

Florida Specifier

since 1979

The Next Full Moons

October's Full Moon reaches peak illumination at 4:55 p.m. EST on Sunday, Oct. 9, 2022. It's known as the Hunter's Moon.

November's Full Moon reaches peak illumination at 6:02 a.m. EST on Tuesday, Nov. 8, 2022. It's known as the Beaver Moon.

Practical Information For Environmental Professionals

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Have a story idea or lead?

Have an idea for a story? Would you like to submit a column for consideration? Please, let us know. And remember to fill us in on your organization's new people, programs, new offices, projects or technologies — anything of interest to environmental professionals working in Florida.

Send to Florida Specifier, 2901 1st Ave. N., Suite 202, St. Petersburg, FL 33713.

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 CHANGE SERVICE REQUESTED

Wastewater no waste of time

Autistic artist finds passion, inspiration from industry

By MALLORY CHAPUT
Contributing Writer

My friend, fiancé, and I were wandering the streets one warm and humid Florida night under the soft glow of the moon. My friend, such as myself, has autism and one of her special interests is the coyote, a misunderstood animal. I came from a very rural area and never really spent much time exploring cities in my younger years.

Exploring our small Florida city was a mesmerizing experience for me, looking at all the glowing orange lights and walking through an industrial park was captivating. My friend, being from New York City, missed walking the streets at night and she was thankful that we could accompany her, since she is in her 50s and struggles with some health issues. For me, it was a fleeting new experience and I fell in love with it. I love the peacefulness at night when the world is quiet and in a dream state. One night, when scouting for coyotes, we walked on our usual sidewalk past some tree lines, crossing



Image courtesy of Mallory Chaput

Above is Mallory Chaput's first water treatment art. Mallory has autism and a strong desire to be a wastewater treatment operator. She seeks input from professionals about the industry and can be reached via LinkedIn or email at mgchaput@gmail.com.

several streets, and going a bit further to an area that had a large patch of woods.

My friend wanted to stop and sit down on the sidewalk to listen for coyote howls, but there was a loud noise behind us. I looked over at it and saw a bunch of strange buildings. I assumed it was a manufacturing plant, but it stuck with me.

I went to google maps to find places to go on our night-

ly outings. When I zoomed in on the area where we were, I saw it, the "manufacturing plant" and I was perplexed. I looked at the tanks from the satellite view and it just dawned on me that these were sewage treatment tanks, which I never really paid any attention to or seen before. It reminded me of a large version of the bog filters for my koi pond and I immediately

was fascinated.

I planned a trek for us in a park just behind the plant. When we went to this fountain park, I was greatly captivated by the buildings and tanks that seemed to wrap around us. There was a mysterious floral smell coming from this plant, it smelled like vanilla and laundry detergent; this ignited my curiosity.

To STUDENT Page 2

Bounty Hunters take aim at Burmese pythons

By BLANCHE HARDY, PG

Pythons are an invasive, non-native species that have become established and are spreading throughout South Florida. While non-threatening to humans, they are apex predators with insatiable appetites and pose direct threats to native wildlife.

Every year Florida Fish and Wildlife Conservation Commission (FWC), the South Florida Water Management District, and participating partners conduct a round up to remove snakes from the Everglades. FWC lists five species of Pythons, Boa Constrictors, and four species of Anaconda to be hunted and removed during the state's annual event.

Pythons represent a significant impact to native prey, including marsh rabbits, deer, wading birds, and even alligators. Their aggressive consumption of native wildlife deprives Florida's native predators, such as panthers, raptors, bobcats, and alligators of primary food sources.

Pythons are semi-aquatic creatures;

first spotted in 1979, they thrive in Florida's Everglades. FWC identifies them as having assumed a top position in the food chain. Although they grow to great lengths, they are challenging to locate in such a wet environment.

These snakes were likely introduced into Florida's native environment by accident or by intentional release by pet owners no longer interested in caring for them.

They are prolific breeders; a female

python can lay roughly 100 eggs per year.

This year's annual Florida Python Challenge, commonly called the Python Bowl, was held Aug. 5-14. The challenge garners national attention and is an opportunity to share information about the damage pythons cause, encourage the public to continually remove these invasive snakes, and highlight the importance of responsible pet ownership so non-native species are not released into the wild.

To PYTHONS Page 16



Photo courtesy of The South Florida Water Management District

The South Florida Water Management District is taking action to eliminate invasive pythons by accepting applications for new python removal agents.

From STUDENT Page 1

My reasoning

I have a deep love for the environment and always have had a concern about what happens to our water. I also have been into fish keeping for many years, so I was familiar with water testing and parameters. My art from the past was water themed as well so I put two and two together. I love wastewater plants because they protect us, and the environment; and I greatly appreciate all the people behind the scenes that make it happen.

I also appreciate the potable water workers who give us life, they are heroes that need to be recognized. I wanted to put my God given talent of art to good use, so I decided to paint a clarifier and the results were pleasing.

My mind spurs up lots of ideas, but the time it takes to put them into action takes years. Thus, I have signed up for this commitment for life. I am working on writing and illustrating a children's book to educate the world about this essential service. I have been working on coloring pages for adults and children and making them free public resources to help spread awareness.

Coping with my struggles

I have autism and with that comes depression and crippling anxiety, much of it being social anxiety. These are official diagnoses by doctors. I had a strong desire to be a wastewater treatment operator, but unfortunately my anxiety flares up and prevents me from being consistent. I am also partially blind so I cannot drive due to my vision limitations. That makes it hard to work a regular job. Anxiety affects my physical health as well, causing me to functionally struggle some days. This doesn't allow me to do shift work, so project-based work is the best for me.

I have found other members in my family also suffer from anxiety and cannot work, which has helped me to accept my circumstances. I work as a landscaper and do other odd jobs to bring in some income and reserve enough energy for my water treatment art mission. My partner, Cole, also helps me. He works as a potable water treatment operator for Port Orange, Florida.

I am hyper focused on this project and it's all I think about day in and day out. I am greatly appreciative of the support everyone has shown me in my journey. I will not let my condition prevent me from doing the artwork, even if it slows me down.

A beautiful collaboration

Megan Yoo Schneider introduced me to Shea Dunifon to get me started on my art mission. I enjoy collaborating with Shea and working with her has helped me build knowledge. Shea invited me to her plant, The South Cross Bayou Water Reclamation Facility in Saint Petersburg, Florida and she gave me a tour.

The projects I worked on with her were the coloring pages of her facility, some extras, and the "What's your Wastewater Treatment Personality" series which was an engaging project that was her ingenious idea that I helped bring to life. Collaborating with others on artwork is extremely important to me because it helps elevate the water industry and includes everyone's thoughts and ideas. I have been collaborating with different people in the industry and I have received many ideas from people. The ideas come in faster than I can make the artwork, so as a result, I have dedicated all my artistry to this industry.

Need for education

I spend between 50 and 60 percent of my water industry art mission reading books, watching videos, and reading



Left, one of the coloring pages of the collaboration between Mallory Chaput and Shea Dunifon with the South Cross Bayou Digesters in the background

Image courtesy of Mallory Chaput

articles about the water industry. The *TPO* magazine, *Florida Specifier*, and other newsletters and magazines have helped me. I have textbooks that I am working through including some on environmental engineering. I have three bachelor's degrees in Biology, Business, and Accounting from the University of Wisconsin Stevens Point.

Helpful to my art mission

I was invited to the Future of Water Summit 2022 by Hardeep Anand and Amit Pramanik, which has helped me gain more

confidence in my art mission. I have social anxiety, due to my social limitations that come with autism, so networking in person is a nervous challenge for me, however I really need this.

Going to conferences and social events makes me stronger and helps me learn more, which enhances the artwork. Zachary Weintraut introduced me to Hardeep when he saw the artwork online and he has been very kind and helpful to me when I met him in person.

Everyone on that team has been awesome to me and assisted me with a gen-

For the kids

Get free printouts of coloring pages that Mallory Chaput has created especially for youngsters whose parents read the *Florida Specifier*! Go to <https://floridaspecifier.com/>.

erous scholarship for the artwork through onewateracademy.org. Water and wastewater plant tours also are a great benefit for me in getting more ideas and inspiration for the artwork. I love it when people send me messages and emails.

It is very helpful for me when people message me with encouraging messages and ideas, and it also helps me remember people and get acclimated to the industry. Your messages are extremely important to me and it's the best way for me to network. Please, send me some technical facts about the industry and challenge my knowledge, I would love and appreciate that. ●

Mallory Chaput can be reached via LinkedIn or her email at mgchaput@gmail.com.

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UF scientists to study stormwater pond benefits

STAFF & WIRE REPORTS

In August a team of researchers at the University of Florida will begin a multi-year project evaluating environmental, social, and economic benefits of stormwater ponds, collectively called ecosystem services, funded by a nearly \$1.6 million grant from the National Science Foundation.

"While stormwater ponds are very similar to natural ponds and lakes biologically speaking, the fact that they are such a visible and common part of our daily lives in Florida means that we have a lot more influence on them and that in turn influences the ecosystem services they provide," said A.J. Reisinger, an assistant professor in the UF/IFAS department of soil, water and ecosystem sciences who is leading the project.

Stormwater ponds are omnipresent in the urban and suburban Florida landscape. UF indicates there are more than 70,000 such ponds in the state. Developers and urban planners use stormwater ponds to capture storm runoff and prevent flooding and erosion, but they can also provide other benefits, such as reducing pollution and enhancing community aesthetics and property values. These other benefits, and how they interact with each other, are not well understood.

The project team includes ecologists, water quality and algae scientists, social scientists, economists, and Extension agents. This diversity of approaches will help the team generate a comprehensive picture of stormwater ponds' benefits to people and the environment.

Orange County Magnolia Park opens new Eco Education Center building

Nearly 100 visitors recently came to Orange County Parks and Recreation's Magnolia Park to celebrate the addition of new amenities along the east shore of Lake Apopka. Mayor Jerry L. Demings, District 2 Commissioner Christine Moore and other officials cut the ribbon Aug. 8, 2022, for an Eco Education Center, restroom facilities, fishing and mooring pier, dock, pavilion, inclusive playground, additional parking, and interpretive signage.

"Magnolia Park has long been a jewel for camping for residents and visitors and now the park is even more inviting," said Mayor Jerry L. Demings. "We are thankful for the hard work and dedication from our community to make this project possible."

Advocates Friends of Lake Apopka helped develop an educational display highlighting the lake's history, including the long-term effects of local fertilizers in the water system and progress of the lake's health.

Drivers electrify summer travel with FPL's EV Expressway

Florida Power & Light Company has launched a road trip tool for electric vehicle (EV) drivers. The application is designed to map out statewide road trips that include FPL's EVolution public network charging locations.

The interactive website allows drivers to plan trips along FPL's "EV Expressway," selecting from pre-planned summer itineraries or creating their own customized adventure. FPL EVolution is poised to be the largest EV public charging network in the state, installing more than 1,000 charging ports at more than 200 locations along major highways and at popular destinations, with more to come.



"With prices at the pump continuing to rise, driving electric is more attractive than ever," said Crystal Stiles, executive director of development, distributed technologies, and mobility at FPL. "FPL's EV Expressway makes it simple for drivers to map out their travel plans with peace of mind, so they can reach their destinations and always have convenient charging locations along the way."

FPL's EV Expressway features pre-planned itineraries with a variety of destinations and attractions EV enthusiasts can enjoy, whether traveling with their partner, friends, or family.

SWMUD OKs conservation easement over Carlton Horse Creek Ranch

The Southwest Florida Water Management District and Florida Department of Environmental Protection, Division of State Lands (DSL) recently approved the purchase of a 4,357-acre conservation easement over part of the 16,315-acre Carlton Horse Creek Ranch. DSL will negotiate a conservation easement over the remaining 11,958 acres.

The property is across Hardee and DeSoto counties, in the southwest corner of Hardee County and the northwest corner of DeSoto County. The acquisition will preserve water and water-related resources by protecting 11 miles of Horse Creek, a major tributary of the Peace River. The conservation easement consists of 76 percent uplands and 24 percent wetlands.

"This is a chance to save one of the largest functional pieces of the Peace River Watershed," said Charles Lee, Director of Advocacy for Audubon Florida. "When you look at a satellite image to the north and south, it's the only place that has a shot of staying natural. It's rich in wildlife and water resources."

Horse Creek Ranch sits entirely within the Florida Wildlife Corridor and is a critical property in an area being proposed for future phosphate mining.

The parcel is being purchased for \$13,780,593.75 with funds generated from the sale of District surplus properties. Acquisition of Horse Creek Ranch is consistent with the District's Florida Forever Workplan and is consistent with the Florida Forever Act.

DEP awards \$8 million for 31 Coral Projects

The Florida Department of Environmental Protection recently announced the intent to award \$8 million from the Fiscal Year 2022-23 budget for 31 coral projects across the state. Projects include monitoring and support of stony coral tissue loss disease response, restoration of Florida's Coral Reef and the enhancement of regional water quality with a focus on Biscayne Bay.

Florida is the only state in the continental United States with extensive shallow coral reef formations near its coasts. Coral reefs support tremendous biodiversity and provide shelter, food

and breeding sites for numerous plants and animals, including those important to fishing like spiny lobster, snapper, and grouper.

Florida's Coral Reef stretches approximately 350 linear miles from Dry Tortugas National Park west of the Florida Keys to the St. Lucie Inlet in Martin County. Roughly two-thirds of Florida's Coral Reef lies within Biscayne National Park and the Florida Keys National Marine Sanctuary.

This funding will allow the continuation of key research that will guide regional, state, and national coral reef authorities, policies, and procedures to ensure consistency and effectiveness of reef management actions and support science-based decision making. Importantly, this funding is also being invested in partners that are responding to the ongoing outbreak, monitoring coastal water quality above the reefs, and creating infrastructure for onshore coral nurseries.

"Thanks to the Governor's leadership and this ongoing financial commitment, DEP can continue to support the multi-faceted partner response to stony coral tissue loss disease outbreaks through intervention, coral rescue, research and restoration, and water quality assessments," said DEP Secretary Shawn Hamilton. "This dedicated funding will allow the state of Florida and our partners to be global leaders in the development of coral restoration technology."

Gavagni recognized as Jim Stevenson Resource Manager of the Year

The Florida Department of Environmental Protection (DEP) is recognizing Dylan Gavagni, former manager of St. Sebastian River Preserve State Park, as a recipient of the Jim Stevenson Resource Manager of the Year Award. Gavagni served with the Florida Park Service for more than 20 years working at seven different Florida state parks. He is being commended for his stewardship of state lands and dedication to land management.

As park manager at St. Sebastian River Preserve State Park, Gavagni managed 21,629 acres in one of the most diverse conservation areas in the state. The park encompasses 22 distinct natural communities, supports 509 plant and 275 animal species, and includes 8 miles of riverfront that provides critical water quality protection for the St. Sebastian River and Indian River Lagoon.

"Dylan is an example of everything it means to be a resource manager," said Florida State Parks Director Chuck Hatcher. "His dedication, understanding and professionalism have earned him the respect of both his peers and the community surrounding St. Sebastian River Preserve."

Florida's Resource Manager of the Year award is named for James A. Stevenson, who led the state's ecosystem management, prescribed burning, non-native plant control and springs protection during his long career with DEP's Florida Park Service and Division of State Lands.

Florida Power & Light Company breaks company record with 16 new solar energy centers simultaneously under construction throughout Florida

Florida Power & Light Company announced it has achieved a company record of 16 new solar energy centers simultaneously under construction across the Sunshine State, passing the previous peak of 14 solar energy centers simul-

To FLORIDA NOTES Page 22

Texas' Environmental Save earns prestigious performance award

STAFF & WIRE REPORTS

TEXAS

► Environmental Save LLC, a Texas company specializing in Third Party Certification of Energy Star Buildings, has been recognized as having done the most in the nation.

Since EPA launched the ENERGY STAR program 30 years ago, more than 39,000 buildings have earned ENERGY STAR certification for superior energy performance. Energy Star Certification is given on an annual basis, and the information submitted in the certification application must be verified by a licensed Professional Engineer (PE) or Registered Architect (RA) to be eligible for approval.

www.energystar.gov/buildings/building_recognition/building_certification/certification_nation/leaders.

► Researchers from Texas A&M AgriLife of Texas A&M University have developed a new bioremediation technology using plant-based material and fungi that could take care of cleaning toxic upper and polyfluoroalkyl substances (PFAS) also called "forever chemicals" because they do not degrade easily in the environment. (*Texas A&M Agrilife*) <https://agrilifetoday.tamu.edu/2022/07/28/pfas-bioremediation-material-developed-by-texas-am-agrilife/>.

