

Outlook

"Your project. Our passion."

A quarterly publication by:



Winter 2021/22

In This Issue:

PLANT ELECTRICAL SYSTEMS EXTREME MAKEOVER

Modernization without downtime

When you think of drinking water, you probably take it for granted that your tap never runs dry of clean refreshing water to drink as well as to irrigate your lawn, and you probably don't think about the challenges faced by aging and obsolete electrical equipment at water treatment plants that is essential to keep the plant running smoothly.

All too often, electrical power and control systems that originally were robust, slowly age over time and don't always keep up with plant improvements while requiring ever more maintenance, equipment replacement, and potential costly downtime.



A new electrical room was created for most of the electrical equipment for the City of Naples Water Treatment Plant, which provides an efficient and environmentally controlled environment to improve operation and longevity. An extensive raceway system is used to route conductors.

It's one thing to be inconvenienced by a power disruption or electrical equipment failure in your home, but another thing entirely when such an event occurs within any of the critical infrastructure of your community, which could endanger your drinking water quality and availability and even deprive water to fire departments to fight fires.

This is why water treatment plant staff and municipal authorities closely monitor the condition of all the electrical and standby power systems in their plants, to ensure uninterrupted continuous operation 24/7/365, even in the event of loss of utility power to the plant. In addition, plant staff are always trying to gain greater efficiency and

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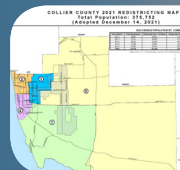
City of Naples WTP Extreme Makeover



Geologists Help Protect Water Resources



Collier County Redistricting



Our Port Charlotte Office Has Moved



PEOPLE & PROJECTS: ON THE MOVE



Zachary Merana, PE
has joined our Electrical team as an Electrical Engineer. Zack has his Master of Engineering degree in Power Systems Engineering from Worcester Polytechnic Institute in Massachusetts.



Chris Zimmerly
has joined our Water Resources team as an Environmental Scientist. Chris will assist our team with water use permits, dewatering plans, environmental resource permits, and Phase I ESAs.



Joe DeBono, PE
in the company's Transportation group, has successfully earned his Professional Engineering license from the Florida Board of Professional Engineers.

MCCS



Some of the existing and new Motor Control Centers (MCCs) are designed to provide power to pumps and other equipment. The new equipment is much easier to operate and service.

INSTALLATION



The photo above shows some of the space that was made available by relocating most of the electrical and associated equipment.

SWITCHGEAR



The new switchgear is designed to accept the plant electrical service from both the utility and the generators. The new equipment is much easier to operate and service.

productivity with limited resources by leveraging new technology and equipment that include surge protection and greater capabilities. But when the time comes for an extreme makeover of the power and control systems, can this be accomplished with limited and out-of-date record documentation as well as the necessity to continue to operate the plant without interruption? The good news is YES!

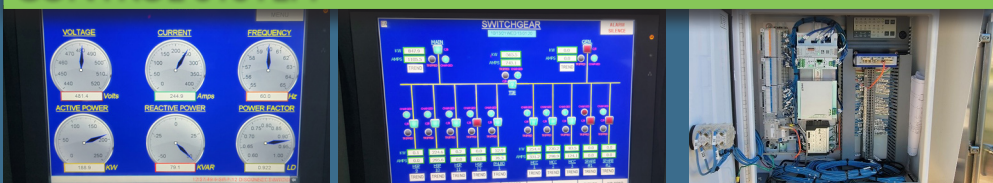
A recent example of such a project was the extensive modernization of the electrical power and control systems at the City of Naples Water Treatment Plant located inconspicuously just across the street from the Coastland Center Mall in Naples Florida, which provides all of the potable water for the city. With some electrical equipment dating back as far as the 1950s, plant staff recognized the pressing need for replacement of the existing electrical systems due to the deteriorating condition of the equipment. The major types of equipment to be replaced were switchgear, motor control centers (MCCs), control panels, distribution panelboards, transformers, wiring, and raceways. There were several primary project objectives that were identified for this upgrade:

- 1 Replace two large existing generators with a new set of modern generators that could all work collectively to provide standby backup power to the plant in case of loss of utility power. The new generators were designed to utilize integral fuel tanks that allowed for a much more robust and straightforward standby power arrangement as well as the elimination of old environmentally increasingly troublesome diesel lines and diesel tanks within the plant.
- 2 Replace the existing major electrical and control equipment that was currently located throughout the plant floor in various locations and instead create a modern dedicated temperature-controlled electrical room to house most of the new major electrical and control equipment. This not only provided a much better working environment for the electrical equipment, but freed up valuable floor and wall space in the plant which could be used for other purposes as well as eliminate some obsolete equipment and associated components.
- 3 Replace several electrical distribution panelboards that were obsolete and lacked expansion capability.
- 4 Provide the related programming and startup services to optimize and better integrate the equipment design with the intended equipment functionality while each piece of equipment was gradually replaced. Upgrade the power quality and motor control equipment to yield much more data and greatly improve the ability of plant operators to monitor and control the various systems involved in the water treatment processes for the plant.

Despite the many construction and schedule challenges entailed by an extreme makeover of the water treatment plant electrical systems, all work was completed without any interruption of service to the city.

If your plant also needs an extreme makeover, we can help! For more information, contact Wayne Wright, PE at (239) 461-2446 or www.johnsoneng.com. ■

CONTROL SYSTEM



A new control system was installed which greatly increased the ability to monitor and control the plant processes.

