

# Outlook

"Your project. Our passion."

## ENGINEERING WATER STORAGE NORTH OF LAKE OKEECHOBEE

*Lykes Bros. Inc. is partnering with the South Florida Water Management District (SFWMD) yet again to store water north of Lake Okeechobee and reduce the amount of pollutant loading.*

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.

Most recently, Lykes partnered with the SFWMD to provide a net, annual, average water quantity benefit of 39,765 acre-feet per year of water on their 8,200-acre Brighton Valley property located northwest of Lake Okeechobee. As water flows south from Lake Istokpoga towards the lake via the C-41A Canal, it will be diverted to the property for dispersed storage as part of the SFWMD's Dispersed Water Management program with private land owners. The shallow wetlands created as part of this project will allow water to naturally infiltrate and reduce the concentrations of nutrients prior to the water being released into the lake via either the C-40 or C-41A canals.



Brighton Valley's agricultural impoundment-style dispersed water storage will create shallow wetlands to allow water to naturally infiltrate and reduce the concentrations of nutrients prior to the water being released into Lake Okeechobee via canals.

Brighton Valley joins Lykes' existing 16,000-acre Nicodemus Slough and 2,500-acre West Waterhole water storage projects. Projects like these deliver a relatively quick and inexpensive solution to our current water crisis, providing the immediate relief needed for governmental entities to implement long-term solutions.

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Nicodemus Slough dispersed water storage.  
Photo courtesy of Linda McCarthy

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Vote YES on Half-Cent Sales Tax Referendum



## PEOPLE & PROJECTS: ON THE MOVE



**Tyler Sharpe, P.E.**

has been named as the Vice President of the Calusa Chapter of the Florida Engineering Society (FES). The FES is a professional organization whose purpose is to advance the public welfare and to promote the professional, educational, social, and economic interests of the engineering profession. Tyler joined the Calusa chapter as treasurer in 2016, became secretary in 2017, and now serves as vice president. He is slated to be the next president of the chapter in 2019.



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 initial survey task laid the groundwork for the rest of the team to model, design, and permit the project, which straddles a watershed divide. Our survey field crews established the boundary line, located right-of-way monumentation, and established a closed level loop around the project for vertical control used during the topographic survey, a total of approximately 15 miles of bench line. Ground elevations were collected to determine alignment and height of berms to be constructed. Additional topographic data and cross-sections were measured in areas of critical concern, including intake pump locations and canal discharge locations.

The elevation data generated by the survey was critical to the design of the project. Since the land is a mixture of upland and wetland land cover, it enabled our surface water engineers to properly size levees, control structures, and an internal pond to place pumps to lift the water flowing from the C-41A Canal to the storage cells. A new electric utility service had to be designed to provide power to the pump station bringing water from the C-41A Canal. The pump station, also designed by Johnson Engineering, is comprised of six 200 horse power pumps. Our team assisted with the engineering component of the Environmental Resource Permit (ERP) and the Right-of-Way Occupancy Permit from the SFWMD. We also assisted the environmental consultant in obtaining approval through the United States Army Corps of Engineers.

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 design team designed a management system to meet the inflow and outflow rates requested 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.