► Oil company Occidental and its subsidiary IPoint5 announce they'll begin engineering and building a direct air capture plant in Texas to reduce emissions from their operations in the Permian Basin. (*Globe News Wire*)

https://www.globenewswire.com/news-release/2022/08/25/2504560/0/en/Occidental-IPointFive-to-Begin-Construction-of-World-s-Largest-Direct-Air-Capture-Plant-in-the-Texas-Permian-Basin.html?utm_medium=email.

► A judge rules that Texas can't prohibit Florida-based NextEra from building a transmission project linking to an external grid, potentially boosting MISO and Southwest Power Pool. (S&P Global)

https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/083122-us-appeals-court-favors-nextera-in-interstate-power-transmission-dispute-with-texas?utm_medium=email.

► Texas Gov. Greg Abbott announced the adoption of the Texas Department of Transportation's \$85 billion, 10-year statewide road construction plan. The 2023 Unified Transportation Program has plans for an unprecedented level of projected transportation funding dedicated to improving safety, addressing congestion, advancing rural connectivity, and preserving roadways. (Texas Dept. Of Transportation) www.txdot.gov/about/newsroom/statewide/85-billion-10year-transportation-plan.html.

► The Environmental Protection Agency denied a request by Cheniere Energy, a leading U.S. producer of liquefied natural gas, to exempt two Gulf Coast plants from a federal air pollution rule that limits emissions of cancer-causing formaldehyde released by gas-fired turbines. Dozens of turbine operators faced a Monday deadline to comply with the formaldehyde rule, which is being reinstated after an 18-year stay. (Reuters) www.reuters.com/business/energy/epa-denies-cheniere-request-exempt-ling-gas-turbines-pollution-rule-2022-09-06/.



LOUISIANA

► Louisiana State Coastal Protection and Restoration Authority has completed one of its biggest coastal restoration projects, adding 1,000 acres of habitat to sites in the Terrebonne Basin. Officials also announced the completion of another project — the addition of 256 acres of beach and dune and 143 acres of marsh on West Grand Terre Island. Current projects in progress include the addition of a 1,600-acre in the historic Plaquemines Parish outlet called Spanish Pass, outside the town port of Venice. (*Nola.com*) www.nola.com/news/environment/article_588cc702-0936-11ed-bf80-3f5d3e6c505b.html.

► Louisiana Governor John Bel Edwards signed House Bill (HB) 803 into law requiring the statewide adoption of ACT No 635, the 2021 International Energy Conservation Code and International Residential Code Chapter 11 Energy Efficiency. The new law will transfer the responsibility of commercial energy code enforcement from the state government to the local, municipal/parish government and third-party providers, while the Louisiana State Uniform Construction Code Council (LSUCCC) will add the IECC as part of the statewide adopted codes. (PHCP Pros) www.phcppros.com/articles/15797-louisiana-clears-new-bill-to-improve-energy-efficiency-codes-statewide.

► The U.S. Economic Development Administration awarded a \$50M federal grant to H2theFuture, a project by a 25-organization partnership with representation from across South Louisiana. This grant will be supplemented by \$25M in matching funds by the State of Louisiana.

The H2theFuture project will build a clean hydrogen energy cluster to decarbonize the South Louisiana industrial corridor and create a Clean Hydrogen Hub. (GNO Inc.) <https://gnoinc.org/news/h2thefuture-announcement/>.

The grant was part of President Biden's American Rescue Plan. Twenty-one partnerships from across the country won awards, including other Gulf Coast recipients Osceola County Board of County Commissioners in Florida (\$50.8 million for the Building Central Florida's Semiconductor Cluster for Broad-Based Prosperity) and The University of Texas at El Paso (\$40 million for the West Texas A&D Cluster). (US Dept. Of Commerce) www.commerce.gov/news/press-releases/2022/09/president-biden-announce-21-winners-1-billion-american-rescue-plan.

► Calucem, a subsidiary of Spain-based Cementos Molins, plans to enter the U.S. market by developing a \$35 Million manufacturing plant in New Orleans East that will create 70+ new jobs. (Biz New Orleans) www.bizneworleans.com/calucem-plans-35-million-facility-in-new-orleans-east/.

► Pineville-based Cleco Power said it has inked an agreement with New York based D.E. Shaw Renewable Investments

to transform the former Dolet Hills coal plant in Mansfield into a \$250 million solar farm that can generate about 240 megawatts of power, enough to provide electricity for about 45,000 homes. (*The Advocate*) www.theadvocate.com/acadiana/news/business/article_e3f2eb9c-1f0b-11ed-becc-13d38cc2f1c0.html.

► The University of New Orleans announces it will develop a wind energy hub to spur the state's wind industry, support emerging companies, develop new technologies and build a renewable energy workforce. (University of New Orleans) www.uno.edu/news/2022-08-08/uno-launches-louisiana-wind-energy-hub-uno.

► CF Industries plans to invest \$198.5 million to construct a CO2 compression and dehydration unit at its Ascension Parish plant in an effort to reduce carbon emissions at what it says is the largest ammonia production facility in the world. The project would create 12 new direct jobs with average salaries of \$100,000 per year plus benefits. CF Industries would retain 521 existing jobs in the Baton Rouge Capital Region. (*Office of the Governor press release*) <https://gov.louisiana.gov/index.cfm/newsroom/detail/3773>.

► Entergy begins work on a \$100 million transmission project in southwestern Louisiana. (news release) www.entergy-newsroom.com/news/entergy-begins-major-transmission-project-in-southwest-louisiana/?utm_medium=email.

MISSISSIPPI

► On July 12, the Mississippi Public

Service Commission (PSC) voted to adopt its updated Net Metering and Interconnection Rules. The new rules expand the state's net-metering program by raising the participation cap for rooftop solar from 3 to 4% of a utility company's peak demand and prioritizing solar adoption for low-to-moderate income (LMI) customers, among other steps. The commission added a \$3,500 state rebate for home and small business owners purchasing solar, with higher payments to households earning up to 250% of the federal poverty level. (*Mississippi Today*) <https://mississippitoday.org/2022/07/13/new-incentives-for-self-generated-renewables-a-win-for-clean-energy/>.

► Mississippi's capital city of Jackson is struggling with the near collapse of its water system, prompting emergency declarations from President Joe Biden and Gov. Tate Reeves.

Many of the city's 150,000 residents have been without water flowing from their faucets following days of torrential rain that fell in central Mississippi in August, altering the quality of the raw water entering Jackson's treatment plants and slowing the treatment process, which depleted supplies in tanks and caused a precipitous drop in pressure. (NPR) www.npr.org/2022/08/30/1120126874/jackson-miss-is-in-a-water-emergency-and-residents-dont-have-clean-drinking-water.

ALABAMA

► Alabama received \$8.56 million in federal funds by the U.S. Department of

To GULF Page 13



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If PFAS everywhere, what is point of remediation?

By **CHAD NORTINGTON, PE, Regensis**

The environmental calamity caused by PFAS (per- and polyfluoroalkyl substances) continues to surprise and alarm communities on a global scale.

Recently, Stockholm University published a study finding PFAS to be widespread in rainwater at concentrations above the latest US Environmental Protection Agency (EPA) drinking water Health Advisories.

Hard to believe but true: rain falling anywhere on Earth, even in Tibet and Antarctica, is now considered 'unsafe' for drinking.

With PFAS confirmed to be fully entrained in the hydrologic cycle, some might question how it is possible to clean up the "forever chemicals." After all, if PFAS are everywhere, what is the point of remediation?

While it is true that we are all exposed to PFAS to such a degree it is literally in our blood, there is more concern for those drinking the water or eating the fish downstream of highly contaminated PFAS sources. For these populations, the risk of potential health consequences, including hypertension, decreased fertility, thyroid disease, and cancer is far greater if these PFAS sources are not addressed.

In Florida, the most notable PFAS sources are burn pits, where firefighting foams containing PFAS were sprayed onto the ground, impacting groundwater and nearby drinking water wells. Drinking water impacts from these PFAS sources have fueled cancer fears and prompted visits from Erin Brockovich in Florida communities such as Satellite Beach, Cocoa Beach and Patrick Space Force Station.

Remediation of PFAS source zones is clearly needed to prevent further PFAS exposure. The immense scale of the PFAS problem demands remedial solutions be economically and environmentally sustainable.

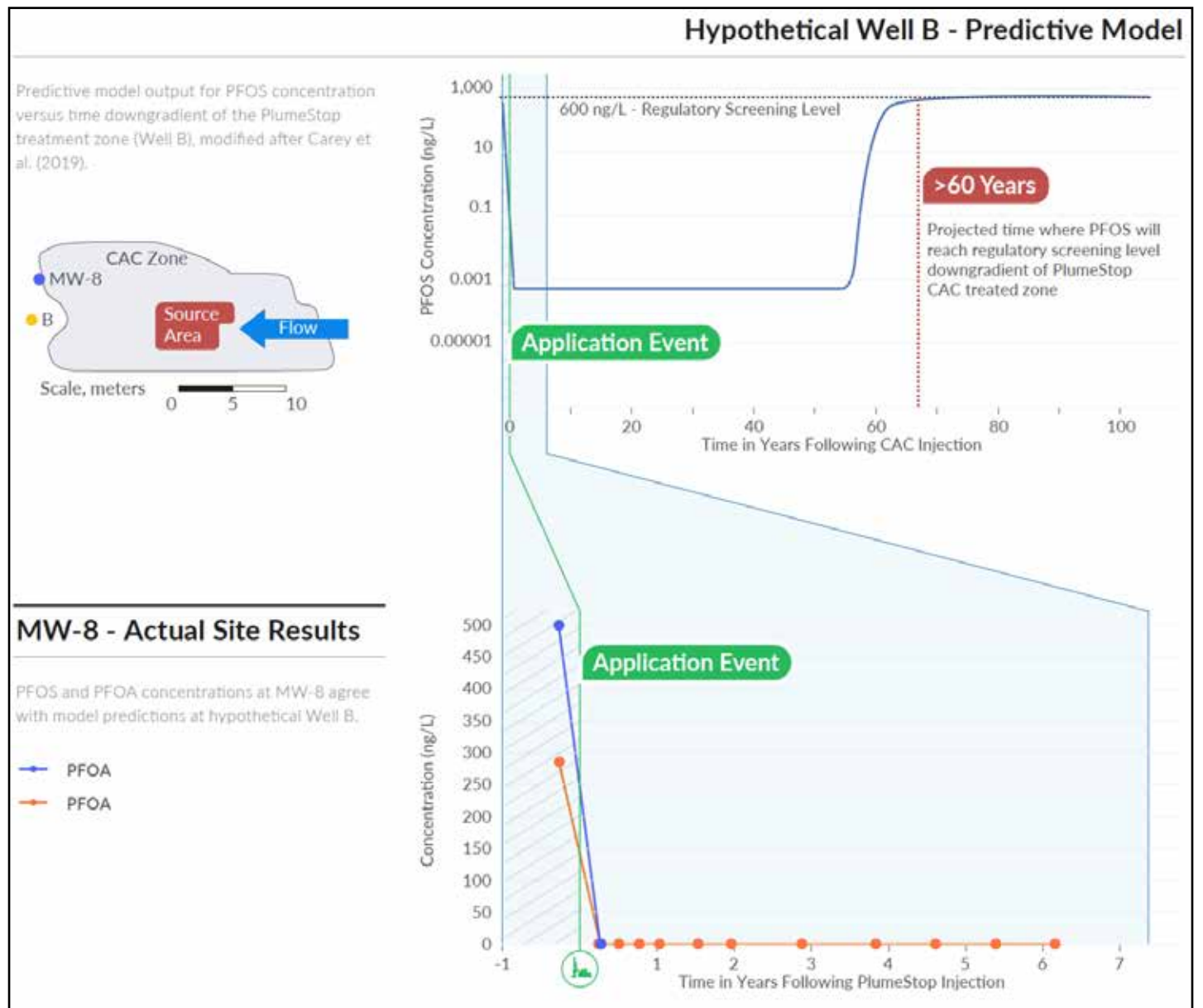
Enhancing PFAS plume retention to prevent exposure risk

In the latest issue of *Remediation*, groundwater remediation experts state enhancing a PFAS plume's retention using an in situ-applied sorbent technology like colloidal activated carbon (CAC), "can play an important role in reducing PFAS mass flux and providing long term protection to downgradient groundwater receptors."

And, in fact, CAC already is playing a role, removing PFAS from groundwater, mitigating potential exposure risks, and reducing liabilities at PFAS-impacted sites since 2016.

The patented CAC material, commercially known as PlumeStop, is injected into PFAS-impacted groundwater, typically in the form of permeable reactive barriers (PRBs) that capture and contain PFAS in place as groundwater moves through them. These PRB treatments are designed to stop PFAS movement (i.e. PFAS mass flux) in groundwater for decades after a single application.

The approach has proven effective across 28 sites globally. It is the only injectable amendment shown to consistently remove PFAS from groundwater over the long term, including the world's first in-situ treatment of PFAS, demonstrating 100% PFAS removal (i.e., from several thousand parts-per-trillion to non-detectable levels) for more than six years, thus far. A peer-reviewed study completed by a third-party modeling expert, predicts that this one-time treatment will effectively contain PFOS, the primary PFAS of con-



PlumeStop CAC treatment of PFOS - predictive model results over the next 100 years and actual results through six years of performance monitoring.

cern, at the source for more than 60 years.

Material scientists at REGENESIS have also developed a concentrated form of CAC (i.e., SourceStop, patent pending) to restrict PFAS leaching through soils beneath highly concentrated source zones. SourceStop's minute particle size and colloidal form make it more than ten times more effective in reducing total PFAS leaching than commodity powdered activated carbon (PAC).

Full-spectrum, low-cost, sustainable remediation solution for PFAS available

Applying the CAC technologies directly to the source zone to eliminate a PFAS plume's fuel supply and at down-gradient plume areas to halt further PFAS migration is a full-spectrum solution to eliminate PFAS exposure risk. Optimized source-zone/plume combination treatments can approximate a permanent solution for PFAS, with performance warranty options available at qualifying sites.

CAC treatments are the lowest cost and most sustainable solution for PFAS in groundwater. They avoid the capital-intensive installations and long-term operation & maintenance programs involved with extracting and treating the water above the surface (i.e., pump and treat). Further, these treatments do not produce emissions or consume energy over the long term and have earned favorable Green and Sustainable Remediation (GSR) ratings from regulatory agencies in the U.S. and internationally.

Since CAC treatments occur below ground, they also avoid generating PFAS solid waste materials--an important consideration, as there have yet to be any safe disposal or incineration methods identified for PFAS wastes.

The EPA's current Interim PFAS Destruction and Disposal Guidance suggests that the safest way to manage PFAS solid wastes is to store them onsite until further research is conducted. This suggestion,

perhaps, provides the clearest statement of the PFAS-waste-disposal dilemma.

The present and future of PFAS remediation

On Sept. 6, 2022, the US EPA published its proposed rule for public comment to designate PFOA (perfluorooctanoic acid) and PFOS (perfluorooctanesulfonic acid) as hazardous substances under CERCLA. Once finalized, this ruling will provide the necessary authority to facilitate PFAS cleanups.

Many more PFAS-contaminated sites will soon be discovered following the EPA's April 2022 directive to use the

National Pollutant Discharge Elimination System to identify PFAS sources. Once identified, there will be an urgent need to ensure these sources do not lead to more contaminated groundwater and PFAS exposures.

This need will be balanced by an equally urgent need to control costs and implement remedies that are sustainable. The PlumeStop and SourceStop CAC technologies are poised to meet these critical needs — now and into the future. ●

Chad Northington, P.E., based in Tallahassee, is Senior Technical Manager at REGENESIS.

Collecting accurate water data can be complicated

By EESA ALI
Senior Water Resource Analyst

In the State of Florida, the methods used to assess water resources are covered under various Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOPs). If you are performing compliance activities under a potable water, stormwater, or wastewater permit, or trying to determine if your source of water meets its designated use, you are going to need to follow those SOPs. But why?

In an earlier life, my FDEP district sometimes hired folks with no scientific experience to perform sampling duties. This may sound absurd, and it is, but it can be a common practice in the private sector as well. It was my team's duty to perform water quality sampling, biological assessments, analysis, and reporting, as well as train staff on these methods regardless of the candidates' experience.

One cohort was particularly stubborn when it came to operating within the established guidelines. Months into the process, we were still qualifying the samples these folks collected because those samples did not meet the minimum quality standards outlined in the SOPs despite them receiving the necessary training. According to my new teammates, their refusal to follow the SOPs had to do with their belief that environmental regulation was a waste of tax dollars and time.

At some point the training wheels had to come off, so I decided to couch their actions in terms of tax dollars and time. When you collect a sample, you need to consider several things before making an attempt. For example: Are the samples representative of the system or conditions you are trying to capture? Are your activities contributing noise to your samples? Are the procedures that you are using producing legally defensible data? The goal behind any sampling SOP is to standardize a set of procedures that facilitate the collecting of data that speaks for itself.

