

TURKEY BRANCH

A Project Critical for the Restoration of Lake Okeechobee and the Coastal Estuaries



THE CHALLENGE: Activities in the Caloosahatchee and Lake Okeechobee Watersheds over the last 100 years have led to the Caloosahatchee Estuary being negatively affected by both altered freshwater inflows as well as excessive nitrogen loads, impacting the ecology and overall health of the estuary. The Caloosahatchee Basin Management Action Plan (BMAP) (December 2012) focuses on nitrogen loading downstream of the S-79 Lock, but states that “additional controls for freshwater inputs and nitrogen loads above S-79 are needed.” The proposed Turkey Branch project is designed to add capacity to help address this challenge.

THE SETTING: Lake Okeechobee watersheds upstream of S-79 contribute 84.7% of the total nitrogen load to the Caloosahatchee Estuary. The Turkey Branch project along with the existing Nicodemus Slough Project will dedicate a significant portion of the watershed to meeting the needs of the Caloosahatchee BMAP.



THE CONCEPT: Design and construct a new large-scale (18,000-20,000 acre) stormwater storage area in an advantageous location that can receive local stormwater runoff and regulatory releases from Lake Okeechobee. The stored water is retained for later beneficial use downstream or to meet minimum flows and levels.

THE BENEFITS: Creating new, supplemental high-volume storage and treatment infrastructure will abate high flows discharged from Lake Okeechobee and provide treated water for base flow to the Caloosahatchee Estuary as needed.

THE DETAILS: The initial plan would consist of the following elements:

1. Lykes will perform a Planning Design and Engineering Study to convert 18-20,000 acres of the ranch to a storage and treatment project with 60% of the project dedicated to High Volume Storage and 40% of the project dedicated to treatment and attenuation.
2. Connect the west edge of Nicodemus Slough to the Turkey Branch project under US Hwy 27.
3. Expand pumping facilities at Nicodemus Slough to provide a fill capacity of both Nicodemus Slough and Turkey Branch of approximately 2,800 to 4,300 acre-feet per day, enabling the proposed project to expand the capacity of Nicodemus and take advantage of its direct connection to Lake Okeechobee.
4. Internal levees would be constructed to divide the site into multiple cells to take advantage of the local topography.
5. An outflow structure would be constructed on the southern edge of the project to release treated water into existing conveyance to the Caloosahatchee River or back to Lake Okeechobee through Nicodemus Slough.
6. All decisions for operating the project would be made in conjunction with the SFWMD. All operations and maintenance will be carried out by Lykes.



THE FUNDING: Current and Future funding opportunities include:

1. Planning: Lykes is conducting performance estimates with various design configurations to guide the Design and Engineering Phase.
2. Design and Engineering: a grant of \$4M is needed to design the components needed for the proposed project. This includes all the testing, design, engineering and permitting to develop construction plans for the project.
3. Construction. A future grant to accomplish the construction of the levees, pumps and control structures will be needed.
4. Operations. An annual funding stream to support the use of the land and operational costs will be needed and is estimated to be \$13-15M depending on the final design.

ABOUT LYKES RANCH: Lykes Bros. Inc. is the largest private property owner in the Lake Okeechobee watershed with over 300,000 acres mostly in low intensity agriculture uses. It will not be possible to meet Lake Okeechobee and Caloosahatchee Basin restoration goals without locating significant features on Lykes property. Lykes is an experienced partner with the SFWMD on three projects; West Waterhole (2008), Nicodemus Slough (2015), and Brighton Valley (2019). The hallmark of the Lykes-SFWMD joint projects is relatively low cost for the project benefits, rapid implementation, and flexibility of operational and financial management. Lykes is and will remain an effective, efficient and cooperative partner in reaching the restoration goals for South Florida.

TURKEY BRANCH PD & E FUNDING REQUEST

The PD&E can be summarized into 3 segments of work:

Segment 1 – Conceptual Design and Pre-Permit Work. We estimate that this Segment will take 1 year to complete at a cost of approximately \$1.5 million. Conceptual Design will include:

- topographic survey,
- preliminary environmental information (identify the maximum extents of wetlands and listed species impacts),
- cultural resource survey to identify areas that require avoidance or impact analysis.
- initial geotechnical design to identify the design criteria for berms and conveyances.
- conceptual layout to establish project limits and berm foot prints,

