Outlook

"Your project. Our passion."

A quarterly publication by:

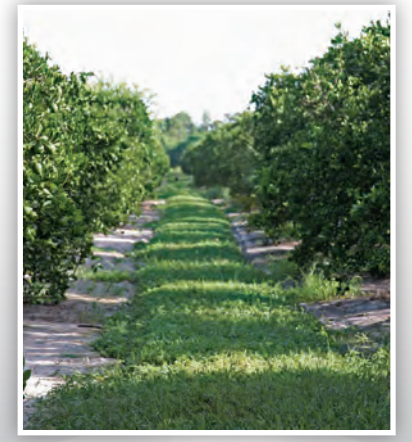
JOHNSON ENGINEERING

Fall 2015

HELMS ROAD EXTENSION - THE NEW ROAD THROUGH A GROVE

Not all impressive projects are reserved for private developers or large municipalities. The Helms Road Extension project, breaking ground this fall in Hendry County, is a prime example of how cooperation and innovation can bring big improvements to a small community.

LaBelle is a small city on the west side of Hendry County. Since its primary east-west corridor State Road 80, known locally as Hickpochee Avenue, also serves as the primary route between neighboring Lee and Palm Beach Counties, an alternate east-west corridor is needed. A new roadway with an ultimate four-lane urban section, this initial segment from S.R. 80 to S.R. 29 is a critical step in addressing the County's long range transportation needs. For a relatively small rural economy, a roadway of this size is a significant and daunting task.



Extending Helms Road from S.R. 80 to S.R. 29 required close coordination with active citrus groves.

The project however, got off to a rocky start. Initially planned to be constructed by a private developer as part of a large planned development, the improvements were put on hold during the economic downturn. Realizing the importance of the roadway, Hendry County picked up the ball and ran with it.

In cooperation with the City of LaBelle and the Paul family, who owned much of the underlying property needed, a majority of the right-of-way was acquired. Several additional parcels were needed and, in fact, all parcels were acquired without any condemnation. In this day and age, acquiring all of the right-of-way necessary for nearly three miles of new roadway and the associated ponds, with no condemnations, is an impressive feat that speaks to the inherent public-private partnership that has driven this project.

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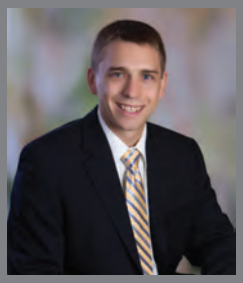
PEOPLE & PROJECTS: *ON THE MOVE*



Jordan Varble, E.I. joined our Water Resources team. He earned his Masters degree in Civil Engineering and was a Water Resources Engineer in the Peace Corps in Panama.

Wyatt Stutts joined our team as a hydrogeologist after receiving his Masters. Capitalizing on his six years experience, he will be working on the Green Meadows wellfield expansion project in Lee County.

Atef Hanna, P.E. joined our team to manage utility and land development projects in our Land O'Lakes office. He brings 30 years of experience in working for municipal governments and engineering consultants.

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The public-private partnership on this project also extended to the State level. Hendry County is a rural county with a relatively small operating budget. This project is funded primarily through grant funding from the State. Coordinating with the Florida Department of Transportation over the course of several years, Hendry County was able to secure enough funding to cover the design, CEI, and construction of the initial phases with minimal funding required of the County. This cooperation with the State has allowed the project to move forward without sacrificing the County's other valuable services. At a time when costs are quickly rising, the construction bids were recently opened at a cost below the construction estimate and well within the budget.

This project also had several innovative and environmental friendly approaches in its design that you don't typically expect on a tight budget. The water management system is one such example. The north side of the roadway alignment ran adjacent to an old canal corridor that, given subsequent offsite drainage improvements downstream, had been rendered obsolete. Unmaintained and overgrown with exotic vegetation, the old canal corridor is now being repurposed to serve the environment. In the design, Johnson Engineering was able to utilize this corridor and design a series of linear ponds to provide the necessary water quality and quantity treatment. Designed in cascading fashion, these ponds will maximize the phosphorus and nitrogen removal potential, thus reducing the pollutant loading to the Caloosahatchee River, which is currently classified as impaired for nutrients. In addition to improving water quality, this water management design also avoided the need to obtain additional property for more offsite treatment ponds, again minimizing the overall environmental impacts and significantly reducing the cost of construction.

