upon existing conveyance infrastructure.
- Reduces longer-term need for new water infrastructure and energy-intensive treatment technologies.

Details:

- Phase 1 construction is proposed to include 14,000 acre-feet of storage, which results in 35 MGD for water supply delivery. Environmental Resource and Consumptive Use Permits have been issued by the Florida Department of Environmental Protection for Phase 1.
- Phase II expands the project area to include an additional 46,000 acre-feet of storage and potentially another 115 MGD for water supply delivery.
- Phase I construction is estimated at \$161 Million (from current excavated conditions) and Phase 2 construction is estimated at \$286 Million (assuming excavation is completed separately), both subject to construction timing and final contracts.

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