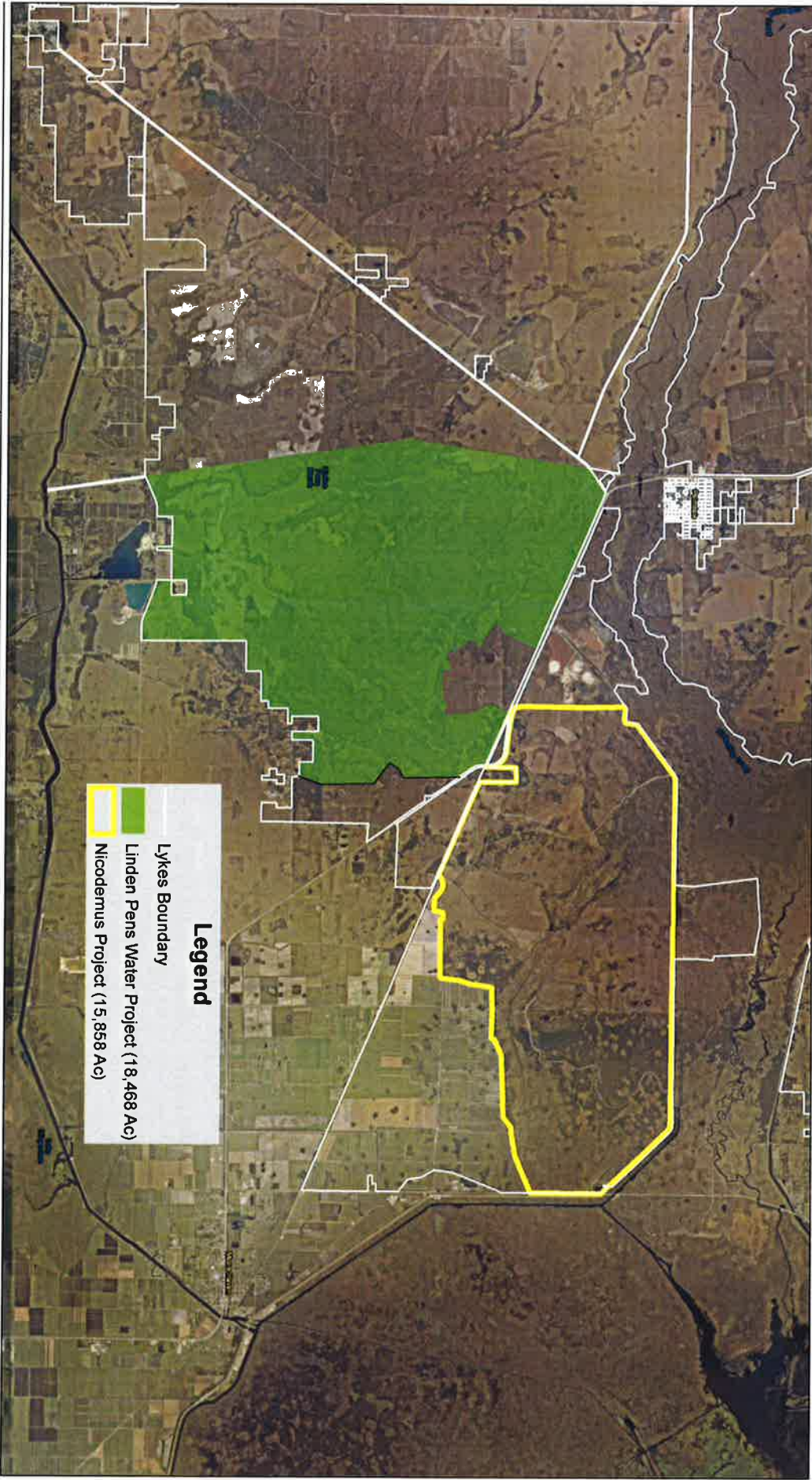
That information would be used in a collaborative process with DACS, SFWMD and DEP, and federal agencies to pick a project design that will maximize project performance and cost effectiveness for a project that would also be added to the appropriate BMAP. Part of that effort will also include estimating the performance of the project from both a nutrient reduction perspective as well as storage capacity and flow control perspective.

This segment would also include Pre-Permit Work include pre-application meetings with South Florida Water Management District, Army Corp. of Engineers, and US Fish and Wildlife Service to establish permitting expectations. Pre-Permit Work will also include meetings with the electric utility supplying the electricity to the project; and FL Department of Transportation and the Railroad regarding crossing their rights of way to connect water into the project.

Segment 2 – Design and Permitting. Based on results of Segment 1, final design and permitting will consume this segment, adding the necessary detail to the information identified in the conceptual design that will be necessary for permitting. More detailed geotechnical, environmental, and topographic surveys will be conducted to enable permits to be issued by SFWMD and the federal agencies, and final construction plans to be developed.