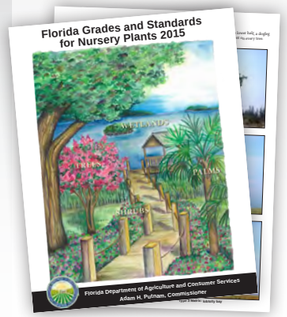
Roadway Design Project Manager, Ryan Bell, P.E., PTOE, inspecting existing drainage conditions along the corridor.

Another considerable cost savings was realized in the construction cost. This project included a significant amount of earthwork resulting in a large quantity, over 200,000 cubic yards, of surplus fill. With a need for a future fill source, the County was able to arrange a plan for stockpiling the material on nearby County owned land. In addition to providing a valuable resource, this resulted in very favorable earthwork costs in the construction bids by eliminating the contractors burden of offsite haul to a disposal site.

As Hendry County's Project Manager, Public Works Director Shane Parker's contributions over the life of the project have not gone unnoticed. Shane was recently named the 2015 Rural County Engineer of the Year by the Florida Association of County Engineers and Roadway Superintendents (FACERS). Shane's efforts are indicative of the total team effort needed to push this project forward. Through close and continued cooperation between Hendry County, the City of LaBelle, the Florida Department of Transportation, the Paul family, and a little bit of help from Johnson Engineering, a big project in a small town is almost there. By working together and working smarter the "road through the orange grove" will soon bear fruit. ■

FLORIDA GRADES & STANDARDS FOR NURSERY PLANTS

At this year's Florida Chapter of the American Society of Landscape Architects (FLASLA) annual conference in Orlando, one issue in particular created quite the buzz. After 17 years, The Florida Grades and Standards for Nursery Plants, or simply "Grades and Standards," has been updated by the Florida Department of Agriculture and Consumer Services. The update went into effect on September 1, 2015.



For any project subject to permitting, most localities require that landscaping must meet minimum grading standards. After installation, some localities require that the plantings are inspected and certified by a landscape architect. The update to the Grades and Standards eases the specification of plants and simplifies the certification process. There is now more flexibility for a greater variety of tree characteristics to qualify for grading. The steps for grading trees have also been reduced from ten to seven. In the past, curved palms would not meet the grades and standards because the trunk is not straight. Landscape architects can now specify a curved trunk palm, and it can pass the grading because research has shown that curvature in the trunk of a palm has no negative bearing on its strength or health.

Allowing some leniency in the specification and grading of landscape material will result in more flexibility to use plant materials that were previously considered below Number 1 grade. This will also result in more visually interesting landscapes.

To view the full publication of the Florida Grades and Standards for Nursery Plants visit our website at www.johnsonengineering.com/blog/florida-grades-and-standards-for-nursery-plants-2015. ■

JOHNSON ENGINEERING RANKS 315 IN GULF COAST 500

Johnson Engineering has been recognized as #315 in the Business Observer's 2015 Gulf Coast 500 rankings. We also ranked 4th of the 11 Architecture/Engineering/Planning firms who made the list.

The 2015 Gulf Coast 500 features an annual review and ranking by revenue of the top 500 companies located throughout the Gulf Coast of Florida, from Polk to Collier County. The magazine also includes the top 500 companies listed by industry, the fastest-growing companies, and largest employers.

We have achieved this recognition for the past four consecutive years due to our steady performance, profitability, and growth. ■

