

A quarterly publication by:



Summer 2018

In This Issue:

I-4 Wildlife

Crossings

Green Meadows WTP Expansion





Alfredo Perez, P.E.

Spotlight on

New Johnson Engineering Board Members





PEOPLE & PROJECTS: ON THE MOVE



Leah Holmes, P.E. in the company's transportation market group, has successfully earned her Professional Engineering license from the Florida Board of Professional Engineers.



Mari Giurastante has joined our Fort Myers planning team. Her experience is in municipal and private planning, as well as working with local non-profits to help bolster grassroots community development.

"Your project. Our passion."

GREEN MEADOWS WATER TREATMENT PLANT EXPANSION/UPGRADE

The new state-of-the-art Lee County Green Meadows Water Treatment Plant (WPT) will go online in August 2018 to provide drinking water for 20,000 Lee County homes and businesses.

In August 2018, Lee County Utilities' (LCU) \$75 million Green Meadows wellfield and water treatment plant (WTP) upgrade and expansion project will come online after nearly a decade of design, permitting and, at times, around-the-clock construction. Johnson Engineering, as a sub-consultant to Jacobs, has worked on this project from start to finish.

Located in eastern Lee County between Southwest Florida International Airport and Alico Road, the Green Meadows wellfield serves approximately 20,000 homes and businesses in Lee County as



Johnson Engineering project manager, Erik Howard, P.E., P.S.M., attending the substantial completion walk through for the drilling contractor and ensuring each wellhead valve was operational. one of LCU's key water supply facilities. Originally built in 1977, the wellfield consisted of a 9 million gallon per day (MGD) lime softening treatment plant, and 27 Water Table and Sandstone aquifer production wells running along a 5-mile-long unpaved access road prior to the expansion. The upgrades turned the 40-year-old WTP into a state-of-the-art facility, converting the treatment process to ion exchange and reverse osmosis, and increasing the plant's finished water production capacity to 14 MGD. The wellfield expansion added a total of eight Upper Floridan aquifer production wells, and a deep injection well system, consisting of a 2,873-foot deep injection well and 1,800-foot deep dual zone monitoring well, to dispose of treatment concentrate.

Johnson Engineering's team of engineers, geologists, surveyors, ecologists, and environmental scientists worked CONTINUED ON PAGE 2

alongside Jacobs and electrical sub-consultant RKS Consulting Engineers to prepare production well and injection well, raw water pipeline, and access road construction plans and specifications; obtain Florida Department of Environmental Protection (FDEP) Underground Injection Control (UIC) and South Florida Water Management District (SFWMD) Environmental Resource (ERP) permits; and provide construction observation services for the wellfield and access road expansion. The design process began with extensive field data collection from the existing system to develop a hydraulic model of 30 wells pumping water from three aquifers, through 40,000 feet of additional parallel pipelines to assess future wellfield operations.

Located adjacent to environmentallysensitive areas, special considerations were given to the permitting, design, and construction of the project to minimize disturbances to the sensitive species of Imperial Marsh. To aid in the design, field survey crews were onsite early in the project, collecting 10,000+ survey points, at times waist-deep in water. The result was an improved 5-mile-long wellfield access road with a total of sixtyseven 36-inch diameter culverts, with 12



Johnson Engineering's project engineer, Erik Howard, P.E., P.S.M., takes the first sip of water produced by the new treatment plant.

culverts alone at Imperial Marsh to help maintain sheetflow, while also allowing LCU staff to inspect and maintain distant production wells.

During construction, our team worked closely with Mikes Maillakakis, P.E., the LCU Project Manager, to help coordinate up to six contractors working concurrently. Field engineers and



The Green Meadows project represents a cornerstone for Alfredo Perez's, P.E., professional career. As an instrument technician, Alfredo waded in waist-deep water collecting survey data points for what would become the expanded WTP, wellfield, and improved wellfield access road. Alfredo was then the primary CAD technician preparing the design plans while also pursuing a Civil Engineering degree at Florida Gulf Coast University. As a newly-minted Engineering Intern postgraduation, he performed engineering inspection services during construction. Alfredo has since become a Professional Engineer licensed in the State of Florida and is currently finalizing the wellfield record drawings. These drawings will

geologists were onsite continuously during construction of six Upper Floridan aquifer production wells, and the FDEP Class I deep injection well system, which entailed a 24/7 construction schedule. All six Upper Floridan aquifer wells were productive, including one well that free-flows at 2,000 gpm. Due to the sensitive nature of the project site, Johnson Engineering biologists provided special training to contractors on identification and protection of state and federallylisted Eastern indigo snake.

The end result increases the capacity and reliability of the Green Meadows system, while improving access for LCU staff with minimal impacts to the surrounding preserve lands.

For more information, contact Erik Howard, P.E., P.S.M. at 239.334.0046 or ehoward@ johnsoneng.com.



Reverse osmosis cartridge pre-filters remove salt and hardness from the water.



Johnson Engineering environmental scientist sampling production well for primary and secondary drinking water quality parameters.

CREATING SAFE WILDLIFE CORRIDORS UNDERNEATH I-4

Johnson Engineering has a long history with FDOT District One, and one of our latest projects is using remote cameras to determine optimal bridge design for use by large mammals. Johnson Engineering wildlife biologist, Dr. Jennifer "Jen" Korn, brings her years of experience working with the endangered Florida panther and remote camera trapping, to take the lead on the project. Jen is placing cameras under bridges and wildlife crossings from I-4 to Alligator Alley to monitor for use by Florida panther, Florida black bear, white-tailed deer, and other species that cover large distances and rely on wildlife corridors. While 60 wildlife crossings exist in Florida, new crossings can be costly and difficult to engineer around private lands. A more cost-effective alternative is to retrofit existing bridges. One bridge where this might be possible is on I-4 at Reedy Creek, less than five miles from the bustling attractions of Orlando.