When the data suggests a water quality problem, it triggers a whole different slew of responses than if there was no problem. In the case of the State of Florida, it would have meant a multi-year investigation of whether there was an impairment, what the sources of pollution were, and studies on how to restore the system.

Thankfully, the state has a robust quality assurance/quality control program in place to flag bad data. This explanation was all it took to get my new staffers on board with following our procedures and studying the respective SOP before undertaking a new sampling mission.

I realize that some of my audience may share views that are similar to the subjects in this tale. Perhaps your only stake in resource management and regulation is as a regulated entity that wants less regulation.

Perhaps you do not see your resources ever drying up no matter how much it is exploited. Perhaps you are indifferent to any social cost to the people living downwind or downstream of your operation. So why should you care about collecting legally defensible data? You need to collect legally defensible data because bad data and decisions made using bad data is very expensive.

Bad data mixed in with good data can potentially poison all of your data and paint your organization as not acting in good faith. It would also ruin chances for your activities to remain permitted or permitted at levels that are desirable to your organization.

Before it was discovered that metals, including lead, were leaching out of pipes into drinking water, Flint, Michigan, had

the third largest Legionnaires' disease outbreak in US history. The bacteria *Legionella pneumophila* thrives in potable water distribution systems with poor disinfection and a supply of micronutrients like iron. *L. pneumophila* is just one potential bacterium that can spread in a distribution system. To combat bacterial loads, potable water supplies are disinfected with various forms of chlorinated compounds.

Water distribution systems in the US are required to maintain a residual chlorine concentration of no less than 0.2 mg Cl/L of "free chlorine". A free chlorine test measures any chlorine disinfection agent in water not bound to anything and therefore 'free' to disinfect water. "Total chlorine" tests measure all chlorine in water, i.e., free chlorine and bound chlorine (i.e. chlorine already attached to something and can no longer act as a disinfectant). The most common way of testing for either is using an instrument called a colorimeter. That instrument needs to be calibrated and verified before use and then

verified after use.

The difference in procedure between the total and free chlorine is the reagent packet used for each test. One packet is labeled "Total Chlorine DPD" and the other is labeled "Free Chlorine DPD" - and both packets look very similar. The lot number and expiration and type of DPD needs to be documented and associated with each value of residual chlorine measured.

Chlorine is an oxidizing agent and will bind to metals in solution as well as bacteria and dissolved organic material. If you measure the total chlorine and free chlorine of a sample and you find a huge difference between the two, you know that your disinfectant is being consumed by either dissolved organics, dissolved metals, bacteria, or a combination of all three. If you pump large amounts of disinfectant into your system and your residual free chlorine will not stay above a concentration of 0.2 mg Cl/L you have identified a problem and you need to identify the source.

To complicate matters just a little bit more, some disinfecting agents have shorter half-lives than others, so water that has been sitting in pipes of a residence that has not been occupied will have little or no disinfection unless those pipes are flushed. This is why the SOPs for collecting residual chlorine and a potable water bacteria sample stipulate that the pipe must be flushed for two to five minutes before collecting a sample.

So, what happens when a water supply entity reports total chlorine results as free chlorine because for whatever reason samplers were unaware that there are two different types of DPD and they were both in their sample kits? And what happens when a water supply entity routinely flushes water lines for as long as it takes (sometimes multiple hours) to get a >0.2 mg Cl/L chlorine residual? In both cases, the testing produces false positives painting a picture of adequate disinfection when there was little or no disinfection.

To DATA Page 9

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DEP releases 2022 air monitoring network plan

By **BLANCHE HARDY, PG**

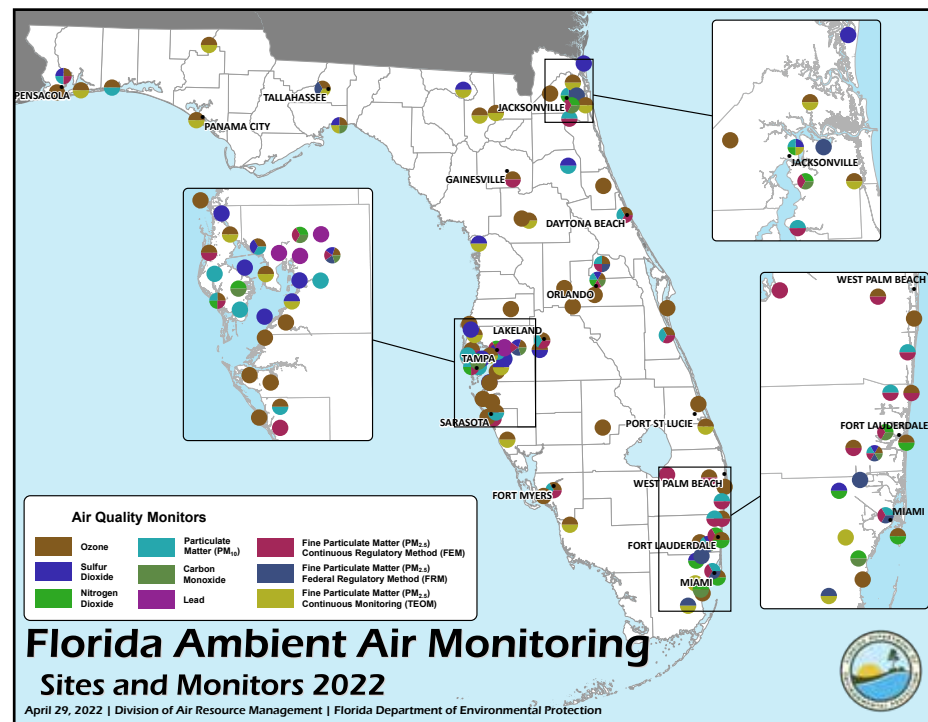
The Florida Department of Environmental Protection (DEP) Division of Air Resource Management recently released the draft 2022 Annual Ambient Air Monitoring Network Plan.

The report provides a summary of results from monitoring outdoor concentrations of pollutants according to ambient air quality standards established by the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection.

DEP has developed and maintains a comprehensive ambient air monitoring network that covers over 90% of the 21 million people living in Florida. The air monitoring network is designed to provide the public with accurate air quality information. DEP's system currently meets or exceeds federal air monitoring requirements.

As a result of the state-wide effort, emissions in Florida continue to decrease and are currently the lowest recorded. Florida has one of the best outdoor air quality monitoring networks in the nation, allowing DEP to provide accurate and timely data to the state's residents and visitors.

The U.S. Environmental Protection Agency designated the State of Florida as the Primary Quality Assurance Organization (PQAO) responsible for monitoring air pollution since 2015. The state's annual Air



Monitoring Network Plan is a requirement of the Code of Federal Regulations (40 CFR Part 58). The annual report provides evidence that Florida's air monitoring network meets current regulations and must be posted for public comment 30 days before submission to the EPA Regional Office.

A fundamental function of monitoring is identifying areas where pollutant levels violate ambient air quality standards and where they do not. Areas in violation of the

standard require increased efforts to reduce the pollution causing the exceedance.

Florida's air monitoring network includes greater than 180 monitors at 89 sites strategically positioned across the state. The 2022 Plan notes the state's air monitoring sites are concentrated in densely populated areas, along the coast, and near interstate highways. DEP also maintains three rural monitoring sites (panhandle, and both in northern and southern Florida) for

comparison to regional background levels of pollution.

The statewide air quality monitoring network is operated by nineteen state, local, and private environmental programs. Air is monitored for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (or particle pollution [PM₁₀ and PM_{2.5}]) and sulfur dioxide (SO₂). All of Florida's monitoring agencies are managed under the PQAO to ensure monitoring is conducted via a common set of procedures, calibration facilities and standards, and with oversight by a single agency.

Florida's air monitoring network is designed to provide timely air pollution data to the public, support compliance with ambient air quality standards, develop emission reduction strategies, and support air pollution research studies. Data gathered from Florida's monitoring network is used to address a variety of criteria including determining a monitoring area's compliance with National Ambient Air Quality Standards and produce daily air quality forecasts and the daily Air Quality Index (AQI) report.

Current data can be obtained at DEP's Florida's Air Quality webpage which provides the public with measurements of pollutant concentration levels in the ambient air, the portion of the atmosphere near ground level and external to buildings or other structures. ●

Specific specifications important for specifiers

By **HARRY J. LUBITZ, CSI, CDT, IIBEC**

In the role as architectural director for UGL (a division of SIKA), they read and review more than 100 project specifications per week. Unfortunately, they find a mountain of mistakes and incorrect product references which makes it nearly impossible for an interested contractor to accurately bid a project.

In an effort to correct these issues, they usually send an RFI (Request for Information/Interpretation) to the individual(s) named in the Contract Documents to seek a correction in an upcoming Addendum.

Even more unfortunate is that the individuals involved in creating the project manual make it next to impossible to identify who is responsible for the interpretation of the request, how to contact them, and often make the time frames for a response or the method of submission so onerous that it discourages anyone seeking an interpretation.

So, it then becomes a judgement call by the interested contractor as to how to bid the project without any guidance from the architect, engineer, or specifier. Consequently, control over the outcome of the project has been lost.

How did we get here...

The development of standardized Architectural Contract Documents dates back to 1888 when the American Institute of Architects (AIA) first published the *Uniform Contract* to be used by architects and builders. This was followed by the first *Standard Documents of the American Institute of Architects* in 1911.

In an effort to improve the quality and consistency of specifications, the Construction Specifications Institute (CSI) was founded in 1948.

CSI published the first *MasterFormat* in 1963 featuring 16 Divisions and a five-digit numeration system. *MasterFor-*

mat was revised in 2004 expanding to 50 Divisions and a six-digit numeration system.

CSI also launched the three-part specification system (SectionFormat) in 1969 with its current revision launched in 2008.

What is a specifier?

A specifier is often a trained architect who has a specific aptitude or affinity toward writing specifications. Architecture schools provide minimal education on specifications, consequently most specification writers relied on membership in CSI to learn from other specifiers and obtain training and certification from CSI.

In 1978, the Certified Construction Specifier (CCS) designation was created, and almost 500 individuals immediately obtained that designation. In 1993, the Certified Design Technologist (CDT) designation was established as the prerequisite for higher level designations and between 1993 and 2013 more than 26,000 individuals took the CDT exam.

An individual becomes a specifier often by accident as a firm needs this particular skill and the individual chooses to take on the task of managing the office master specification . . . sometimes voluntarily, sometimes not. Nevertheless, between the 1960s and early 2000s, nearly every decent-sized architecture firm had one (or more) specifiers on staff.

By the 1980s, some of these original specifiers had retired and wanted to continue to write specifications on their own, or left their firm to ply their craft independently. The Specification Consultants in Independent Practice (SCIP) organization was born to continue knowledge sharing and advance the professionalism of specifications.

Tools of the specifier

The first guide, SPECTEX, was developed by The Construction Sciences

Research Foundation and was founded by CSI circa 1967. It was established partly by a grant from Bechtel. The CSI Technical Committee was responsible for reviewing the documents before they were published.

In 1969, the American Institute of Architects (AIA) launched MasterSpec to create a prewritten and professionally vetted standardized specification format and researched selection of manufacturers and products so that architects, engineers, and specifiers could save research time and not start every project specification from scratch.

In 1983, SpecLink was launched in partnership with CSI, as a competitor to MasterSpec and was a licensed user of SPECTEX. Recently another cloud-based system, Conspectus Cloud, was launched.

It is estimated that in excess of 50% of specifications are created by either of these systems in their new cloud-based formats. Unfortunately, there are still many firms that have old, "pre-cloud" office master specifications that get recycled from project to project. More about this later.

The wheels fell off in 2008 . . .

I learned from an old specifier friend, Ron Geren, that the Bureau of Labor and Statistics (BLS) reported that the architecture profession was one of the hardest hit professions in the Recession of 2008. Even worse, the Specifiers were let go at a very high rate as firms "thought" they could use these "out-of-the-box" software programs as a substitute.

Firms pushed the specification development on to project managers who had no desire to complete this task and 1) just plugged in an old, pre-cloud, un-edited version of MasterSpec, or 2) took the old office master specification that they had used on the last five or more projects and "changed the front cover" for the new project. Even worse, some firms pushed

the maintenance of the office master specification down to an administrative assistant or receptionist to justify their position.

The most obvious and egregious...

If you don't utilize the cloud-based versions of the aforementioned specification services, and you don't have an in-house professional specifier, or are utilizing a professional independent specifier then you probably haven't looked at your office master specifications in a long time.

When I read a firm's specifications, the most obvious clue is the section numbers. If your specifications have a five-digit Section number and/or only 16 divisions . . . your specification is older than 2004. (You cannot believe how many of these I see each week) And in my experience, unfortunately, engineering firms are the biggest culprits.

As you can imagine, all the product references and testing standards are all pre-2004, too.

As I look deeper into these specifications, if they are not written in a three-part format, the specification may be older than 1969. Fortunately, this is rare, but the information ensconced in this three-part specification is often ancient.

Part 1 has the reference documents which are often incorrect and out-dated.

Part 2 lists products and manufacturers which often are no longer in existence or have changed names/merged, or the product themselves have been discontinued.

And finally, Part 3 lists the execution of the section where many practices have been changed over time.

How can you count on a contractor to properly bid and execute your design when they have no reference standards, no reference manufacturers, or inaccurate installation protocols to follow?

To SPECIFICS Page 17

IRL Hall of Fame to induct first five members

STAFF & WIRE REPORTS

The first Legends of the Indian River Lagoon, a new hall of fame, will be inducted by Marine Resources Council (MRC) at a Nov. 4th ceremony, 5-8pm, at the Hilton Melbourne Beach Oceanfront. Their stories will be promoted to draw attention to progress made in restoring balance to the rapidly developing coastal community east of metropolitan Orlando, and what more needs to happen.

The diverse, narrow, and fragile 156-mile-long lagoon waterway is one of only 28 Estuaries of Natural Significance in the U.S. "The Legends of the Indian River Lagoon will showcase the people, organizations, and projects that should be remembered for protecting, restoring, uniting, and promoting Florida's east-central coastal community," explained MRC Executive Director Leesa Souto, PhD.

While progress is being made, the foun-

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dational seagrass habitat of the lagoon is dying, due to rapid development, growing pollution, and outdated infrastructure and community planning. "We need to better understand what is polluting our water and achieve balance as we develop our communities," said Souto.

"Counties and cities need to implement common-sense, cost-saving Low Impact Development (LID) practices, which will reduce flooding and water pollution, build more resilient communities, and strengthen their economies," she added.

The lagoon is surrounded by beaches,

wildlife refuges, Kennedy Space Center, and more than 40 rapidly developing municipalities. East of Orlando, fresh water from 10 major tributaries and a vast network of creeks, canals, and roadways all drain into the lagoon, introducing a variety of pollutants that mix with salt water from the Atlantic Ocean.

Since 1990, MRC members and volunteers have worked together to create a SEA Change: Science + Education + Action. "A protected and restored lagoon, in turn, will preserve home values, the economy, and industries such as eco-tourism and commercial and sport fishing," Dr. Souto said.

Those interested in attending the Love Our Lagoon Celebration, knowing more about the Legends of the IRL, and MRC volunteer and member opportunities may visit SaveTheIRL.org or call 321-725-7775. ●

Duke Energy, USFWS partner to protect flora, fauna

By BLANCHE HARDY, PG

As part of its commitment to support vitality and a healthy ecosystem, Duke Energy Florida is partnering with the U.S. Fish and Wildlife Service (USFWS) to protect a very special population of federally endangered wildflowers in central Florida.

USFWS and Duke Energy's environmental scientists are working with agencies and stakeholders, including Florida Native Plant Society (FNPS), Bok Tower Gardens, FNPS-Marion Big Scrub Chapter, Putnam Land Conservancy, as well as volunteers and private landowners to maximize the preservation and protection of the endangered wildflower clasp warea (*Warea amplexifolia*) and the federally threatened sand skink (*Neoseps reynoldsi*). The species are present in an unincorporated community in Marion County, near Ocklawaha.

In an effort to restore and protect Florida's unique flora and habitats, Duke Energy Foundation has provided more than \$188,000 in grants to the Rare Plant Conservation program at Bok Tower Gardens to establish new populations of clasp warea through seed preservation, habitat quality improvements, biological research, and increasing plant numbers in the wild.

Clasp warea is an annual wildflower that only occurs in the northern third of the Lake Wales Ridge in the central ridges of Florida. The targeted population is among the largest identified in the plant's limited

range. The efforts of Duke and USFWS will help protect other species, including the sand skink which depend on the same habitat.

Sand skinks are small, thin, grey to light brown lizards with shiny scales. They may reach up to five inches long and are rarely seen at the surface. They consume insects and their presence is typically recognized by undulating tracks as they 'swim' through the sand just below the surface.

