

IMPROVING WATER OUALITY NORTH OF LAKE OKEECHOBEE

Lykes Bros. Inc.'s Brighton Valley Dispersed Water Management Project is officially up and running, storing and treating stormwater just north of Lake Okeechobee.

For more than a century, Lykes Bros. Inc. has been a leading agribusiness in Florida, with over 337,000 acres owned statewide. They have proactively used their resources to address environmental issues by teaming with the South Florida Water Management District (SFWMD) on water storage projects to alleviate high flows and excess nutrient loading to Lake Okeechobee.

Brighton Valley is the most recent Dispersed Water Management project to be completed. As water flows south from Lake Istokpoga towards Lake Okeechobee via the C-41A Canal, up to 40,000 acrefeet of water per year is now able to be diverted onto the Brighton Valley property for dispersed storage.



An intake channel feeds the pump station and, under certain conditions, returns water from the project through overflow structures into the C-41A Canal.

The shallow wetlands created as part of this project will allow water to naturally infiltrate and reduce the concentrations of nutrients prior to being released via either the C-40 or C-41A Canals toward Lake Okeechobee.

This project will help to improve water quality by reducing the phosphorus and nitrogen loads and reduce the need for harmful freshwater discharges to coastal estuaries.

Brighton Valley joins Lykes' existing 16,000acre Nicodemus Slough and 2,500-acre West Waterhole water storage projects. Projects like these deliver a relatively quick solution to our A quarterly publication by:



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Brett Dean, El engineer intern in our utilities market group, has successfully passed the Fundamentals of Engineering (FE) exam. He joined Johnson Engineering in 2016 as an intern while attending FGCU.



Brennan McGill, El engineer intern in our transportation group, has successfully passed the Fundamentals of Engineering (FE) exam. He joined Johnson Engineering in 2018 as an intern while attending FGCU.



Logan Taylor, El engineer intern in our electrical group, has successfully passed the Fundamentals of Engineering (FE) exam. Logan earned a BS in **Electrical Engineering** from the University of Central Florida.

current water crisis, providing the immediate relief needed while governmental entities implement long-term solutions.

Johnson Engineering has worked with Lykes for decades on various projects and was eager to help make the Brighton Valley project a reality. Our wide variety of in-house services helped expedite the project design and permitting through the simultaneous coordination of surveying and mapping, GIS, electrical, and surface water management engineering services.





The original conceptual design anticipated Brighton Valley would entail a simple impoundment similar to that used at the Nicodemus Slough project to its south. However, various challenges prompted design modifications to route flows on the site, detain water in the system, and strategically release it as needed.

Our team designed a management system to meet the inflow and outflow rates required by the SFWMD, while minimizing construction costs with features consistent with the original agricultural impoundment-style vision. Developing a robust operational plan for the project, in coordination with Lykes, allowed us to fine tune the components of the system, without adding more complexity to the modeling and design approach.

The operational control strategy developed by our team considered the levels in the canals and impoundment areas as well as pump sequencing scenarios. Given the watershed divide and regulatory limitations on canal stages, this task included estimating water levels necessary for operating the project under different scenarios and creating the framework for operational coordination between Lykes and the SFWMD. These considerations make Brighton Valley one of the most complex dispersed water storage projects to-date and highlight the potential of the program to more adaptively address water supply and storage challenges through use of private lands.

A ribbon cutting ceremony was held in September, when they turned on the pumps for the first time. Johnson Engineering is proud to provide our knowledge and expertise on such an important project which will have a positive impact on the ecosystem downstream.

For more information, contact Andy Tilton, PE at (239) 334-0046 or atilton@ johnsoneng.com.



the project or be stored for release during dry periods

THE CLEAN WATERWAYS ACT - HOW COULD IT AFFECT YOU?

