

July 13, 2021
ITEM 14.D.

INDIAN RIVER COUNTY
BOARD OF COUNTY COMMISSIONERS

INTER-OFFICE MEMORANDUM

TO: Members of the Board of County Commissioners

DATE: July 8, 2021

SUBJECT: A Proposal to "Move Water West"

FROM: Joseph H. Earman
Commissioner, District 3

Discussion Item:

My fellow Commissioners, I would like to request the Board consider this proposal to move stored and excess stormwater to the western portion of the county, with its final destination being the Upper St. John's River Basin.

Background

During a past BOCC meeting, former Commissioner Bob Solari initiated a conversation about the possibility of moving water to the west when it might otherwise enter the Indian River Lagoon Estuary, citing a goal of reducing the amount of harmful nutrients entering the Lagoon. Though Commissioner Solari wasn't specific during the conversation as to *how* to make this happen, the basic idea he presented has merit. I believe the County should further investigate the possibility of moving "some" excess water to the western part of the county, specifically into the Upper St. John's Basin, thereby keeping it out of the coastal estuary system.

My investigation into this concept started back in late November, 2020. Having a knowledge of the geography, topography, and history of our County, and the ability to seek out professionals and individuals armed with hydrological insight and historical data, I can now present the following proposal as to how this might be accomplished.

Analysis

We know that the Indian River Lagoon is a fragile estuary system that's being affected by our increase in population, with population gains driving more development and thus more

storm water runoff entering the lagoon. This is one of the main issues we've all been trying to address.

We can't remove *all* the water entering the lagoon, nor should we, since the lagoon depends on the introduction of fresh water to keep its brackish system intact. But we can reduce *some* amount of water entering the lagoon, which in turn would keep more of the unfavorable nutrients out. Fortunately, the excess water could be put to good use by sending it west and into the St. John's Upper basin.

There are two established water systems already in place and operating in our County, one moving water eastward and the other moving water westward. These established water systems could facilitate moving more water to the west, particularly when combined with a new, large water storage area (or multiple smaller areas) that would properly treat or "polish" the excess water.

The first system -- the primary flood and stormwater control for the majority of Indian River County -- is managed by the Indian River Farms Water Control District (IRFWCD). The District covers from 77th Street (Hobart Road) to the south county line. The IRFWCD's system encompasses almost 300 miles of canals and supporting drainage. The system was designed to move the county's water from the western sand ridge (I-95 corridor) east to the Indian River. Water could be taken out of this system or prevented from entering, depending on the overall system redesign.

The second system is the St. John's Improvement District (SJID), located entirely in the western part of the county and covering around 43 square miles (approximately 25,000 acres). The SJID is bounded by SR 60 to the north, the St. Lucie County line to the south, the St. John's River Water Management District (SJRWMD) canal C-52/L-79 on the west, and the western edge of the IRFWCD on the east. The land use designation for the area encompassed by the SJID is primarily agriculture.

The primary mission of the SJID is to improve, operate and maintain drainage, irrigation, flood water, and surface water control through an elaborate system of canals, pumps, and accessory drainage that flows westward, coupled with the ability to move excess water into the Upper St. Johns Basin, under SR 60 southeast of Blue Cypress Lake, and eventually to the headwaters of the St. John's River. This area is considered the main conduit for sending water into the Upper St. John's Basin.

A large water storage area, or multiple, smaller "polishing lakes," would be needed to hold, manage, and treat the water that is either taken from the IRFWCD system or not introduced within. The "polishing lake(s)" would need to be situated as closely as possible to, and directly connected to, the IRFWCD and SJID water systems. There *may* be a way to incorporate the West Regional Waste Water Treatment Plant Wetland Treatment System into the overall plan due to its relatively convenient location on 4th Street canal between 82nd and 90th Avenues.

As the destination for our stored and excess water, the most integral water management system in this overall concept is the SJRWMD. The SJRWMD is the primary government agency overseeing all water and natural resource matters for 18 Florida counties, including Indian River County. It manages almost 800,000 acres and deals with issues of water quality, water supply, flood protection, and natural systems for the entire St. John's River, its flood plains, basins, tributaries, and springs. Most notably, Indian River County is the southernmost county within the district and is considered the "headwaters" for the *north-flowing* St. John's River.

The SJRWMD is the steward of the Upper St. John's Basin located on the north side of SR 60 and the Blue Cypress area heading north through our county into Brevard County. This area consistently receives a lesser water quantity than is needed to maintain appropriate basin levels. Even during the rainy season, the basin is on average two-feet below what the SJRWMD considers "adequate." In drier areas, invasive plant species are becoming more prevalent; these would not normally be seen if adequate water levels were maintained within the basin. This water shortage is so critical that the SJRWMD is in discussion with the South Florida Water Management District (SFWMD) to move water from South Florida into the Upper Basin.

While we cannot solve the entire water shortage throughout the SJRWMD, we can certainly help both the Upper Basin and Indian River Lagoon by moving some of our stored and excess water west.

The key to the County making these improvements would be the clearing of a pre-existing, unused, 1.5-mile canal that runs north-to-south and is located on the western edge of the IRFWCD and eastern-most part of the SJID. Then, using the far west end of IRFWCD's 4th Street Canal (the "Lateral D," located at the intersection of 4th Street and 98th Avenue) as an access point, water could be transferred by natural or mechanical means through the previously-mentioned unused canal, through the integrated storage/polishing lake(s), and finally onward to the SJID Flow Way (located at Oslo Road) and into the Upper St. John's Basin.

Way Forward

Sufficient groundwork has been laid such that County staff could enter into discussions with the SJRWMD, SJID, IRFWCD, any appropriate State and Federal agencies, and other identifiable stakeholders; the purpose of these conversations would be to define constituent concerns and evaluate the merits, potential return on investment, and engineering feasibility of this concept.

Funding

As of today there is no funding for this project, but a collaborative funding mechanism could be envisioned amongst the various players. These would likely include the SJRWMD and other State of Florida and Federal agencies, such as the Indian River Lagoon Estuary Program. Any BOCC funding would be based on current practices for

this type of effort; there is potential for BOCC approval of a Land Conservation Bond renewal referendum on the 2022 ballot and future use of such bond funds, as allowed by law.

Recommendation

I recommend the BOCC task the County Administrator and Staff to work with the agencies named above in evaluating the merits, potential return on investment, and engineering feasibility of this project. With positive feedback on these criteria, potential funding sources could then be examined in detail.