As is the case with many of Florida's native species, clasp warea has become endangered as a result of habitat loss. A great deal of the flower's xeric sandhill habitat was altered for agricultural uses. Many of these impacted areas have subsequently been expanded and converted for residential development. Populations of flora and fauna occupying these habitats have become fragmented in response to natural degradation and loss of habitat connectivity.

Xeric sandhill habitat consists of dry, predominately Longleaf pine forest with a relatively open understory containing wiregrass and herbaceous wildflowers. Sandhills are gently rolling terrain comprised of well-drained sand. Understory species include turkey oak, sand post oak, and bluejack oak as well as plants having root systems that allow the uptake of water via deep sand soils in especially dry terrain.

"Powering the lives of our communities extends far beyond keeping the lights on for our customers," said Melissa Seix-



Photo courtesy of Shirley Denton

Warea amplexifolia.

as, Duke Energy Florida state president. "Duke Energy is proud to work alongside our community allies to protect Florida's most-treasured species and the habitats on which they depend."

As part of their natural systems management efforts, Duke Energy is installing "sensitive habitat" management signage within its rights-of-way corridors to alert contractors and crews working in these areas. The company has also shifted its vegetation management practices to limit mowing and lower the volume of herbicide used in targeted areas to help the plants

grow and flourish.

Duke Energy Florida's willingness to support management of the endangered clasp warea on its lands alongside the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program speaks volumes," said USFWS' Partners for Fish and Wildlife/Coastal Program Coordinator Chad Allison. "The cooperation inspires and engages a network of state and federal agencies, nongovernmental organizations, and private landowners alike proving conservation and industry can not only coexist but can ultimately thrive together." ●

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From DATA Page 6

I do not know that these conditions contributed to what happened in Flint, Michigan,, but I have observed regulated entities mixing up reagent packages, cooking the books when it comes to line flushing, and presenting unverified data as verified, among other things.

Florida is a bit different from northern states due to different water sources, water

treatment, and typically a younger and less metallic distribution system, but the potential for widespread waterborne public health problems will not be detected if the system in place to produce dependable data is ignored. The consequences could have a cascading and devastating impact on communities, economies, home values, businesses, regulated entities, public health, and future generations of Americans. ●

METRA helps environment through training, partnerships

STAFF & WIRE REPORTS

METRA began in 1998 as an informal alliance between the Florida Department of Environmental Protection Central District (DEP) and local government agencies with a shared goal of improving compliance through private/public partnering in the development of environmental training.

A resolution was signed on Earth Day 1998 by the leaders of Orange and Seminole Counties, the City of Orlando, the Greater Orlando Aviation Authority, Reedy Creek Improvement District, and the DEP Central District

Hazardous waste staff at DEP's Central District office was already offering training to industry professionals and facilitating the exchange of information and assistance to local programs. Regardless of this assistance, environmental inspectors found that many businesses still did not know where to seek help for environmental questions and training.

Since Earth Day 1998, METRA has targeted the vehicle repair, quick lube, medical, manufacturing, and construction industries for training. Multiple workshops attended by more than 1000 "hands on" workers have been conducted in Seminole, Orange, Volusia, and Brevard

Counties. Participants have the opportunity to network with peers, service suppliers, and government inspectors to better understand the needs of others, improve communication, and ultimately increase trust. Workshop topics include pollution prevention, stormwater management, job safety, and management of regulated and nonregulated waste. In 2001 METRA qualified as a 501(c)(3) non-profit corporation allowing it to be eligible for grants and ultimately better serve the community.

In the early 2000's, METRA's focus shifted to the important issue of stormwater contamination. Inflow of automotive fluids, lawn fertilizer and chemicals, leaves and grass cuttings into lakes, ponds, and other waterways is a major issue in Florida; it involves everyone. METRA collaborated with a local TV station to televise a series of public service announcements. In total, six spots were produced for the highly successful "Only Rain Down the Drain" campaign. By 2006, this campaign was brought to the internet, the five-day weather forecast page, and other highly-trafficked digital outlets.

METRA continues to offer compliance trainings on the second Wednesday of each month. To participate, visit www.metra.org for more info. In





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addition, the annual Environmental Excellence Day will be held in person once again on November 10, 2022 at the Winter Park Events Center. This all-day event will feature presentations on hazardous waste management; storage tank compliance; air permitting; climate

change; nitrate isotopes; and environmental, social, and governance framework. Lunch will be provided and there will be ample time to mingle in the exhibit hall. A networking social hour will follow this event at the nearby Bar Louie. We look forward to seeing you there! •

FBA celebrates 25 years with Sarasota conference

STAFF & WIRE REPORTS

The Florida Brownfields Association will celebrate the 25th anniversary of the Florida Brownfields Conference at the Hyatt Regency Sarasota on Oct. 25-26.

Founded in 1998, the annual brownfields conference brings together representatives from federal, state, and local governments with environmental professionals, industry leaders, real estate agents and developers, university faculty and students, nonprofit stakeholders, and community advocates to discuss and educate attendees on the latest advances in brownfields cleanup and redevelopment throughout the state.

The Florida Brownfields Association (FBA) is a not-for-profit, volunteer, service organization dedicated to advancing brownfields cleanup and redevelopment and committed to advancing environmental justice in Florida. Working in cooperation with a wide range of governmental and non-governmental organizations, the FBA stakeholders and professionals provide brownfields information, assistance, and redevelopment strategies to communities and the public.

This year's silver anniversary conference will feature an all-star lineup of past FBA presidents along with executives from the brownfields and environmental justice programs at the Florida Department of Environmental Protection and U.S. EPA Region 4. Sessions will cover a wide range of topics including brownfields redevelopment incentives, legislative and technical issues, success stories, a 'Brownfields Jeopardy!' gameshow, and a new workshop on the Florida Brownfields Redevelopment Atlas.

The event also features an exhibit hall full of the latest science, technology, products, and services in the brownfields remediation industry. Special awards will be presented for excellence in brownfields redevelopment and environmental justice.

The conference keynote speaker is Dr. Carlton Waterhouse, the Deputy Assistant

Administrator for EPA's Office of Land and Emergency Management. Appointed by President Biden in 2021, Dr. Waterhouse began his career as an attorney with the EPA and later as a professor at the Howard University School of Law and the Howard University School of Divinity. Dr. Waterhouse is a Fulbright research scholar and an international expert on environmental law and environmental justice.

Through the efforts of a semi-formal Florida Brownfields working group, the first annual Florida Brownfields Conference was held in Clearwater in 1998.

By March 2002, the first formal meeting of the Florida Brownfields Association (FBA) was convened in Orlando. •

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Groups OK creation of 75-acre Gainesville wetland park

By **BLANCHE HARDY, PG**

Gainesville Regional Utilities (GRU), the Florida Department of Environmental Protection (DEP), the Suwannee River Water Management District, and Alachua County are creating a 75-acre groundwater recharge wetland park in southwest Gainesville.

The Gainesville City Commission approved GRU's ranking of design-build consultant proposals earlier this spring. Wharton-Smith, Inc. was selected to execute the project with an anticipated public opening in 2026. The city purchased the park property last year for \$2 million.

"We are excited about reaching this important milestone and the expertise this design-build team brings," said GRU Engineer and Utility Designer, Kristen Sealey. "We look forward to creating this project collaboratively with the team, our project partners, and community stakeholders."

GRU and its state and regional partners are currently in the project's planning, permitting, and design phase. DEP and District are providing funding support for the design and construction of the wetland system, about \$12 million in total.

GRU is undertaking the project to increase aquifer recharge, boost aquifer levels, and preserve water supply to the Santa Fe and Ichetucknee Rivers and surrounding springs. The public park is intended to preserve wildlife habitat while providing a resource for receiving treated, low-nutrient reclaimed water to recharge the Floridan aquifer.

The new recharge wetland site location was selected for its sandy, well-



drained soils which are favorable for aquifer recharge and the site's proximity to GRU's existing reclaimed water system and Kanapaha Water Reclamation Facility. GRU plans to provide three million gallons per day (MGD) of recharge initially, subsequently increasing capabilities to 5 MGD.

The project was highlighted at the University of Florida's Sustainable Water Resources Institute 2022 Symposium and is part of the North Florida Regional Water Supply Plan. GRU has designated the project as a centerpiece of their water reuse program.

A series of shallow recharge receiving basins will be constructed within the park to create the wetlands. The basins will be populated with wetland plants and hydrated with high-quality reclaimed water. The partners will rely on natural processes in the constructed wetlands to filter the water and reduce nutrients to low levels before percolating the water into the soil and replenishing the groundwater below.

The system will allow GRU to provide 100% beneficial reuse of reclaimed water. The utility has been creating and operating aquifer recharge wetlands since 2008. Performance evaluations and water quality data collected from similar systems, such as GRU's Sweetwater Wetlands Park in Gainesville, have demonstrated the ability to attain high water quality standards frequently with nitrate levels below 1 mg/L.

The man-made wetland basins will occupy between 20 to 45 acres and will

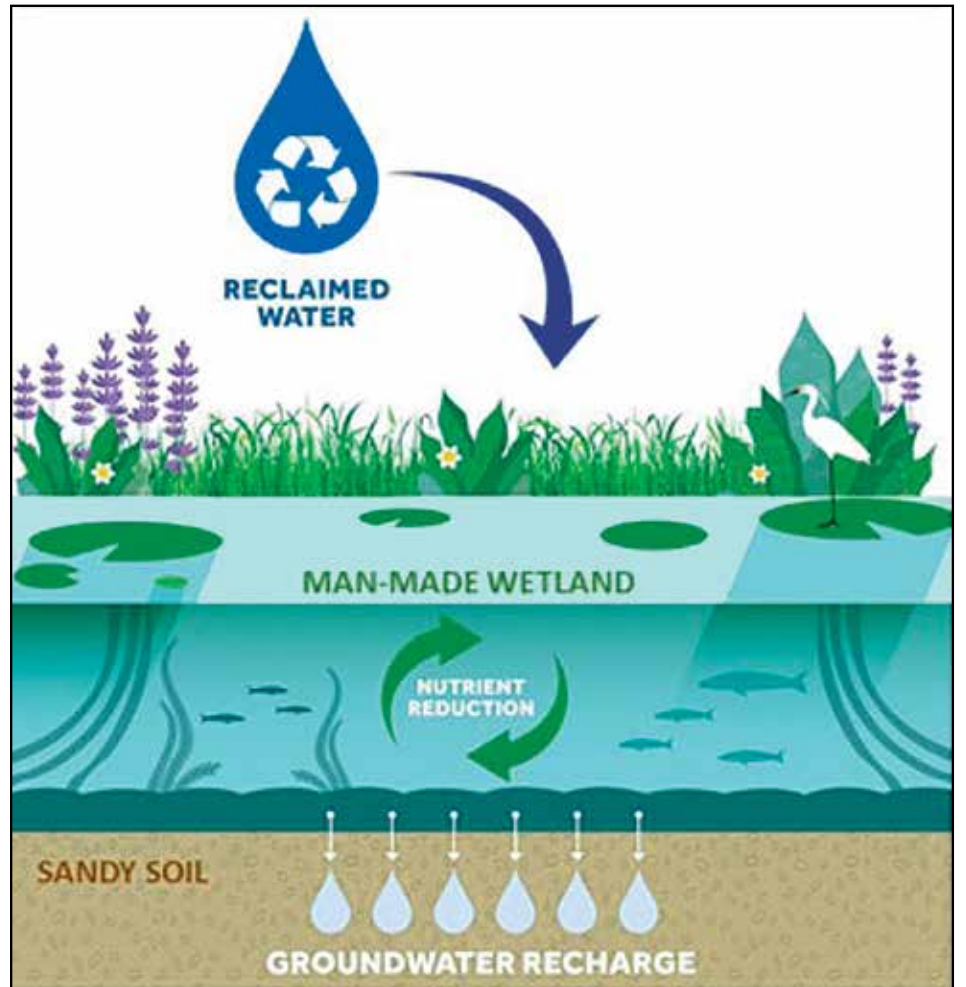


Image courtesy of Gainesville Regional Utilities

Groundwater recharge wetland schematic.

be surrounded by paths and an abundance of green space that can be used for passive recreation like walking, jogging, wildlife viewing, photography, and environmental education.

GRU plans each basin will consist of native wetland plants, including several flowering species providing pollinator habitats in addition to enhancing overall

park aesthetics. The hydrated wetlands are intended to maintain a new and diverse ecosystem with wildlife habitats, scenic views, and meandering trails lined with shade trees. Alachua County and GRU have partnered to manage public access and will construct future amenities such as restrooms, playgrounds, and enhanced parking. •

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Archaeologist unearths potential for youths with autism

STAFF & WIRE REPORTS

Thomas Penders spent the first part of his professional career ignoring his future in favor of digging into the past.

Penders, a life-long Floridian, has been a professional archaeologist since 1984; receiving his Bachelor's and Master's degrees in anthropology/archaeology from Florida State University.

Most of us go through life putting one foot in front of the other. The same can't be said for Penders, since both his feet have been amputated. No worries, Penders isn't one to sit around feeling sorry for himself.

In fact, equipped with prosthetics, he still maintains a seven-days-a-week schedule, which has him in the field all over Central Florida. Penders doesn't want your sympathy, but he may want your donations; more on that later...

Penders cut his teeth as a member of the famous Windover Archaeological Research Project from 1984 to 1987. As a practicing anthropologist and archaeologist, Penders made it a cornerstone of his business to involve college students and interns.

He enjoys sharing knowledge and teaching. But, it wasn't until his daughter, Becky, was uninvited in participating with other children that Penders got a real education.

His daughter Becky was born blind and autistic; and Penders remembers the day and circumstances when his daughter was un-invited to play with the other kids.

Rather than look to someone to "fix" the situation, Penders set out to remedy it himself.

Along with his wife, Nell, they founded Archaeologists for Autism, a 501(c)(3) which brings the experience of archaeology to children and young adults on the spectrum.

Penders re-imagined his training and education in a format so that autistic



Photo courtesy of Thomas Penders

Thomas Penders created Archaeologists for Autism which gives kids on the autism spectrum a chance to experience archeology and paleontology — at their pace. Penders seeks donations of "dig-able" items.

PROFILE IN INDUSTRY

children could share and discover a love of archaeology . . . and who doesn't like digging in a sandbox? The Archaeologists for Autism (AFA) mission is to unlock the potential of autistic children and young adults by providing them a chance to experience archaeology in a fun, low stress environment, and most importantly, on their terms.

Archaeologists for Autism hosts an event every Fall in Brevard County. It is a day for children and young adults to experience archaeology, paleontology, history,

Can you dig it?

Want to get involved in this one-of-a-kind adventure? Anyone with surplus trade show stress balls or other "dig-able" items are encouraged to donate them to **Archaeologists for Autism**. For more information, call 321-307-0075 or 321-307-1314. Or email arch4autism@gmail.com.

Native American-style music and so much more . . . all on their own terms and in a relaxed atmosphere.

All the activities have been reviewed by experts in the field of autism and behavior-

al analysis; siblings of autistic children are also welcomed and encouraged to participate.

Penders has totes loaded with actual bones, pottery, stone tools, and other unattributed relics which are donated by museums and private collections for children to 'discover' at AFA events.

In addition to the old, Penders supplements the digs with the new . . . he shared with us that stress balls make great dig finds. Any company with surplus trade show stress balls or other 'dig-able' items are encouraged to donate them to AFA.

Anyone who wants to get involved in this one-of-a-kind organization is encouraged to call the Penders; and if digging isn't your thing, they provide lunch, snacks, and goody bags . . . maybe next time with your company's logo on it!•

Join environmental associations to make a difference

By STEVE HILFIKER

Since 1991, involvement in industry associations has been a cornerstone of my career. Participating in environmental groups has been one of the best business investments I've made.

After graduate school at UF, I joined the board of directors of the Florida Environmental Assessors Association, at age 25.

During the next 31 years, I've gained invaluable knowledge through my association memberships; such that I've been able to focus the rest of my time on strategic business planning and billable production. The ROI on membership dues is seen in increased productivity through informed action.

The reason most businesses and individuals shy away from such opportunities is the perceived time and cost it takes without realizing the actual benefits of involvement. I hope to help my colleagues overcome such objections and perspectives.

Association leaders have developed substantial momentum with fellow practitioners and stakeholders who have gotten involved in the Florida Ground Water Association (FGWA), Florida Brownfields Association (FBA), and Environmental Professionals of Florida (EPoF) in recent years. With the help of our responsive members in the House and Senate, we have

"Our industry is strong because our associations are strong. Your careers are strong to the extent you serve your industry. Don't limit that value within your company; you will benefit outside your firm at the association level as well. Grow stronger through peer-to-peer interaction."

— Steve Hilfiker

developed consistent communications with Florida legislators and the Florida Department of Environmental Protection (FDEP).

Our frequent meetings with government officials are productive. We have contributed common-sense, practical ideas and suggestions which policymakers can actually use.