Senate Bill 712 "The Clean Waterways Act" of the 2020 Florida legislative session requires the Florida Department of Environmental Protection (FDEP) to review and make changes to the Environmental Resource Permit (ERP) especially related to water quality. It will also address some changes to the 10-2 rule, the certification of qualification to use a General Permit for a Stormwater Management System serving less than 10 acres total project area and less than two acres impervious surface. With regard to this rule, FDEP has found three basic areas of non-compliance:

- ¬ Wrong permit type applied to the project
- ¬ Area to be permitted is part of a larger development
- ¬ Not enough information to verify adequate water quality treatment

FDEP is considering requiring the supporting data be uploaded and submitted 30 days prior to construction start, rather than within the 30 days prior to construction start. No final decision has been made vet.

There are many possibilities of where the new ERP rule will go. Some of the considerations are as follows:

- ¬ Establishing set credits for low impact development infrastructure
- ¬ Increase the removal requirements
- ¬ Define items such as "net improvement", "significant reduction," etc.

FDEP has used two webinars to introduce the process to include history from 1970s forward. Discussion of presumptive rule based on set best management practices (BMPs) versus requiring monitoring and adjustments if not meeting removal rates. The draft Stormwater Quality Applicant Handbook of 2010 that never got adopted is being reviewed and will most likely have several of its parts included in the new rule. There have been advances since then, so it will not be the only work considered.

FDEP plans on publishing the start of rulemaking in December of this year, having a draft for consideration by third quarter of 2021, and have an adopted rule by 2022 or 2023. They are establishing a technical advisory committee now.

Johnson Engineering will continue to monitor the rule change progress and work with our clients to address them.

For more information, contact Andy Tilton, PE at (239) 334-0046 or atilton@ iohnsoneng.com.

A SPOTLIGHT ON PROJECT MANAGEMENT

Amanda Martin has been a member of the Johnson Engineering team since 2002 and is a Planner II responsible for zoning analysis, preliminary site assessments and the planning and distribution of permitting packages for County, City, State and Federal Agencies. She maintains daily communication with government agencies and has conducted numerous research studies, including an evaluation of potential land usage.

> In January 2020 Amanda began a new endeavor to earn Project Management Certification. Over the course of 25 weeks she studied project budget, schedule, implementation, progress tracking, business communication, and related topics. This hard work resulted in earning a Certificate in Project Management from the University of Phoenix in July 2020.

> Amanda has applied her project management skills by serving as a board member of the Calusa Chapter

Florida Planning and Zoning Association. In collaboration with the members of the FPZA Board, she was involved in organizing and hosting training activities for Certified Planners and Certified Environmental Health Professionals. After obtaining her Project Management Certification, Amanda has begun to assist further in the understanding of project scope and priorities, acted as a point of contact for projects, set goals, encouraged team members to complete tasks on schedule, and conducted quality control to maintain standard expectations.

In an effort to better serve our clients and continue delivering quality project management, Amanda plans to refine her project management skill sets through becoming more involved with internal project management training specific to the consulting and engineering fields.



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(Rendering courtesy of RG Architects.)

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LEHIGH ACRES GETTING A NEW MIDDLE SCHOOL

Students planning to attend Lehigh Acres Middle school in the fall of 2021 will start their school year in a brand-new facility. The campus stretches over 42.5-acres and is being constructed east of Homestead on Sunrise Drive to help alleviate capacity issues for the Lee County School District's East Zone.

In lieu of a large ground breaking ceremony, the Lee County School District and a limited group of team members involved with the project, recently held a topping off ceremony where they were able to sign one of the final support beams needed to complete the central energy building and write well wishes to the students.

As the civil engineer, our team assisted with the overall site design for the complex, which included a stormwater management plan, environmental assessments, utility infrastructure, roadway and parking areas, and permitting. Working closely with RG Architects, Lee County School District staff, construction manager OAK, and the rest of the design team, we are making sure the school is on track to be ready for students next fall.

It's a privilege to be part of this project, knowing the Lee County School District is working to refine and improve the educational amenities to better prepare our children for the future.

For more information, contact Dana Hume, PE at (239) 461-2471 or dhume@johnsoneng.com.

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