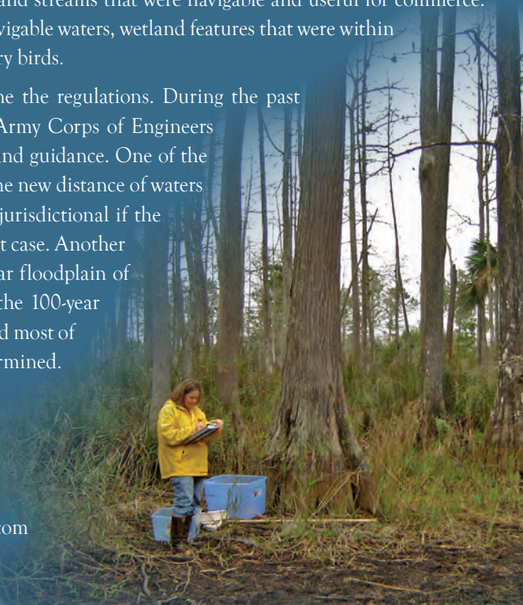
WATERS OF THE UNITED STATES

Is the property you own an upland or a wetland? If it is a wetland, is it regulated? These may seem like simple questions to answer. The fewer types of land covers there are, it seems the more challenging the categorization is in the field. With only two major types, a lot of work must go into defining the natural features that are wetlands and then complicate the division further for those regulated by the federal government and those that are not. During the early days of regulation, the federal definition included lakes and streams that were navigable and useful for commerce. Additions were made over time to include wetland features that directly connected to navigable waters, wetland features that were within a short distance of the regulated waterway, and wetlands that might be used by migratory birds.

There have been several court cases which have provided guidance to further define the regulations. During the past couple of years, the Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE) have worked on a document intending to clarify some of the previous rules and guidance. One of the clarifications, which may have far reaching changes to jurisdiction in South Florida, is the new distance of waters (wetlands) within 4,000 feet of Interstate Commerce Waters. This may be considered jurisdictional if the water has a "significant nexus" as compared to the previous 300 feet referenced in a court case. Another broadening of the possible jurisdictional area is to include all waters within the 100-year floodplain of an Interstate Commerce Water. As an example, much of northeast Lee County is in the 100-year floodplain, as is most of Collier County with the FEMA AH flood zone classification, and most of Hendry County, which is in a FEMA Zone A. There are many more details yet to be determined.

The new regulations became effective 60 days after it was published on June 29, 2015 in the Federal Register. While it could be said the regulations are in effect in late August 2015, lawsuits to stop, overturn, or redo the new rule have already been filed. One more time, we will wait and see the final result.

For more information, contact Andy Tilton, P.E., at 863.612.4055, adt@johnsoneng.com or Laura Brady Herrero at 239.461.2457, lbh@johnsoneng.com. ■



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SUSTAINABLE FORESTRY INITIATIVE PEFC

MACROINVERTEBRATES OF CANALS, STREAMS, AND WETLANDS OF SOUTHWEST FLORIDA

Aquatic macroinvertebrates are a diverse group of organisms that form important trophic linkages to higher level consumers like fish, amphibians, reptiles, birds, and small mammals, including many listed species. In a typical Florida wetland you may find several classes of aquatic animals including bivalves, crustaceans, insects, gastropods, worms, and even sponges. Aquatic invertebrates have a long history as indicators of stream condition and water quality.

More recently, they have been used as performance measures for restoration success in Everglades restoration projects because of their sensitivity to changes in hydrology habitat quality. Several indicator species have been identified for assessing hydrologic restoration in the 55,000-acre Picayune Strand Restoration Project (PSRP) in Collier County and at Babcock Ranch in Lee and Charlotte Counties.

A rapid field assessment technique was specifically developed for evaluating wetland condition and for tracking restoration success in response to management actions that restore hydroperiods and native plant communities. This method was accepted by the Project Delivery Team (PDT) for PSRP in 2005 and has proven to be cost-effective, simple, and a repeatable method when conducted by qualified and trained ecologists. The method is based on comparison of the aquatic communities from impacted wetland sites with one or several reference site communities in relatively unimpacted habitats nearby. Bray-Curtis similarity and multivariate statistical analyses are used to compare community structure for significant differences and relative distances between sites. We can also identify individual species that may serve as indicators of recovery or disturbance. Over the past dozen years, these same methods have been successfully used for large-scale impact assessments in the Estero Bay Watershed, Fakahatchee Strand, Picayune Strand and at Babcock Ranch.

A green darner dragonfly, Anax junius emerges from its pupal exuvia after the aquatic nymph crawled out of the water to complete its life cycle as an adult. This large species of dragonfly lived under water for 10-12 months in South Florida preying on mosquito larvae, mayflies, and other aquatic life including tadpoles and small fishes. The green darner is an excellent indicator for assessing restoration success in Picayune Strand and Babcock Ranch.

This past April, Johnson Engineering's Certified Senior Ecologist, David W. Ceilley presented his research on this topic at the prestigious Greater Everglades Ecosystem Restoration Conference in Coral Springs, Florida. For more information, contact David W. Ceilley, at 239.461.3395 or dwc@johnsoneng.com ■