We offer insights and provide land-owner perspectives which legislators may not ordinarily consider; we help them understand unintended consequences to businesses they may not see from their seats in Tallahassee.

Our meetings with key legislators and administrators clearly benefit the industries we represent but we could not do it without input from our members. And, we always need more members.

For example, time is of the essence on a few matters related to the Petroleum

Restoration Program (PRP). Specifically, we have done a great job over the last few years working with legislators on appropriations to get the program, the assessment, and remediation industries back on track. However, complications related to inflation, materials, and labor have created a need for increased efficiency in processing PRP work.

We will continue communications that have been ongoing since September 2020 with PRP administrators and key legislators to identify and resolve areas where services are backlogged and impeding progress. It is imperative that appropriated funds be processed in a timely manner so we can continue the recovery needed for a thriving groundwater assessment and remediation industry, including drillers, laboratories, contractors, vendors, and all involved in the supply chain.

It is evident during our quarterly conference calls between Administrators of the PRP and Agency Term Contractors (ATCs) who are actively involved within our industry association meetings. We have developed good relationships with PRP leadership and are now trying to improve processing speed at each level of PRP operations with both private and public sector inputs.

For those not involved in environmental industry associations, please join. If you're interested in professional services for re-development and real estate transactions, I encourage you to join the Florida Brownfields Association.

If you're a consultant or contractor in the environmental assessment or remediation industry, please join FGWA or EPoF. Many other associations making impact in Florida are described below, but these groups are making great progress in environmental policy and legislative affairs for the groundwater assessment and remediation industry to which I am committed.

Participating association members are informed in advance regarding "the issues." Chances are, someone in your association of choice can answer questions because we have already collaborated and organized the primary issues that effect most of our

To CAREER Page 16

Florida Specifier

Follow nature's clues to find lobsters, or even treasure

By CAPT. MATT BADOLATO

The secret trail to the ocean through oaks and cabbage palms was shown to me by A Guy Named Steve almost 20 years ago. We parked on the side of State Road A1A in Vero Beach, put scuba gear on our backs, and huffed and puffed through the dark woods. On the other side, the sea sparkled, like diamonds. Through the clear, blue south Florida water, we could see the purple shadows of rocky reefs and ledges below.

The Guy Named Steve threw out a chum block and waited, eventually spearing a triggerfish and mutton snapper. I crept along the bottom, pecking under ledges for lobster. Spiky black urchins dotted the reef. Yellow-striped porkfish and blue parrotfish circled around me. Tiny, rainbow Spanish lobster hung upside down in sponge-encrusted caves. Stone crabs guarded shell-littered holes in the rocks; who knows . . . maybe even some pearls.

This was my first time shore-diving. It was fantastic. The colors. The bustling fish. The crackling reef sounds. And then I saw my first big lobster.

It stood proudly in a deep cave. Its antennae scanned the water for intruders. Its legs were two feet long — and wide as a king crab's. I used my flimsy piece of aluminum rod to try and "tickle" it away from its lair, but it merely moved deeper into the cave. I tried grabbing for its antenna (a rookie mistake) and it shot to the back of the crevice; and I never saw it again.

Fast forward to 20 years this past August 2022. We've had drought and calm wind for a month, and the waters on Flori-

da's east coast in Vero Beach were clear as Tahiti.

I've been diving this stretch of beach — the Treasure Coast—since The Guy Named Steve showed me the ropes. Our secret path through the coastal hammock fell victim to the bulldozer. Now some wealthy fellow walks back from his mailbox across travertine pavers where our trail once lay.

It's quite reckless to assume beaches will always be accessible in this area. Slowly but surely, private owners and developers have bought up most of the coast—can't blame them, it's lovely here. So, I'm relegated to diving at one of only

a handful of public beach access points.

Woes of gentrification aside, the real treasure here is underwater. There are gorgeous rock formations, fish of all shapes and sizes, and I can usually find a handful of lobster for the table. Shore diving feeds my appetite for color and adventure in life — it's a chance to explore, search, hunt, and gather.

Lobster diving is the same as it's always been. Find, tickle, grab. Repeat.

On these reefs, the lobster are large and clever. They choose ledges which afford them space to flee (always backward). I've come to use a 6-foot piece of aluminum tubing bent into a hockey stick shape to coax the 5- to 10-pounders out of their lairs.

Finding them is another matter. Unlike the Florida Keys, lobster aren't tucked into every nook and cranny; here, they're spread out across the reefs. On a good dive you might get a few — but they're big. Sage advice once shared from an older



Photo courtesy of Matt Badolato

Unlike the Florida Keys, lobster aren't tucked into every nook and cranny on the Treasure Coast. They are spread out across the reefs. On a good dive you might get a few — but they're big.

diver has helped me be successful: follow the fish.

It's as simple as it sounds. If you see a school of porkfish — yellow stripes down their side, black bars across their eyes and gills — there is a lobster nearby. Almost guaranteed. If you suddenly come across a flurry of fishy activity — mangrove snapper and black margates scooting in and out of the reef — there is probably a lobster nearby. Life begets life, fish beget bugs.

If you don't find lobster, maybe you'll find gold or silver. The 1715 Treasure Fleet, a combination of 11 Spanish treasure

ships pilfering the New World and returning to Spain, were lost in a hurricane on these same reefs. Treasure hunters have recovered some pricey metal from the wreckage. The Mel Fisher Treasure Museum, just up the road in Sebastian, exhibits some interesting archeology.

But, if you're like me, exploring new places with friends, watching nurse sharks bask under reefs, and cooking up some lobster mac 'n cheese with family . . . then you know what the real treasures are in Life.

Everything else is fool's gold! ●

Ensure future with a marketing plan

By CHRISTY VOGEL
Marketing Direction

How is your business performing? Are you hitting projected goals? Do you have projected goals? Chances are, a business plan helped get you to this point. But, do you have a marketing plan? If you want to take your company to the next level, you need a sound marketing strategy . . . now, more than ever.

A business plan guides the operation of your business; a marketing plan guides the promotion of your business. Both are vital for a successful company.

Every business needs a marketing plan regardless of size. Whether you have a regional staff of 100 or 1,000 employees across multiple states, a marketing plan is required to drive more sales. Without sales, the revenue needed to stay in business long-term doesn't happen.

Unfortunately, as critical as marketing plans are, many business leaders don't allocate enough time and resources to develop and execute them. Great leaders, however, recognize the need to regularly develop a marketing strategy to ensure their companies thrive during the ups and downs of economic cycles.

For example, the recent pandemic created a lot of uncertainty especially within the business environment. Those companies with comprehensive marketing plans in place were more easily able to pivot as new challenges emerged.

A marketing strategy is one of the most important components to business

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growth. Running a business without a marketing plan is like navigating a ship without a compass. A well-researched and carefully thought-out marketing plan can help determine your target market, goals for a specific period, how to acquire new customers, and how to capitalize on growth opportunities.

With a marketing strategy in place, it's easier to adapt during changing circumstances, like a recession—now or in the future—or when a competitor moves into your market. Being prepared enables better decisions during a crisis because you know where you're going and what it takes to get there. A business owner with a plan has a distinct competitive advantage over one who is just "winging it".

Marketing plans not only serve to build your brand they can also protect it from external factors such as a recession, a pandemic, and competitors. Companies that survive in the long run plan for flexibility in response to the unexpected.

Every business owner has a defined set of goals to meet, whether it's reaching a specific level of sales, increasing market share, securing a certain number of leads, etc. Your company's marketing plan serves as a strategic blueprint for achieving those goals.

Once the initial document is prepared, you'll want to make revisions based on regular reviews and changes in your industry. Your plan has to include metrics so you can determine whether it's working. It's also a good idea to schedule review dates with your team before implementing the plan. At least one key benefit of regularly reviewing your activity and results is that you stand more of a chance of reaching your goals. You learn what works and what doesn't.

Think of marketing as an investment, not as an expense; an investment that drives your sales.

Speaking of investment v. expense, a Fractional Marketing arrangement could be a better fit. It may surprise you to learn that utilizing the services of a fractional marketing company can come in at about half the recommended marketing budget guidelines, including the cost of the staff needed to execute your plan.

From strategic planning to skillful implementation, everything needed to keep your brand in the forefront can be acquired from a team of marketing professionals at a fraction of the cost.

This year has flown by but it's not too late to think about developing a marketing strategy so you can hit the ground running in 2023! ●

From GULF Page 4

Transportation's Federal Highway Administration to repair roads and bridges damaged by Hurricane Sally in 2020 and tornadoes that hit a year later. (*Montgomery Advertiser*) www.montgomery-advertiser.com/story/news/2022/08/31/alabama-receives-millions-to-repair-hurricane-sally-damaged-roads-bridges/65465217007/?utm_medium=email.

► The National Labor Relations Board ordered the United Mine Workers of America to pay more than \$13 million in compensation to an Alabama coal company, Warrior Met Coal, where members have been on strike for more than a year, a ruling the union said it would challenge. <https://apnews.com/article/alabama-birmingham-strikes-coal-mining-bf93ed-1497e40ca2d8b44533f99d7431>.

► Alabama Department of Environmental Management awarded 22 recycling grants totaling \$2.3 Million to communities across the state for the 2023 fiscal year. The grants will be used to pay for collection equipment, educational materials, processing equipment such as glass-crushers, and other projects. The funds will benefit nearly 600,000 households in the state, including those in many disadvantaged communities.

Since 2009, ADEM has awarded grants to 230 recipients under this program with grants totaling more than \$23 million over that period. (*Press release ADEM*) <https://adem.alabama.gov/newsEvents/pressreleases/2022/ADEMRecyclingGrantsJuly152022FINAL.pdf>. ●

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Structurally Speaking: Senate Bill 4-D

By LEO CANNYN, PMP, P.E., ENV SP
Principal Project Manager
Beryl Project Engineering

Deteriorating non-commercial condominium buildings are a natural, persistent, and severe problem in Florida. Unfortunately, until lawmakers passed new legislation earlier this year, Florida didn't have statewide inspection requirements for high-rise condominium buildings.

The Surfside Champlain Towers South, a 12-story oceanfront condominium in the Miami suburb of Surfside, brought the issue front and center when it was noted that the building had just concluded its 40-year recertification by inspectors.

Shortly after the collapse that killed 98 people, a federal investigation determined the condo building had substantial concrete structural damage to its pool deck and was overdue for repairs.

Florida Gov. Ron DeSantis has signed an inspection bill that now requires stricter safety mandates for condominiums.

Necessary Changes

Senate Bill 4-D addresses the issues found during the Surfside investigation and requires increased safety measures for all Florida building owners and tenants. Specifically, the changes in the state's regulations address these problems by mandating that only a licensed engineer or architect can conduct structural integrity evaluations, which will occur on a scheduled basis. Previously, lesser-trained inspectors completed these reserve studies, and were only

Senate Bill 4-D is welcomed news. Buildings across Florida are susceptible to not only daily corrosion from humidity and salt, but also to the annual occurrence of tropical storms and hurricanes. It may not be all we need to prevent another collapse, but it's a very strong start. HOAs and COAs need to start now and implement any necessary updates, making any necessary changes needed to protect the buildings and the safety of their tenants.

— Leo Cannyn, PMP, P.E., ENV SP
Principal Project Manager,
Beryl Project Engineering

required to note potential impairment.

To be in compliance with the bill, a structural reserve study must now include an inspection of the roof, load-bearing walls or other primary structural members, floors, foundation, fireproofing, and fire protection systems. In addition, the inspection must cover plumbing, electrical systems, waterproofing, exterior painting, windows, and any other item with a deferred maintenance expense or replacement cost exceeding \$10,000.

Direct Impact on Associations

Senate Bill 4-D includes other changes that directly impact Condominium and Homeowners Associations. Under the new law, COAs and HOAs must have enough money in their reserves to fund all repairs necessary to maintain the structural integrity of all buildings three stories or higher. These requirements must be met by December 2024. Additionally, the structural inspection report is an official record of the Association and must be maintained for 15

years. A tenant or prospective purchaser of a unit has the right to inspect this Milestone Structural Inspection report.

Previously, Associations in Florida could vote to waive their reserves, meaning they didn't have to set aside any funds at all. Instead, many relied on assessments of unit owners to pay for repairs whenever there was a need. For example, if building siding needed to be replaced and the association was short \$250,000, that amount would get divided among unit owners, who might need to use savings or even take out a loan to cover costs.

As a result, there is renewed concern for HOA and COA directors and officers responsible for making decisions about the inspection and maintenance of the Association's buildings and equipment. Any mismanagement of maintenance funds can result in the officers being held liable for damages.

Compliance Timeline

Associations existing on or before July



1, 1992, which are controlled by unit owners other than the developer, must have a structural integrity reserve study completed by December 2024 for each building that is three stories or higher.

For buildings within three miles of the coastline, each building in the community that is three stories or higher must be inspected by Dec. 31 of the year in which the building turns 25 years old and then every 10 years thereafter. Buildings outside three miles of the coastline must receive an inspection on the year in which the building turns 30 and again every 10 years thereafter.

While some Associations are engaging with engineers now in order to meet the new law/provisions, others are planning to wait until after the 2023 legislative session next spring. They want to see if the new law may be adjusted.

Senate Bill 4-D is welcomed news. Buildings across Florida are susceptible to not only daily corrosion from humidity and salt, but also to the annual occurrence of tropical storms and hurricanes. It may not be all we need to prevent another collapse, but it's a very strong start. HOAs and COAs need to start now and implement any necessary updates, making any necessary changes needed to protect the buildings and the safety of their tenants. ●

Cannyn is a licensed professional engineer and certified master inspector with 20+ years of experience in building inspections.

Marine debris one of most pervasive global threats

By TARA KOK, Tampa Bay Watch Restoration Specialist

Marine debris is a global concern with local consequences and requires effective litter prevention and removal programs to address the ever-growing challenge.

All types of marine debris, including single-use plastics, monofilament fishing line, and derelict lobster/crab traps are a persistent issue leading to a wide variety of negative ecological impacts.

Plastic debris leads to deleterious effects on the environment by destroying habitats and affecting wildlife, due to entanglement, ingestion, and interactions such as impacting light penetration of bottom dwelling organisms (benthic communities). When improperly disposed of, single-use plastics can accumulate and persist in our marine environments for years, eventually breaking down into microplastics, a predominant subset of plastic pollution. Recently, University of South Florida (USF) research has found that Tampa Bay alone contains 4 billion particles of microplastics. It is of utmost importance to tackle marine debris at the source, which most often originates from land.

Monofilament line and other tackle have great fishing utility, but frequently enter Florida's aquatic systems as a result of incidental snags or improper disposal. When left in a marine environment, fishing line poses great threats of acute or long-term injuries and/or death to wildlife, especially breeding and migratory birds.

FWC biologists have identified fishing line as the predominant killer of adult Brown Pelicans, and Tampa Bay and the Gulf Coast are home and migration grounds for more than 40,000 breeding pairs and 25 different bird species that nest annually.

The long decomposition rate (more than 600 years) of monofilament fishing line creates potential traps leading to an untold number of entanglements as well as accidental hook and ingestion injuries.

Traps become derelict when accidentally or intentionally abandoned. Owners may no longer be able to locate their traps if the identifying float becomes separated, or if the trap itself moves due to storms or human activities.

Lost and abandoned traps can remain in the environment for years resulting in accidental bycatch of a wide variety of marine organisms including recreationally and commercially important species. Manatees, dolphins, and sea turtles can also become entangled in trap line causing injury or death. Further, this type of debris has the potential to damage sensitive habitats such as seagrass or natural hardbottom environments and poses navigational hazards to boaters as well.

Tampa Bay Watch has several marine debris prevention projects and education initiatives to engage volunteers and mitigate ocean pollution, as well as protect our marine habitats and the wildlife that depend on them. Learn how to get involved at tampabaywatch.org. ●



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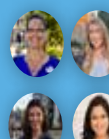
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From CAREER Page 12

members.

Our industry is strong because our associations are strong. Your careers are strong to the extent you serve your industry. Don't limit that value within your company; you will benefit outside your firm at the association level as well. Grow stronger through peer-to-peer interaction. Let's continue to cooperate and find the common-sense, best-case scenario solutions for environmental policy and legislative affairs in Florida.

Here is my advice for advancing your career:

- Write articles for the *Florida Specifier*.
- Ask to represent your firm at conferences.
- Get involved in industry associations.
- Speak at conferences.
- Submit blogs on LinkedIn and other forms of social media.
- Identify a niche specialization.

I have enjoyed environmental forensics and environmental policy matters with emphasis on legislative affairs as niche specializations. What are yours? Bring them to the association that best matches that skill.

Make friends with your peers at industry association meetings and conferences.

The ideas that come through brainstorming with fellow leaders in industry will help you develop your career. Ideas that emerge from communications and peer discussions have led to most of the policy and legislative initiatives that I have been able to develop over the years.