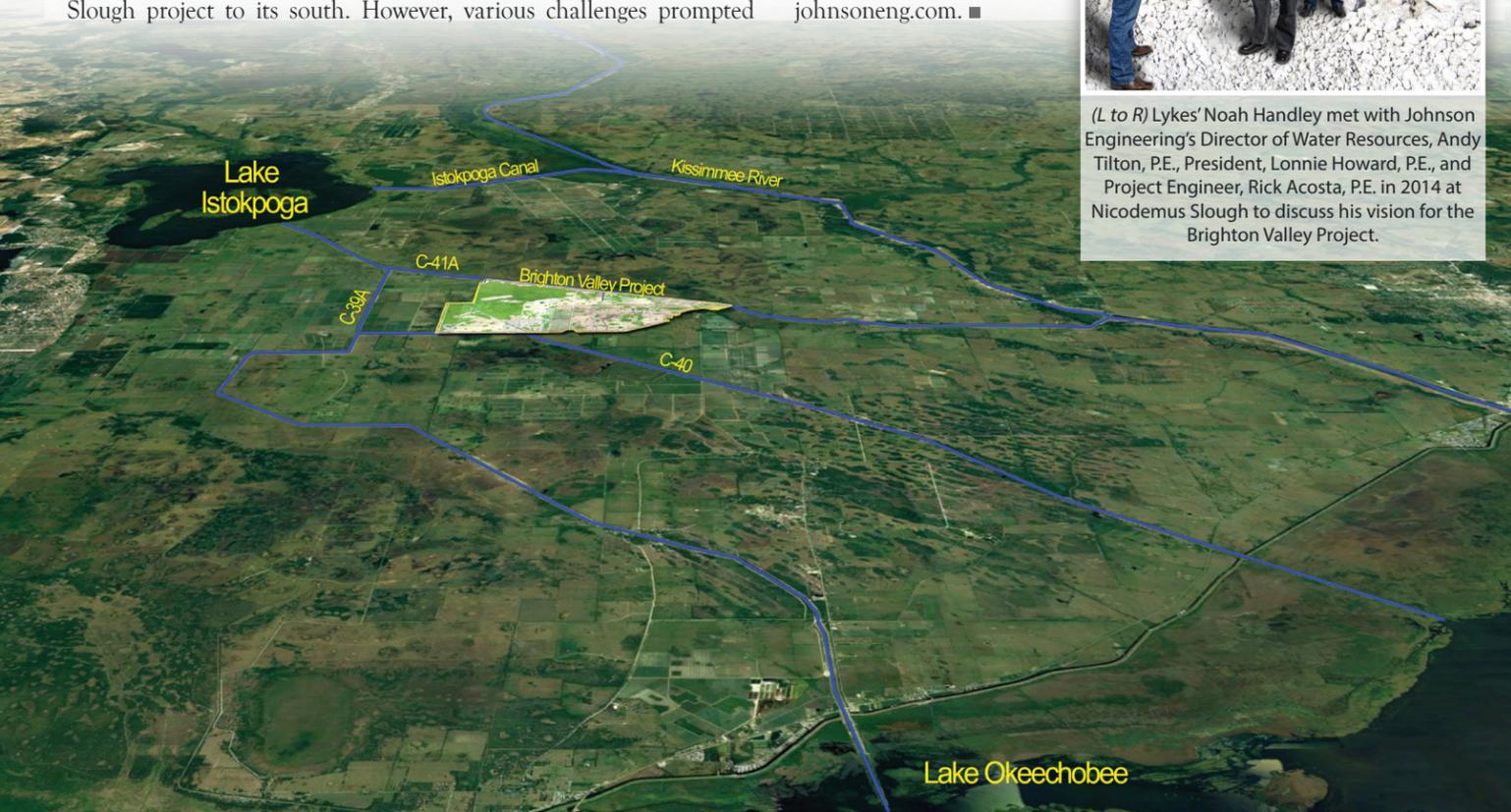
The operational control strategy developed by our team considered the levels in the canals and impoundment areas as well as pump sequencing scenarios. Given the watershed divide and regulatory limitations on canal stages, this task included estimating water levels necessary for operating the project 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.

Breaking ground this October, 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. 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. This project is one piece of the puzzle that will help bring us a step closer in improving the quality of life for our south Florida coastal communities' residents and visitors.

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



(L to R) Lykes' Noah Handley met with Johnson Engineering's Director of Water Resources, Andy Tilton, P.E., President, Lonnie Howard, P.E., and Project Engineer, Rick Acosta, P.E. in 2014 at Nicodemus Slough to discuss his vision for the Brighton Valley Project.



## GOLISANO CHILDREN'S HOSPITAL VOTED 2018 MOST BEAUTIFUL HOSPITAL IN THE NATION

With 250,000 nationwide votes, 68 finalist, and 1 winner; Golisano Children's Hospital of Southwest Florida was voted the 2018 Most Beautiful Hospital in the United States by Soliant's Top 20 Most Beautiful Hospitals contest. Soliant specializes in healthcare staffing services across the United States.

Golisano Children's Hospital of Southwest Florida has set the bar for hospitals across the nation with their clinical performance, family satisfaction, and architectural design. After opening their doors in 2017, the hospital treats more than 25,000 patients per year. The facility is centered around families and making the atmosphere feel safe and inviting for the children who are battling inconceivable illnesses.

We wanted to extend our congratulations to Lee Health and the Golisano Children's Hospital's team on this notable achievement. We are honored to have been a part of the team that designed the groundwork for this remarkable facility which has made such a huge impact on the quality of children's lives. ■



## ECOLOGIST NOW FWC REGISTERED BURROWING OWL AGENT

Johnson Engineering's certified senior ecologist John Curtis received his Burrowing Owl Registered Agent Permit from the Florida Fish and Wildlife Conservation Commission (FWC). Earlier this year, the FWC reclassified the burrowing owl as a threatened species, released new guidelines with expanded permitting and mitigation requirements, and required anyone involved with implementation of burrowing owl incidental take permits to demonstrate qualifications per the guidelines.