The Florida Wildlife Corridor organization is a group that brings awareness to the need to connect and preserve the Florida Wildlife Corridor - a statewide network of lands and waters that supports wildlife and people. The Florida Wildlife Corridor Expedition team, Carlton Ward, Jr., Mallory Lykes Dimmit, and Joe Guthrie took on the Heartland to Headwaters: Corridor at the Crossroads trek to highlight the diminishing connection between the Green Swamp north of I-4 to the Everglades Headwaters to the south.

On a hot and sunny afternoon in April 2018, Jen met the team and the film crew from Grizzly Creek Films, alongside busy I-4. Under the bridge, the temperature dropped a few degrees, but the din of the cars above was amplified. Expedition team members arrived by canoe from Reedy Creek and remarked that just a few hundred feet from arriving it felt like a different world. They all crowded around Jen's laptop screen to see what had passed by the cameras. Many of the usual suspects like raccoon and otter appeared, but then excitingly, a bobcat appeared on screen. Even though bobcats are smaller in size and area traveled, if they will use a crossing, there is the potential that a panther or bear could too.

The Reedy Creek bridge was built simply to allow Reedy Creek to flow under I-4, however it was not built with wildlife in mind. Brent Setchell, with FDOT District One, has visions for many of the bridges in his District and across Florida. Inexpensive options exist to retrofit bridges to be more wildlife-friendly. A notable example is the bridge over the C-1 Canal on SR 80, east of LaBelle. In 2014, FDOT added ledges on both sides, and fencing for approximately 1 km along the highway. Jen has monitored that bridge with cameras since construction was Panthers are regularly recorded on wildlife cameras completed, and she regularly records panther use. Would similar changes at places like Reedy using the C-1 Canal wildlife crossing near LaBelle. Creek finally entice a panther or a bear to cross there? While there are not many panthers north of the Caloosahatchee River, occasionally males do get as far as I-4, and a few have crossed. Two male panthers have come close, yet sadly met their demise trying to cross I-4, less than a quarter mile from the Reedy Creek bridge.

This collaborative effort between FDOT and Johnson Engineering will continue to assess bridges and crossings for potential future retrofitting, which will aid in creating or maintaining crucial corridors for Florida wildlife like panthers and bears. Safe wildlife crossings also increase public safety by reducing vehicle impacts with wildlife.

For more information, contact Jen Korn at 817.829.0453 or jkorn@johnsoneng.com.





The Florida Wildlife Corridor Expedition team, (R to L) Carlton Ward, Jr., Mallory Lykes Dimmit, and Joe Guthrie gather around Johnson Engineering's Dr. Jennifer Korn's laptop to see what had appeared on the wildlife camera. [Photo credit: Carlton Ward, Jr.]



A bobcat was captured on the wildlife camera crossing under I-4 at Reedy Creek.



The Florida Wildlife Corridor Expedition team paddles Reedy Creek beneath I-4. [Photo by Alexandra Morrison]



Prsrt Std US Postage **PAID** Ft. Myers, FL Permit #215



Corporate Headquarters 2122 Johnson Street Fort Myers, FL 33901

2350 Stanford Court Naples, FL 34112

18501 Murdock Circle, Suite 404 201 S. Berner Road, #3

17900 Hunting Bow Circle Suite 101, Lutz, FL 33558

Port Charlotte, FL 33948

251 W. Hickpochee Avenue LaBelle, FL 33935

Clewiston, FL 33440

1031 Ives Dairy Road, Suite 239 Miami, FL 33179

Comments, questions or to receive future newsletters electronically, e-mail mkt@johnsoneng.com. © 2009 by Johnson Engineering, Inc. All rights reserved. No materials or photographs in this publication may be reproduced without written permission from Johnson Engineering.

1.866.367.4400 | www.johnsonengineering.com Engineers | Surveyors | Planners | Ecologists | Landscape Architects | Geologists | Scientists



TERM ROTATION BRINGS ON NEW JOHNSON ENGINEERING BOARD MEMBERS

At the most recent company stockholders meeting, Kim Arnold, P.G. and Matt Howard, P.S.M. were elected to the company's Board of Directors to each serve three-year terms.

In 2011, Johnson Engineering adopted a policy to have staggered terms for the board of directors, rotating members on and off in two and three-year terms, in order to maintain an effective Board over the lifetime of the company. This system helps maintain a healthy duality of experience and brings fresh ideas.

Kim and Matt will replace Andrew Tilton, P.E. and ecologist Laura Herrero who completed their three-year terms and rotated off the board. They will be joining the existing board members President Lonnie Howard, P.E.; Chairman of the Board, Kevin Winter, P.E.; Vice President Engineering Michael Dickey, P.E.; Vice President Engineering & Secretary/Treasurer, Dana Hume, P.E.; and Director, Ryan Bell, P.E., PTOE.

Kim Arnold, P.G., has been a hydrogeologist in our water resources group since 2005. She has 16 years of experience performing hydrogeologic investigations, data analysis, modeling, water supply planning, and permitting. She has been a shareholder since 2013.

Matt Howard, P.S.M. is the director of the firm's surveying & mapping group and oversees all surveying efforts for the company. He has more than four decades of experience in the field of surveying. He joined Johnson Engineering in 2000 and became a shareholder in 2005.

For more information contact mkt@johnsoneng.com.

2018 Additions to the Johnson Engineering Board of Directors



Lonnie V. Kevi Howard, P.E. Winte



Michael S.

Dickey, P.E.

Kevin M. Winter, P.E.



Dana L. Hume, P.E.



Ryan K. Bell, P.E.



Kim Arnold, P.G.



Matt Howard, P.S.M.