Please join our efforts. I am the chair of the environmental committee on the Florida Ground Water Association and technical committee chairman for the Florida Brownfields Association.

There are many other exceptional environmental organizations in Florida such as Environmental Professionals of Florida, Florida Association of Professional Geologists, Florida Engineering Society, Florida Association of Environmental Professionals and dozens of other groups associated with water, stormwater, and environmental resources. Find the one that suits your skill set and get involved. You'll be glad you did.●

Steve Hilfiker can be reached at steve@ermi.net.

**Sample diet for a Burmese python in the Florida Everglades
to grow to 13 feet in approximately 5-7 years.**

Source: Skip Snow, Everglades National Park and Dr. Stephen Secor, University of Alabama.

SFWMD.gov

"In partnership with the Florida Fish and Wildlife Conservation Commission, the South Florida Water Management District is removing about 60% more pythons each year under the leadership of Gov. (Ron) DeSantis," said South Florida Water Management District Executive Director Drew Bartlett. "The Python Challenge is yet another way to get people directly involved in the protection and stewardship of the Everglades. We continue to expedite Everglades restoration efforts thanks to the support of Gov. DeSantis, and we'll continue doing everything we can to protect this important ecosystem."

More than 17,000 pythons have been removed during the past 20 years as a result of the teaming of SFWMD and FWC. Unfortunately, estimates indicate more than 100,000 pythons currently populate the Everglades.

More than 800 participants from 32 states and Canada signed up to take part in

the 10-day challenge to remove Burmese pythons. Passing a mandatory online training course is required for registration. More than 500 people also completed hands-on, optional safe-capture training instructing participants how to identify, locate, and safely and humanely capture the pythons.

Participants compete in professional and novice categories and can win cash prizes up to \$2,500 for removing the most pythons. Additional awards are given for the longest pythons removed in both categories. This year's award announcements are still pending.

The public can help control invasive species by reporting non-native fish and wildlife to the FWC's Invasive Species Hotline at 888-IVE-GOT1 (888-483-4681), by reporting sightings online at IveGot1.org, or by downloading the IveGot1 smartphone app.●

Green industry yet to define and practice sustainability

By **JOE SAMNIK**
Forensic Arborist

A funny thing happened on the way to the marketplace. We forgot to define something. We use it every day in our marketing and advertising, but nobody knows the definition. Worse yet, we claim to be practicing it, but we're not. The building blocks necessary to practice this undefined concept are either completely misunderstood or totally lacking in fundamental knowledge. Those building blocks are then assembled to define and present a work product to our clientele, which will and does fail.

The word is *sustainability*.

And collectively, the green industry cannot define it and therefore cannot put it into practice. Yet our advertising and claims all use the word. If the product or the claim of the product is not sustainable, it won't sell. Everything has become sustainable.

The defects are being designed into our work products. No aspersions or finger-pointing; however, the first building block in defining sustainability and putting it into practice begins with the specifications and landscape notes that dictate the conduct of the installation and the maintenance.

If we are going to make the change, the change must start with us. All of us. And the first professional up to bat is the one who creates the Landscape Notes and other documentation that dictate *what, how,* and hopefully *why,* sustainable acts must be put into place.

Design criteria must begin to include soil pH, cation exchange capacity, and resultant fertilizers and fertilization. Too many green industry professionals do not grasp the basic meaning of soil pH and its effect in and on plants.

There is a basic knowledge of what a soil pH should be, but getting there is being completely mismanaged and perpetrated by bad science. Soil pH can't be changed to any appreciable degree or amount of time. It can, however, be managed.

If we were farm-producing edibles, different story. But we are not growing food.

We are growing a way of life to an appreciable degree of beauty, but, alas, not sustainability. The matter of soil pH is being conveniently handed off by one professional group to other professional groups who have no better idea of what it is or how to manage it. The problem only passes from one professional desk to a different professional desk, and the problem never gets solved.

Cation exchange capacity (CEC) is seldom, if ever, mentioned in design criteria. Yet this phenomenon will dictate the fate of critical nutrients in soils, either applied or inherent by nature. Knowledge of CEC is necessary — what it does in soils, and how to manage in a better fashion than ignoring it. Get the soil right should be the

What is sustainability?

According to The University of Florida's Office of Sustainability, sustainability is meeting contemporary needs without compromising the ability of future generations to satisfy their needs.

standard-bearer for all professional work products at the fundamental level.

Fertilizers and fertilization are treated much like soil pH issues — from one desk to another. The driver of our collective specificity must grasp, or seek others to grasp for them, the basic principles of fertilization. Fertilizer ratios must be differentiated from fertilizer analysis, driven by rates of application, all of which are missing in today's professional work products.

Like a three-legged stool, which of the three legs is most important? It is a learned circle that must be completed before sustainability can be stamped onto our work products. And it must be a collaborative effort. The science is there. All the questions have already been answered. But no one person knows it all.

When these three sciences are brought together under one work product, sustainability shall be realized. The result will be commercial landscapes that can be fertilized once every other year with the highest of curb appeal. Pest control would be an anomaly. Water consumption would be cut in half at the very least. Therein lies the definition of a sustainable landscape that can be realized in today's marketplace.

The fact is that it already has been realized in today's marketplace. It's all about science.

The wonderful thing about science is that whether you like it or not, it's true. Beautiful and creative landscapes are at this time being fertilized once every two years with no insects or diseases at one-half the water consumption over traditional landscapes being created in today's marketplace.

It is therefore the Landscape Notes on the landscape architect's work product that must first change. Handing the problems off to the landscape installation contractor only exacerbates an already unacceptable situation. The rewards for doing the assignment based in science are unimaginable and would benefit not only the practitioner, but our industry and the environment as well. All ships rise at high tide.●

Joe Samnik is entering his 57th year of practice as a horticultural consultant and testifying subject matter expert witness in the field of horticulture and arboriculture.

Have your specifications written and/or reviewed by a professional specification writer or consultant.

It is the only way you can be assured that you are providing a specification that can be competitively bid and delivers the outcome you desire.

You are the one that is liable . . . don't risk it. It will cost you far more time and money in RFIs, substitutions, addenda, meetings, misunderstandings, re-work, change orders and lawsuits.

Just remember . . . what you publish and distribute is a direct reflection of the professionalism of your firm.●

From SPECIFICS Page 8

Manufacturer's pre-written specifications are good . . . but that's only half the battle

Manufacturers often provide pre-written guide specifications on their websites and most are written by quality specification writers, but they are slanted toward that manufacturer's product and don't provide a selection of products for competitive bidding and availability.

That doesn't mean they are bad . . . it just means they are a piece of the puzzle to developing a well-rounded, complete, and concise specification.



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After the storm: Hubs answer power, shelter needs

By LINA ALFIERI STERN
Correspondent

According to *Resilience-Hub.org*, Community Resilience Hubs are defined as community-serving facilities augmented to support residents, coordinate communication, distribute resources, and reduce carbon pollution while enhancing quality of life.

Commonly centrally located in urban neighborhoods to serve the highest number of citizens, hubs are built-out, ideally, around five foundational areas of focus: strengthening the building structure, ensuring the availability of off-grid power, ensuring hub staff and volunteers are trained in the operations of the hub, providing a vast array of services to the community, and ensuring the availability of a working communication structure in emergency situations.

Resilience Hubs are being built-out across the nation and there are many resources for Community Resilience planning, including the Department of Energy, which has devoted a planning and funding resources webpage to the issue at [Energy.gov](https://www.energy.gov).

Across the Gulf South, at least 34 Community Resilience Hubs are being built-out in the next year, and another 100+ are planned, to address the issue of energy resilience in the face of extended power outages of the public grid.

These centers are equipped with whole-building back-up power systems, usually but not always solar and battery combinations, that produce energy when the grid is down and provide phone charging stations, water and food, and other needed services.

These centers open to the community after storms and power outages and act as neighborhood resource hubs that provide relief to affected citizens. Texas, Louisiana, and Florida all have resilience hub projects that, although different in scope and nature, address the drive to provide innovative solutions to storm communities.

In Florida, Orlando already has built and placed solar powered kiosks in several locations distributed across town where citizens can have access to electrical power.

Additionally, the city government was awarded a \$2,850,000 grant in April 2021 by the State of Florida's Department of



Courtesy photo

A solar kiosk in Willows Park, Orlando, Florida.



Economic Opportunity, through HUD's Community Development Block Grant (CDBG) Mitigation General Infrastructure Program, to transform six existing community centers into Resilience Hubs. The upgrades to the buildings will include electrical rewiring, the addition of generators, and the improvement of HVAC systems.

In the aftermath of a hurricane, nearby residents will use the resilience hubs to charge phones, access Wi-fi, receive food and water and other supplies, apply for benefits, and connect with their neighbors as well as far-away loved ones.

Ian Lahiff, of Orlando's Office of

Sustainability and Resilience is the point of contact for this project who can be reached at ian.lahiff@cityoforlando.net. In a July 2022 DOE webinar, Lahiff stated the City of Orlando would be issuing RFPs for this project in the coming months of 2022.

In Louisiana, the ultimate plan is to build a connected network of over 85 Community Resilience Hubs, with a pilot of 24 locations across the state currently being implemented. Together New Orleans (TNO), a non-profit consortium of over 30 mostly faith-based organizations, has spearheaded the project and to date has fundraised \$10.1 million of the

\$13.8 million needed for the pilot phase. 127Energy (a B Corporation) is providing the technical support and implementation for the pilot.

Called Community Lighthouses, each Louisiana location will be outfitted with commercial-scale solar and battery backup and will provide power, communications, food and water, health/medical, and security services.

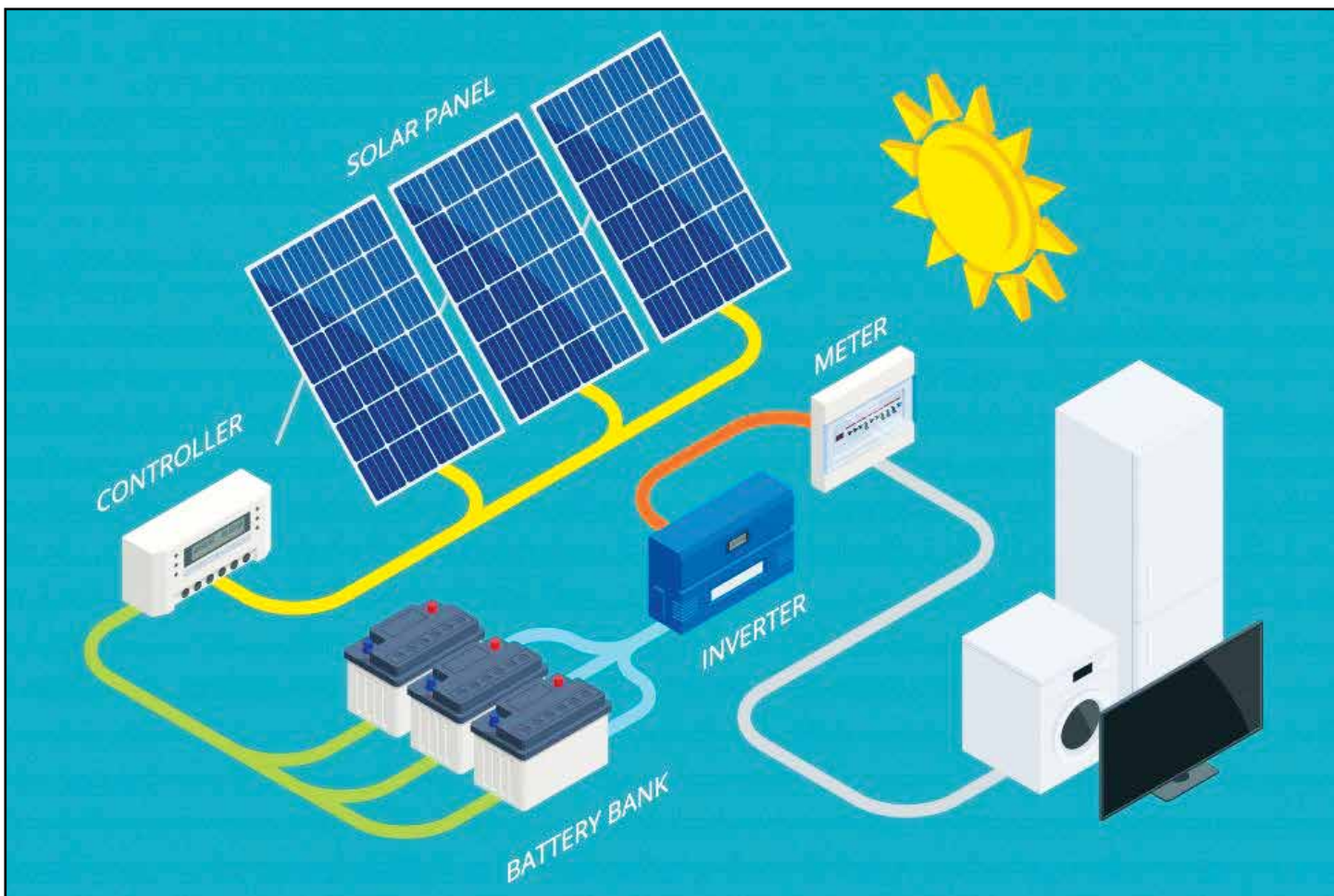
As these centers are already in use year-round for various community activities, a big added benefit is the energy cost savings that will be realized by each location.

For example, one location, New Wine Church in Laplace, Louisiana, is estimated by its pastor to save \$3,000 a month in electricity charges once the system is up and running because the solar/battery combination will provide free power throughout the year.

The program in Texas is based in Austin and was allocated \$3 million by the city council from its American Rescue Plan Act COVID-19 relief funds. The six planned sites would function out of existing city, county, and school properties.

The city of Austin is working with the Austin Independent School District and other community partners to pilot the Resilience Hubs in Austin's Eastern Crescent. With the pilot program still in the planning stage, there is an expectation to expand the network to 30 hubs by 2025.

Community Resilience Hubs reflect a new direction in how communities react to hurricanes by encouraging a model of sheltering-in-place and setting up and relying on independent sources of electrical power. Frequent and extended grid power outages, as well of the unavailability of gasoline, after storms makes solar and battery combinations the preferred solution for many of these projects. ●



Sarasota Bay has become rebounding ecosystem

By DAVID TOMASKO, PH.D.,
Executive Director,
Sarasota Bay Estuary Program

Sarasota Bay is the oldest of four designated “estuaries of national significance” in Florida, preceding Tampa Bay, Charlotte Harbor, and the Indian River Lagoon. As such, the Sarasota Bay Estuary Program (SBEP) has a thirty-year record of diagnostic studies, water quality monitoring, seagrass mapping and studies on the status and trends of metals contamination, fish populations, etc. to draw upon in developing resource management paradigms.

Due in part to this large body of existing information, the SBEP has pivoted away from studies and planning and is firmly in the “project implementation phase” of ecosystem management.

More than 20 years ago, it was established that the health of Sarasota Bay was adversely impacted by nitrogen loads.

Early efforts found that sampling the water column alone would likely not result in an accurate measure of ecosystem health, as nutrient-fueled algal growth included macroalgae, large tumbleweed-types of seaweed that are not captured with sample collection bottles. As such, it was concluded that a more holistic measurement of bay health must include more than the water column alone.

Additionally, it has been known for many years that the nitrogen load delivered to Sarasota Bay is two to three times higher than what was originally loaded

More online
The Sarasota Bay Estuary Program is dedicated to restoring Sarasota Bay. It strives to improve water quality, increase wildlife habitat, and enhance the natural resources of the area for use and enjoyment by the public. The health of Sarasota Bay has seen significant gains since it was named an estuary of national significance by the U.S. Congress in 1989. SBEP is one of 28 National Estuary Programs in the United States and is a member of the Association of National Estuary Programs.
For more information on the Sarasota Bay Estuary Program, go to www.sarasotabay.org.

into nearshore waters, a finding consistent with similar work conducted for Tampa Bay, Lemon Bay, and Charlotte Harbor. In Southwest Florida, it has been shown that while humans don’t “cause” red tides, human-linked nitrogen loads can make red tides worse when they are advected close to shore. When combined with the finding that nutrient loads have increased above and beyond natural levels by perhaps two to three times in much of Southwest Florida, it is of little surprise that red tides could be a larger problem in recent years

Year	Palma Sola	Upper Bay	Roberts	Little Sarasota	Blackburn
2006	3.67	3.50	3.50	3.75	3.75
2007	3.00	3.25	4.00	3.75	3.75
2008	3.67	3.00	3.00	3.25	3.25
2009	3.67	3.25	3.25	3.50	3.00
2010	3.67	3.75	3.00	2.75	2.75
2011	4.00	3.50	3.00	2.75	2.50
2012	3.00	3.25	3.25	3.00	3.25
2013	3.67	3.00	2.50	2.25	2.25
2014	4.00	3.50	2.50	2.50	2.25
2015	3.67	3.25	2.00	2.25	2.00
2016	3.67	2.75	1.75	2.00	2.25
2017	3.67	2.50	2.00	2.25	2.00
2018	4.00	2.50	2.00	1.50	1.75
2019	3.67	3.00	3.25	1.75	1.75
2020	3.67	3.00	3.00	2.25	2.25
2021	3.75	3.75	3.75	2.75	3.00

Image courtesy of Sarasota Bay Estuary Program

Ecosystem health report card for Sarasota Bay. Values are scored from 1 (worse) to 4 (best) and color coded. Conditions considered “good” are colored blue and green. Conditions considered as requiring caution are colored yellow. Red represents worst conditions.

than 50, 100, or even 1,000 years ago.