GEOLOGISTS HELPING TO PROTECT OUR WATER RESOURCES

Johnson Engineering's Professional Geologist, Kim Arnold, spent time at the Capitol in Tallahassee meeting with lawmakers about how geologists help protect water resources, manage minerals of economic importance, remediate contamination, and other issues vital to Florida.

A delegation from the Florida Association of Professional Geologists (FAPG) met with several House and Senate members in early November as part of the organization's annual Lobby Day.



FAPG members meet with Rep. Dan Daley, who says, "Rock on!"

In addition to sharing interesting rock and fossil specimens from the Florida Geological Survey, they discussed proposed legislation on several environmental and regulatory issues.

The group offered their specialized knowledge as a resource for lawmakers to better inform their constituents on the science behind headlines like the Piney Point incident and Surfside building collapse. FAPG hopes an enhanced collaboration between geologists and lawmakers will help shape effective, streamlined that will benefit all Floridians.

For more information, contact Kim Arnold, PG at (239) 461-3329 or karnold@johnsoneng.com. ■



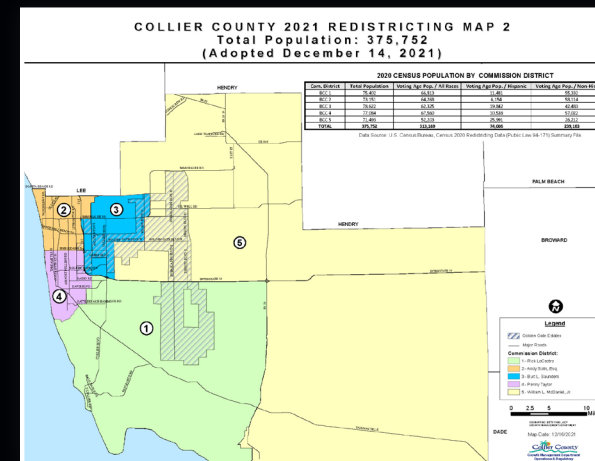
FAPG members with specimens from Florida Geological Survey at Sen. Jason Brodeur's office.

COLLIER COUNTY REDISTRICTING

What occurs once every ten years, only in an "odd-numbered" year, and affects each and every one of us? Redistricting! Redistricting is the process of reshaping the geographic areas of our communities served by representatives in Congress, the State Legislature, County Commission, and School Board to reflect the latest population data of the United States Census.

After completing the decennial census, the United States Census Bureau delivered 2020 Redistricting data for Florida and its counties in August 2021. Census data for Collier County revealed population growth from 321,520 people in April 2010 to 375,752 people in April 2020. This information is typically released several months earlier, but was delayed due to challenges including the pandemic. This forced an expedited process by government entities to complete the necessary re-drawing of commission district boundaries to balance population of districts for elected officials. Johnson Engineering's planners assisted Collier County with the redistricting effort to ensure a robust public outreach program. The program emphasized engaging and informing citizens about the process and the alternative redistricting maps.

Johnson Engineering Planner, Amanda Martin, led public outreach efforts by preparing a Public Outreach Plan. The plan outlines statutory requirements along with additional strategies to provide information and notice to the public about the redistricting process. Amanda assisted Collier County with meeting arrangements, presentation material, handouts, and documentation of ten meetings with civic groups and municipalities, including the Collier County NAACP, Immokalee Chamber of Commerce and Everglades City. Additionally,



we assisted Collier County with hosting evening public meetings in each of the five districts of the County to facilitate public involvement and gather comments on five alternative redistricting maps. To reach all citizens, remote participation was available through Facebook Live; translators attended the public meetings; and notices in the newspaper and handouts were provided in English, Spanish and Haitian Creole. These efforts resulted in a decision by the Board of County Commissioners on December 14, 2021 to adopt the new district map that they found best provides for equitable, compact, and regularly shaped districts for ten more years of election cycles to come.

For more information, contact Amanda Martin at (239) 461-2487 or amartin@johnsoneng.com. ■



The redistricting team members:
Tom Eastman - Collier County School District, Amanda Martin - Johnson Engineering, Inc., David Weeks - Nova Engineering & Environmental, LLC.

Outlook

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Office Locations

Corporate Headquarters
2122 Johnson Street
Fort Myers, FL 33901

2350 Stanford Court
Naples, FL 34112

17833 Murdock Circle
Port Charlotte, FL 33948

251 W. Hickpochee Avenue
LaBelle, FL 33935

17900 Hunting Bow Circle
Suite 101, Lutz, FL 33558

201 S. Berner Road, #3
Clewiston, FL 33440

Comments, questions or to receive future newsletters electronically, e-mail mkt@johnsoneng.com.
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Engineers | Surveyors | Planners | Ecologists | Landscape Architects | Geologists | Scientists



IT'S OFFICIAL. OUR **PORT CHARLOTTE** OFFICE HAS MOVED!

We are excited to announce that our Port Charlotte office has moved to 17833 Murdock Circle, Port Charlotte, FL 33948. We will bring in 2022 from this new location! Our Port Charlotte team is no stranger to this area. We've been located off Murdock Circle for 30 years and will celebrate this anniversary milestone in April of 2022 with an open house. This new office location will positively impact our clients by helping reduce operating expenses, since we will now own the building. We have established strong and trusted relationships in this area and look forward to continuing to serve our clients.



For more information contact Chris Beers, PE, PSM, at (941) 625-9919 or cbeers@johnsoneng.com. ■