As an FWC registered agent, John is authorized to survey, video scope, and excavate inactive burrowing owl burrows. Only registered agents will be allowed to provide these services. For more information on projects with burrowing owl involvement contact John Curtis at (239) 461-2462 or jcurtis@johnsoneng.com. ■

## HELPING COLLIER COUNTY ENVISION THE FUTURE

Collier County staff is working through the re-evaluation of long-term plans and policies for four areas of the County. Commonly referred to as the "restudies," these planning efforts are focused on maintaining and improving the effectiveness of the existing plans with a focus on complementary land uses, economic vitality, mobility and environmental sustainability.

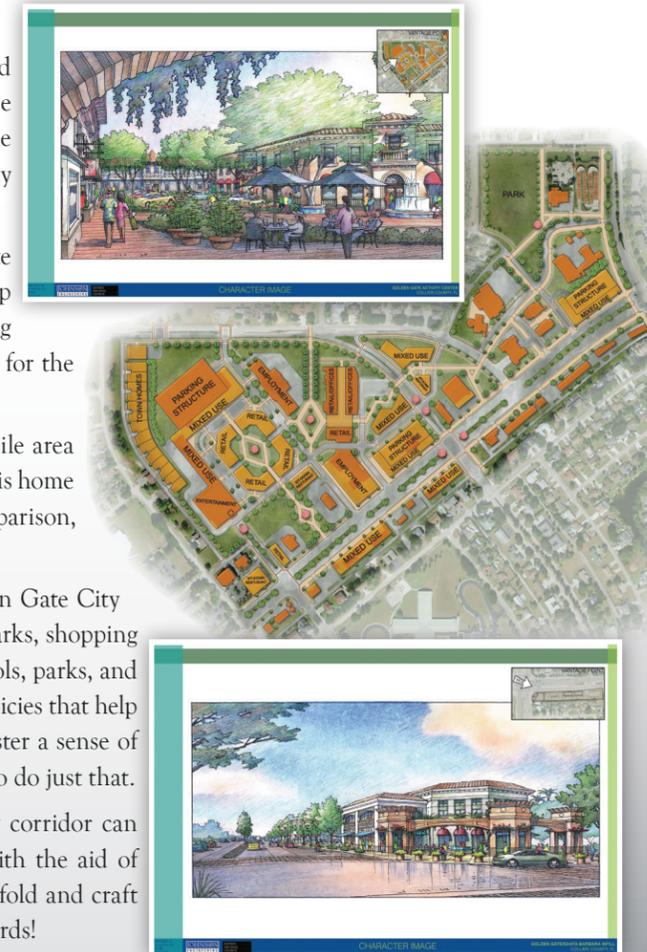
The four areas under review are the Rural Fringe Mixed Use District, Golden Gate Area Master Plan, Immokalee Area Master Plan, and the Rural Land Stewardship Area. As part of the Golden Gate Area Master Plan restudy, the Johnson Engineering planning team is supporting the County staff in the effort to re-imagine the future for the Golden Gate City.

While it's not an incorporated municipality, Golden Gate City is a four-square mile area that is a central hub in the heart of the County's populated region. Golden Gate City is home to 24,000 residents with conveniently located schools, parks, and businesses. By comparison, the City of Naples has a similar permanent population.

The County held public workshops to confirm the community's vision for Golden Gate City as a safe, diverse, family-oriented community that offers easy access to education, parks, shopping and services within a vibrant, walkable community. With most of the housing, schools, parks, and shopping in place, the next step to accomplish this vision is to craft the plans and policies that help improve the pedestrian realm, introduce more housing and business types, and foster a sense of place. Our planning team worked with County staff to craft plans illustrating how to do just that.

Our team's concept plans and perspectives show how the Golden Gate Parkway corridor can transform from its current state to a more walkable, vibrant and viable place. With the aid of images like these, County leaders, staff and the community can see their vision unfold and craft policies and standards to make it a reality. It's true, a picture is worth a thousand words!

For more information, contact Laura DeJohn, AICP at (239) 280-4331 or ldejohn@johnsoneng.com. ■



Architectural Illustrations by Jeffery Michael George