With this information as background, the SBEP has worked closely with its citizen and technical advisory committees to develop a multiparameter report card on ecosystem health.

The report card includes two measurements of the water column itself: Total Nitrogen (TN) and the photosynthetic pigment found in phytoplankton, Chlorophyll-a (Chl-a) as well as seagrass coverage and the amount of macroalgae in the bay. Consistent water quality data for Sarasota Bay exist back to the early 1990s, while seagrass maps date back to the late 1980s.

However, data on macroalgae only date back to 2006. Since macroalgae have been shown to be important indicators of ecosystem health, the SBEP’s report card only goes back to 2006.

After much review, a reference period of 2006 to 2012 was chosen for the following reasons: 1) across the bay, concentrations of TN were lower than in later years, 2) no bay segment exceeded

FDEP’s criteria for Chl-a levels during those years, 3) lower levels of macroalgae were found in the bay, and 4) across the bay, seagrass coverage increased by 28% between 2006 and 2012.

The results of the report card for Sarasota Bay showed that different bay segments have different health outcomes and different patterns over time (Figure 1).

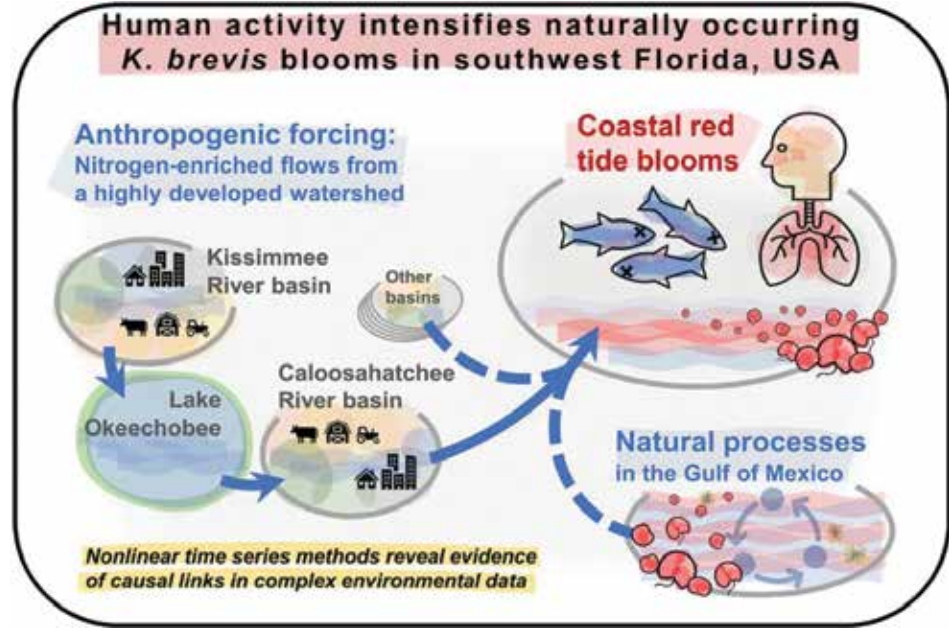
Across the five bay segments, Sarasota Bay was indeed a healthy system between 2006 and 2012. Palma Sola Bay continues to be healthy. The upper bay was healthy until 2017 to 2018, which reflects the impact of the 2016 red tide, 2017’s Hurricane Irma, and a stronger red tide in 2018. The 2018 red tide was accompanied by the wettest May in over a century, which loaded Sarasota Bay with a large slug of urban stormwater runoff at the end of the dry season, followed by the worst year on record for the quantity of overflows from wastewater treatment systems. The lower three bay segments shifted to cautionary conditions in 2013, likely reflecting a multi-year period when nutrient-rich treated wastewater overflows exceeded 750 million gallons.

However, recent results show that when wastewater overflows are reduced, and with additional attention to stormwater runoff, over-fertilization of residential yards, and other stressors, the bay’s water quality can recover quite quickly, which reflects the fairly high flushing rate of most of Sarasota Bay.

In 2021, water quality data showed that the annual average concentrations of both TN and Chl-a were at least the lowest in five years, and in some bay segments they were lower than at any time over the past 15 years.

Our recently completed pollutant loading model shows that for Sarasota Bay to return to the healthier conditions that existed in 2006 to 2012, a 20% reduction in the loads of Dissolved Inorganic Nitrogen (DIN) are needed. The DIN reduction we are targeting to get a 20% reduction is about 12 tons per year.

Recent improvements to wastewater treatment in our watershed indicate that we are perhaps well on our way to meeting that 12 tons of DIN reduction already, which gives us hope that Sarasota Bay’s recovery is just starting, with more good news on the horizon.●



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Recycling a challenge for solar power components

By TAMARA MAYER, EP

The solar power industry is rapidly growing. With advancements, renewable energy is becoming less expensive than coal-powered electricity. Lazard's annual Levelized Cost of Energy (LCOE) analysis reports solar photovoltaic (PV) and wind costs have been dropping annually. Costs for utility-scale solar have been falling more rapidly (about 11% per year) compared to onshore wind (about 5% per year) over the past five years.

Meanwhile, coal and nuclear costs have decreased by 9% and increased by 23%, respectively. Even without accounting for current subsidies, renewable energy costs can be considerably lower than the marginal cost of conventional energy technologies. The Solar Investment Tax Credit (ITC) has provided industry stability and growth since its initial passage in 2006. The residential and commercial solar ITC has helped the U.S. solar industry grow by more than 10,000%, with an average annual growth rate of 50% over the last decade alone.

How many solar panels do we need?

Starting with some conservative assumptions from a 2013 National Renewable Energy Labs (NREL) report, we know that it takes, on average, 3.4 acres of solar panels to generate a gigawatt hour of electricity over a year. Given the U.S. consumes about 4 petawatts of electricity per year, we need about 13,600,000 acres or 21,250 square miles of solar panels to meet the total electricity requirements of the United States for one year.

This may seem like an impractically large amount of land, but not when you put it in perspective. In comparison, 40,223 square miles is the size of the land leased by the oil and gas industry (according to the US Bureau of Land Management). The U.S. has 3,797,000 square miles of land. Only about half a percent of that would be needed to provide enough solar energy to power the country.

In determining a very rough estimate to the number of solar panels for 13,600,000 acres, there are many considerations. Depending on different environmental and construction factors, and "semantics", the wide-ranging answer is 3,225 panels cov-



Many of a solar panel's components can be recycled. Glass composes most of the weight of a solar panel (about 75 percent), and glass recycling is already a well-established industry.

Photo courtesy US EPA

ering approximately 5 acres. So, hypothetically, there is a potential of 8,772,000,000 solar panels that eventually are installed to meet the electricity demand of the U.S.

With a lifetime of about 30 years on average, crystalline silicon solar panels don't become obsolete quickly. However, given the rapid expansion of the solar industry, the number of solar panels needing to be recycled or disposed of in the coming years will continue to increase. More and more panels will reach the end of their life each year, and even now, old solar panels are beginning to become a problem. In fact, if recycling processes are not put in place, there could be 60 million tons of PV panel waste lying in landfills by the year 2050; since all PV cells contain a certain number of toxic substances, that would truly become a not-so-sustainable way of sourcing energy.

What can recycling solar panels offer?

Recycling can offer two benefits. Besides environmental protection, recycling solar panels will be economically impactful as well. Some of the rare elements in photovoltaic (PV) cells like gallium and indium are being depleted. If we were able to recover those elements, we can conserve the limited amount available and continue to use them for solar panels and other products. Furthermore, a 2016 study by the International Renewable Energy Agency (IRENA) estimated that \$15 billion could be recovered from recycling solar modules by the year 2050.

So, What's the Problem?

The difficulty with recycling solar panels isn't that the materials they are made

from are hard to recycle; rather, it's that they are constructed from many parts all used together in one product. Separating those materials and recycling them each in a unique way is a complex and potentially expensive process. NREL says that it costs about \$15-\$45 to recycle a silicon PV module in the U.S., but only \$1-\$5 to dump it in a landfill. For that reason, it is necessary that design teams and recycling units collaborate closely so that the ability to recycle is ensured by mindful eco-designs.

There are two main types of solar panels requiring different recycling approaches. Both types — silicon-based and thin-film based — can be recycled using distinct industrial processes. Recycling solar panels is a relatively complex task because they contain many different types of materials. Panels contain metals, such as lead, copper, gallium, and cadmium; an aluminum frame; silicon solar cells; and synthetic material that encapsulates the silicon. The various materials must be separated to be properly recycled. Undamaged solar cells, for example, can often be recovered and reused in new products.

What can solar panel recycling look like?

From a regulatory aspect, PV panel waste still falls under the general waste classification. An exception exists at EU-level, where PV panels are defined as e-waste in the Waste Electrical and Electronic Equipment (WEEE) Directive. The PV panel waste management is thus regulated by this directive, additionally to other legal frameworks.

In Europe, the solar cell manufacturers are bound by law to fulfill specific legal requirements and recycling standards in order to make sure that solar panels do

not become a burden to the environment. Photovoltaic producers collaborate with governmental institutions and have come up with a few ways to tackle solar waste.

PV Cycle, a European solar panel recycling association, developed a mechanical and thermal treatment process in 2017 that achieves a 96 percent recovery rate for silicon-based photovoltaic panels. The remaining 4 percent is utilized in an energy recovery process, using a waste-to-energy technology. Non-silicon-based solar panels can have a recovery rate of up to 98 percent.

What's the solution?

With development of PV recycling, not only will more green job opportunities be created, but also recycling could provide about \$15 billion in recoverable value by 2050. This influx will make it possible to produce 2 billion new panels without the need to invest in raw materials. This means that there will be the capacity of producing around 630 GW of energy just from reusing previously used materials.

While solar panel recycling isn't widely available in the U.S. for all the components, there's still a little time before the number of panels needing to be recycled gets too high. New regulations in Washington State stipulate that from July 2023, PV modules cannot be sold without the manufacturer or retailer having a state-approved plan for end-of-life reuse or recycling. It is also important to use whatever tools we have today to tackle the rising tide of waste. It would be better to at least focus on the top four constituents in mass composition and value — aluminum, glass, silicon, and silver, which is a lot better than burying the whole thing. Groups such as Solar Energy Industries Association (SEIA) and Recycle PV are doing important groundwork for the industry, but there's more to do in years to come. ●

Tamara Mayer is an environmental professional with more than 30 years of consulting experience certified as an ecological restoration practitioner (CERP) and a qualified environmental professional (EP) with an extensive background in ecological investigations and environmental services.



What to ask when choosing a recycler

LEARN the basics.

Can the recycler give you a general description of its business, including a point of contact, number of employees, years in business and ownership history, site information and history, summary of operations, services offered, etc.?

Can the recycler provide the facility's compliance record with federal and state environmental and occupational safety regulations? Does the facility's record indicate a commitment to sound environmental stewardship?

UNDERSTAND the recycling process.

Does the recycler normally accept the materials you want recycled?

After receiving your materials, does the recycler track them through its process?

Can the recycler describe its processes and procedures for recycling, reuse, or resale?

Does the recycler have environmental, health, and safety management systems in place to ensure environmentally sound management practices?

ASK about what happens afterwards.

Is there a reliable market for the saleable products or intermediates that are made from recycling your hazardous secondary material?

Are residuals, if any are generated from the recycling process, managed in a manner that is protective of human health and the environment?

Can the recycler provide names and locations of businesses, landfills, or incinerators to which it sends products and/or residuals?

Can the recycler supply certification of final disposition for your materials, if necessary?

CONSIDER a few other things.

Are you interested in verifying information through an onsite evaluation, such as an environmental compliance audit? Do you want to check the facility's record in EPA's public databases (such as <http://www.epa-echo.gov/echo/>) or state databases?

Does the recycler maintain appropriate environmental liability insurance, and are mechanisms in place to ensure clean-up costs would be covered if the facility unexpectedly closes or has to perform an environmental clean-up?

WANT MORE INFORMATION?

Visit EPA's general hazardous materials recycling Web site at <https://www.epa.gov/hw/regulatory-exclusions-and-alternative-standards-recycling-materials-solid-wastes-and-hazardous>
Review a recycler's compliance status with EPA at <https://www.echo.epa.gov>

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With the help of generous community donations, the Academy allows students to develop academic, laboratory, and field skills needed to be successful in environmental careers.

By supporting our future environmental leaders and their early career development, we invest in the health of Florida's complex ecosystems and secure a legacy for future generations. The Academy, which is located at Forest Hill Community High School in West Palm Beach, is committed to providing students with hands-on experience in environmental science, preparing them for the challenges of an environmentally responsible world.

The Academy is named for Meg Gale, an early benefactor of the program and creator of an endowment at the Community Foundation of Palm Beach and Martin Counties, which helps sustain the Academy.

The Friends of Gale Academy organization was established as a 501(c)(3), non-profit organization to support the Academy.

Learn more

To learn more about becoming a sponsor or helping to support the Academy, contact:

Alfred J. Malefatto, President and Scholarship Committee Chair, amalefatto@llw-law.com.

Holly Andreotta, Vice President and parent of an Academy student, hollyandreotta@gmail.com.



The Board members include a range of environmental professions including: water resource scientists, engineers, hydrogeologists, science teachers, wildlife biologists, attorneys, and former students. Some of these former students have obtained their degrees and returned to serve the Board and/or also serve as environmental leaders within our community.

Field studies are an integral part of the environmental science curriculum and would not be possible without the support of the Friends. Each field study is tied to curriculum being covered in Academy courses and helps to build student skills and experiences.

The Friends have funded equipment purchases for the Academy, such as computers and lab equipment, which are

not typically available through the public school system. Thousands of dollars are required annually to fund the field studies making it possible for them to be part of the student curriculum.

In addition to program funding, the Friends award annual college scholarships to graduates. Since 2000, the Friends have awarded over \$130,000 in college scholarships to Academy students who may otherwise be limited financially, putting their education in science and technology at risk.

The two most prestigious scholarships are the Nicholas Megrath Scholarship and the Leah G. Schad Scholarship, which are awarded to students based upon their academic excellence, involvement in extracurricular Academy activities, and financial

need.

The Nicholas Megrath Scholarship fund was named in honor of an Academy student who was tragically murdered in 1999 several weeks before graduating.

The Leah G. Schad Scholarship fund was named for a former Friends Board member and supporter, who was a community activist and local environmentalist, and one-time Board member of the South Florida Water Management District.

The Friends also award scholarships funded by the Sierra Club, the Treasure Coast Chapter of the Florida Association of Environmental Professionals, and alumni, as well as personal contributors.

The Friends would like to create additional academic and field study scholarships with community stakeholders to support the Academy's mission of experiential education. Scholarship sponsors can draft their own scholarship requirements and amounts.

Sponsors are encouraged to join the Scholarship Committee to review and award scholarships, as well as present the awards at the Academy's Annual Nicholas Megrath Awards Banquet and Dinner, typically held in April.

Special recognition will be given to scholarship sponsors at the Awards Banquet, as well as on social media. This event is well-attended by the South Florida environmental community. ●

Vertical Bridge achieves carbon neutrality for 3rd-straight year

STAFF & WIRE REPORTS

Vertical Bridge, the largest private owner and operator of communications infrastructure in the United States, announced that it has realized 100% carbon neutrality for the third consecutive year.

The company began a proactive review of its environmental footprint in 2020 which resulted in its initial CarbonNeutral Certification that year and the subsequent renewal in 2021.

"U.S. carriers and other telecommunications entities are working to reduce their environmental impacts as well as the impact of entities in their value chain,

and Vertical Bridge is focused on being a partner in this journey," said CEO and Co-Founder Alex Gellman. "Environmentally-conscious initiatives have been a core part of our daily operations since our founding in 2014, and we are committed to remaining an industry leader."

Vertical Bridge currently supports two projects in North America that reduce and remove greenhouse gases and are focused on nature-based climate solutions and recovery, including Mississippi Valley Reforestation, which reforests more than 2.4 million acres of native woodland in the Lower Mississippi Alluvial Valley, and Darkwoods Forest Conservation, which protects 156,000 acres of boreal forests in

British Columbia, Canada from environmental threats.