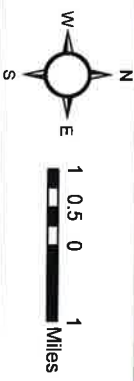
Segment 3 – Construction Plans. Based on finalized permits, construction plans will be prepared to provide the detail required to construct the project.

We estimate Segments 2 & 3 will take 2 years to complete with Segment 2 being the lion's share of the remaining costs, approximately \$2 million. Segment 3 is estimated to cost the final \$500,000.

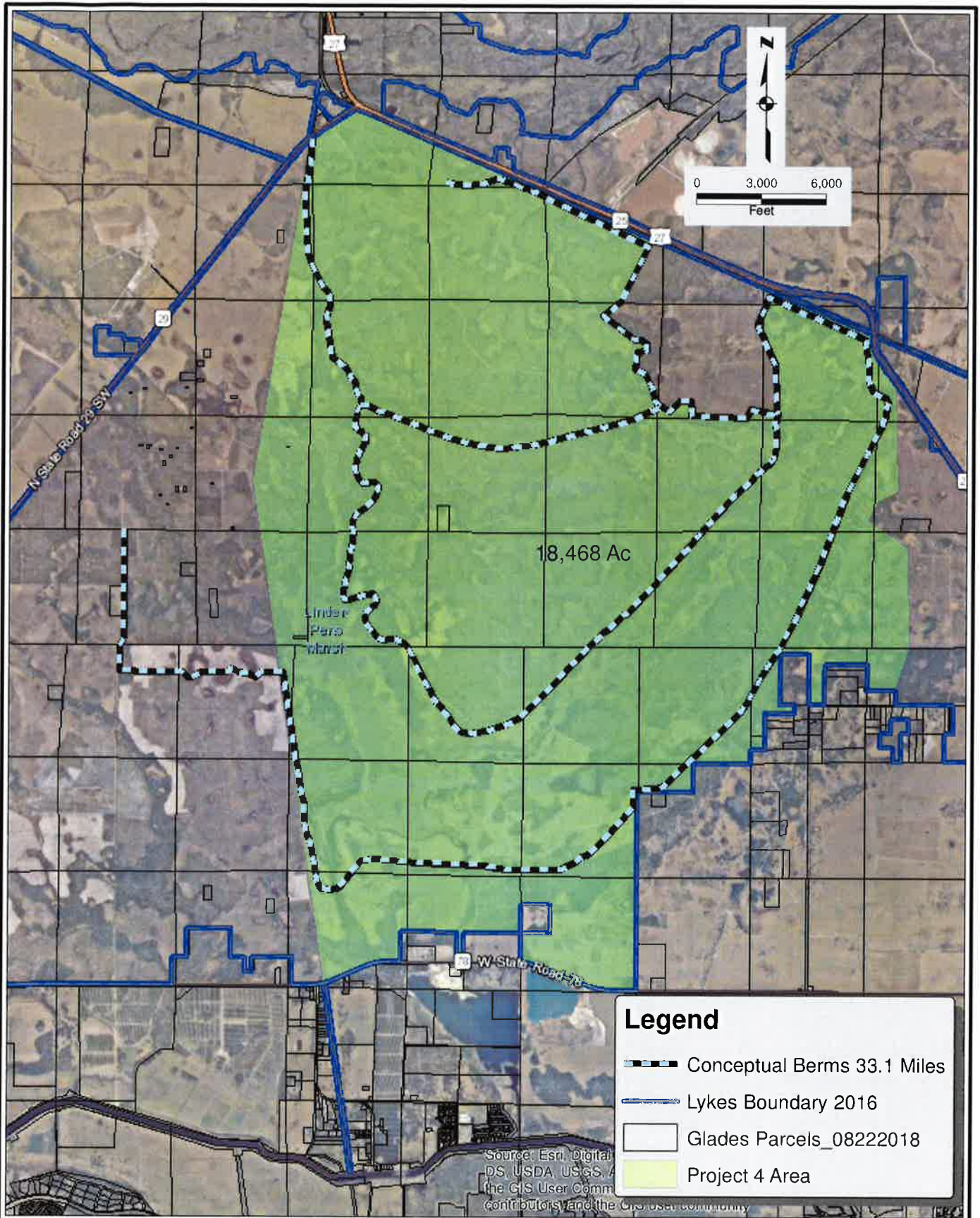


Lykes Bros. Inc.
Linden Pens Water Project
18,468 Ac

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Date: 8/16/2018



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Attachment 1
Project 4 Water Storage

DATE	PROJECT	FILE NO.	SCALE	SHEET
11/29/2018	MKT-009	00-00-00	AS SHOWN	ATT-1