The company also supports wind power projects in Mexico and several global renewable energy projects. In April, Vertical Bridge partnered with the South Florida Audubon Society for a coastal restoration project to support its conservation work in-state.

"Carbon neutrality is vitally important, but we have extended our focus to

include active pursuit of a variety of projects across our operations that reduce our impact on the environment and our electricity consumption," added Gellman.

Innovative Projects

Among the energy-saving projects Vertical Bridge has underway are an

To BRIDGE Page 22

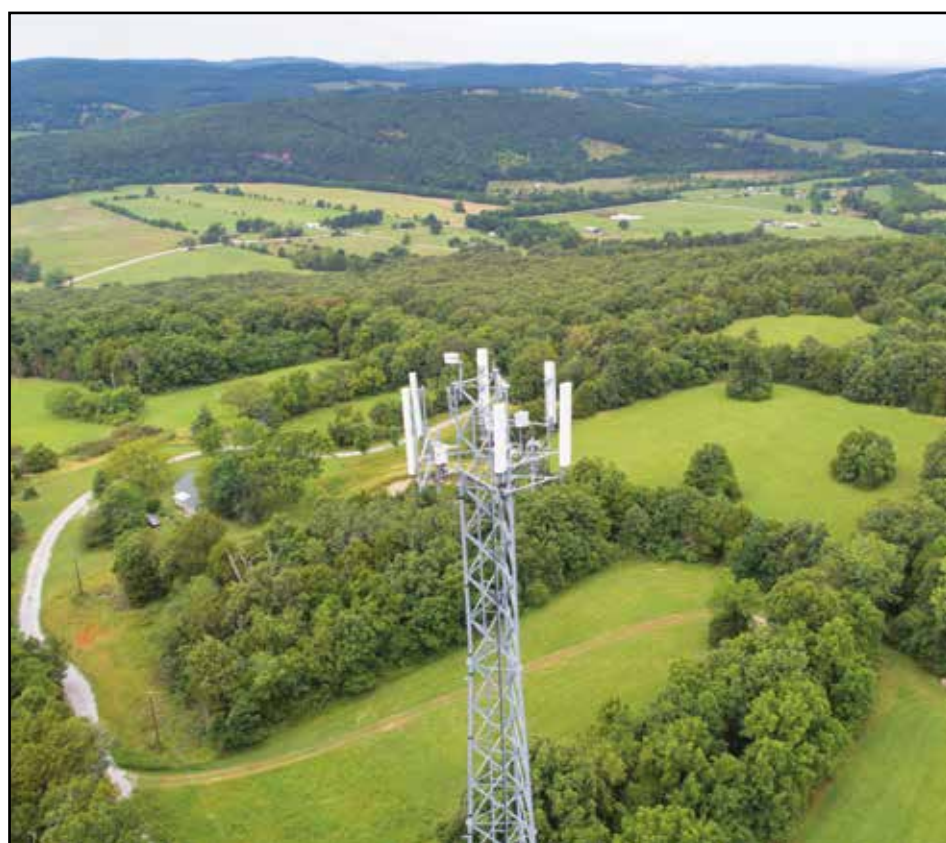


Photo courtesy of Vertical Bridge

Vertical Bridge's goal is to provide service and best-in-class infrastructure solutions in a dynamic market. To that end, Vertical Bridge has rapidly become the largest private owner and operator of communications infrastructure in the U.S., with more than 320,000 sites nationwide, including wireless and broadcast towers, rooftops, convenience stores, land parcels, utility structures and billboards.



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From FLORIDA NOTES Page 3

taneously under construction in fall of 2020.

“We are cementing Florida as a national leader in solar energy as we continue the largest solar buildout in the country – providing our customers with clean, reliable and affordable energy,” said FPL Chairman and CEO Eric Silagy. “This is an important milestone for our communities, the economy, and the environment. Generating cost-effective solar energy is an integral piece of our Real Zero goal — to eliminate carbon emissions and create an even more resilient and sustainable energy future for our customers.”

The new solar energy centers will add about 3.1 million solar panels to the state. The 16 new solar energy centers are expected to create 4,000 solar jobs across Florida. Each site will employ 200 to 250 workers at peak construction. In addition to this influx of workers infusing dollars into local economies with the purchase of goods and services, each solar energy center will generate hundreds of thousands of dollars in local tax revenues annually.

County deploys first electric powered waste collection vehicle

The Miami-Dade County Department of Solid Waste Management (DSWM) recently introduced its first-ever electric-powered waste collection vehicle at its waste-to-energy Resources Recovery Facility (RRF), in Doral. The new vehicle will collect waste in an area surrounding the RRF. The vehicle will then charge overnight using electricity produced on-site via waste incineration.

Closing the loop, the vehicle will be powered by the waste it collects.

Miami-Dade County noted the electric waste collection vehicle features dual electric motors that produce 448 continuous horsepower and 4,051 lb.-ft. of peak torque from zero RPM. Four NMC (Nickel Manganese Cobalt Oxide) lithium-ion batteries provide power, which is

recovered while driving via the vehicle’s two-stage regenerative braking system.

The total vehicle cost is \$688,619, including \$39,465 for the charging system and a 60 month/250,000 service agreement for \$33,000. Routine maintenance will occur yearly rather than quarterly, as is customary with vehicles powered by fossil fuels.

At current fuel pricing levels, DSWM anticipates a return on investment by year five (year six if fuel prices decrease). The truck has a useful life of seven to eight years. The immediate environmental benefits include the vehicle’s zero emissions and noise reduction typically associated with diesel engines.

UF Global Food Systems Institute to take land-grant mission worldwide

The University of Florida has announced the creation of the UF/IFAS Global Food Systems Institute, which will expand the scope of the existing Food Systems Institute to achieve global pre-eminence in all three components of the land-grant mission.

The Food Systems Institute was created in 2020 to bring brought researchers from across disciplines together to tackle challenges in sustainable food production and feeding a world population projected to reach 10 billion people by 2050.

“The land-grant mission is about developing innovative ways to help communities prosper in the United States, and UF/IFAS is a shining example of this mission in action. As we continue to support Florida farmers and communities, our work must recognize that Florida is part of a complex, interconnected global food system and that innovations in sustainable food production will help all of us,” said J. Scott Angle, UF senior vice president of agriculture and natural resources and the leader of UF/IFAS.

Adegbola Adesogan, who has led the FSI since its creation, will continue as director of the Global Food Systems Institute.

Research and Extension within GFSI will be organized along several focus

areas, including circular climate-smart sustainable food production and safety; crop, livestock and aquaculture production, protection, and modeling; natural resource conservation; and leveraging UF’s capacity in artificial intelligence for local to global farming systems.

Hillsborough County breaks ground for an expanded park, new library

Hillsborough County recently held a groundbreaking event to celebrate what will become the Thonotosassa Park & Public Library.

The project will expand an existing park and replace an outdated library with a larger 15,000-18,000-square-foot state-of-the-art facility, creating a single destination site by connecting the expanded park and community center with the new library and amenities.

The newest Hillsborough County Public Library Cooperative library will include traditional services and a broad collection of books and other materials, meeting rooms of multiple sizes, indoor and outdoor reading/workspaces, and a dedicated children’s library space, and publicly accessible digital services.

Proposed additions to the Thonotosassa Park & Recreation Center include an inclusive playground, splash pad, skate park with a pump track, outdoor fitness equipment, pavilions, benches, walking trails, or a boardwalk.

Hernando County launches an Adopt-A-Park program

The Hernando County Board of County Commissioners recently approved Hernando County Parks and Recreation’s new Adopt-A-Park program. The community engagement project will allow residents, families, and organizations to adopt a park selected from a list of county parks.

Adoptions will be for a minimum of two years with a commitment of four service projects a year. Each park that has been adopted will have a sign displayed with the organizations name or acronym

to be displayed. Safety training will be provided annually to volunteers.

“This is a great opportunity for local volunteer groups to get involved,” said County Commissioner Beth Narverud. “People who are passionate about our local parks will be able to learn more about everything that goes into maintaining Hernando County’s beautiful parks and recreational areas. The Board of County Commissioners recognize the value of community involvement and are pleased to announce the Adopt-A-Park program is up and running for volunteers to enjoy.”

Florida Cabinet invests millions to get 20,000 acres for conservation

The Florida Cabinet is investing more than \$56 million to acquire seven properties across the state that will be designated for conservation.

The seven parcels total nearly 20,000 acres, more than 98% of which are within the Florida Wildlife Corridor, a recently designated network of connected lands that are crucial for wildlife habitat.

The Florida Forever projects includes lands in the Wolf Creek area of Santa Rosa County, St. Joe Timberland in Franklin County, Horse Creek Ranch in DeSoto and Hardee counties, the Kissimmee-St Johns River Connector in Okeechobee County, Fisheating Creek Ecosystem in Highlands County, and Lake Wales Ridge in Highlands County.

“Audubon celebrates these investments in our environment and economy, protecting the places we need to provide clean water, wildlife habitat, recreational opportunities and more. These significant conservation decisions made today demonstrate how Florida Forever and the Rural and Family Lands Protection programs work together to steward the Sunshine State’s critical natural resources. As our state grows and develops, so should our attention to preserving Florida’s special places. We need all the tools in our toolbox to protect our natural landscapes through fair, transparent processes,” said Julie Wraithmell, executive director for Audubon Florida. ●

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upgrade of its generators and HVACs to newer more efficient models with better SEER ratings and installing LED and avian-friendly lighting across its portfolio of towers, saving electricity, reducing maintenance costs, and leading to fewer avian deaths each year. Vertical Bridge is also innovating with its Custom Nanogrid Solution, which combines solar, wind turbine, and battery technologies to provide onsite power to its towers.

The varied environments and energy needs of each tower preclude the use of off-the-shelf solutions and require customized applications. Vertical Bridge has partnered with three different companies to develop solutions and is currently testing nine nanogrid deployments in California, New York, Washington State and Texas to assess and refine the technology in different environments. The combination of solar, wind, and battery power has reduced onsite electricity consumption by 25-40%, and the Company is working directly with operators to conduct surveys on their specific nanogrid needs.

Natural Capital Partners, an independent consultant and leading expert on carbon neutrality and climate finance, worked with Vertical Bridge to do a rigorous assessment of its emissions and carbon footprint, looking at direct emissions from towers and communications infrastructure in its portfolio, offices, business travel, HVAC, material transportation, and other aspects of its business in accordance with The CarbonNeutral Protocol.

By finding innovative energy-saving

solutions, Vertical Bridge and its mobile carrier tenants and partners benefit from utility cost savings. In addition, reduced electricity consumption alleviates stress on the power grid and hardens the tower infrastructure against outages and disruptions. ●

About Vertical Bridge

Based in Boca Raton, Florida, Vertical Bridge was founded in 2014. Vertical Bridge became the first tower company in the world to reach net-zero emissions, gaining CarbonNeutral certification in 2020. For more information, visit www.verticalbridge.com.

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Employment Opportunities Available

New Lake Okeechobee policy will last for 10 years

By **APRIL DAY**
Correspondent

Unlike recent years, this summer, Florida's residents and visitors enjoyed clear water. The perennial beach closures and canals clogged with toxic algae were missing.

The absence of discharges from Lake Okeechobee contributed to these improvements.

The Lake Okeechobee System Operating Manual (LOSOM), which regulates releases from the lake, is being updated. The updates go into effect April 2023. The new LOSOM may continue these water improvements.

According to the Federal Register notice of May 21, 2021, for the LOSOM Environmental Impact Statement (EIS), the last Lake Okeechobee regulation schedule review was completed in 2008.

This last regulation schedule sought two goals, to improve lake and northern estuary ecology, and to reduce flood risk during the rehabilitation of the Herbert Hoover Dike.

By statute in Section 1106 of the 2018 Water Resources Development Act, Congress directed the Army Corps of Engineers to re-evaluate LOSOM to coincide with rehabilitation of the Herbert Hoover Dike.

The new LOSOM policy will last for 10 years, incorporating Herbert Hoover Dike rehabilitation as well as South Florida water restoration projects since the 2008 review.

The Army Corps of Engineers must meet multiple goals with LOSOM's new regulation schedule: improve Lake Okeechobee ecological integrity as well as the quantity, quality, timing, and distribution of water moving in the northern estuaries, Water Conservation Areas, and Everglades National Park. Congressionally authorized project purposes must also be balanced.

These purposes include flood control; water supply for agricultural, municipal, and industrial uses; regional groundwater control and prevention of saltwater intrusion; enhancement of fish and wildlife; and



Photo courtesy of US Army Corps of Engineers/Jacksonville

The U.S. Army Corps of Engineers (USACE) is re-evaluating Lake Okeechobee operations to coincide with the completion of Herbert Hoover Dike (HHD) rehabilitation in 2022. The Lake Okeechobee System Operating Manual (LOSOM) effort will re-examine the opportunities to balance the congressionally authorized project purposes for flood control, water supply, navigation, recreation, and preservation of fish and wildlife resources.

Where's a LOSOM?

For more information and locations where hard copies of the Lake Okeechobee System Operating Manual (LOSOM) EIS are available, go to www.saj.usace.army.mil/LOSOM/.

recreation. The aim of LOSOM now is to balance a healthy Lake Okeechobee and a healthy St. Lucie estuary.

Areas of direct impact of LOSOM are critical water resources: Lake Okeechobee, Caloosahatchee River and Estuary, St. Lucie Estuary, the Everglades Agricultural Area, and Water Conservation Areas. Among possible, expected impacts of

LOSOM are changing salinity levels in the northern estuaries, changing water levels in the Everglades Agricultural Area and WCAs, potential increases or decreases in algal bloom risk in Lake Okeechobee and the northern estuaries, increases or decreases in water supply and available water for navigation and recreation, and potential impacts to seagrasses, oysters, and endangered and threatened species.

Added to these areas and possible, expected impacts, the new LOSOM may also have indirect impacts or have impacts in other areas.

Several stakeholders, including environmentalists and county leaders, have been and are consulting with the Army Corps of Engineers.

The LOSOM effort began in late 2018

when the Project Management Plan was developed. Stakeholders that are influenced by the lake operations participated in 10 National Environmental Policy Act scoping meetings throughout February and March 2019.

While there is only an estimated 10% chance of releases from St. Lucie into Lake Okeechobee this year, Martin County ecosystem manager John Maehl said, a storm event that causes the lake to reach or exceed the 17-foot mark would change that.

While some would like there to be no discharges from the St. Lucie estuary to Lake Okeechobee, the new LOSOM will not guarantee that.

The LOSOM will be accompanied by National Environmental Policy Act documentation.

While the year 2022 will usher in a new system operating manual, the year 2025 will coincide with the completion of environmental infrastructure that is currently under construction.

The FY22 budget includes an allocation of \$1,224,000, but President Biden's budget FY23 includes no funds for the project.

According to the Army Corps of Engineers, the Record of Decision for the new system operating manual is scheduled for January 2023. ●

Lake Okeechobee is the heart of the Everglades, supplying the natural system with water that is the life blood for the River of Grass. With the construction of the vast water management system throughout central and south Florida, Lake Okeechobee is also the keystone in the flood protection and water supply system. Regulation of Lake Okeechobee is an integral part of the restoration effort on-going in central and south Florida, working with the Comprehensive Everglades Restoration Plan to better manage the hydrology of the regional system and meet the many-faceted needs of the urban and natural environments.



Waterway Advocates promotes carbon gardening

By **BENJAMIN L. SWANSON**,
Co-Executive Director,
Waterway Advocates



Wouldn't it be great if climate action was accessible to everyone who wanted to participate? At least one South Florida organization believes it can be.

Waterway Advocates is on a mission to improve ecosystems via engaging community service-learning experiences. Recently, the nonprofit partnered with TD Charitable Foundation, Miami-Dade County Parks, and Urban Habitat Miami to launch the Greynolds Park Pollination Station.

On a recent morning in August, community members of all ages came together

to transform a rundown playground into a thriving native habitat. Dying shrubs were replaced with almost 100 native plants, including pink Muhly grass, blue Porterweed, and vibrant green Coontie for our endangered Atala butterflies. This green space is the first of several designed to engage and mobilize community members in a "holistic" approach to environmental conservation.

Carbon gardening, as it is called, is an underrated method of greenhouse gas reduction that provides countless community and ecosystem services. Native

About Waterway Advocates

Waterway Advocates is challenging communities to improve their ecosystems by implementing nature hubs and pollination stations in Broward, Miami-Dade, and Palm Beach counties. Our mission is to facilitate meaningful service-learning experiences that engage communities in beautifying and protecting our ecosystems. Waterway Advocates is a registered 501(c)(3) charitable organization. View the Waterway Advocate in action or join the team at an event, on social media, or on our website at www.waterwayadvocates.org.

plants help restore local habitats and filter groundwater, all while sequestering carbon from the atmosphere. These types of carbon sinks can be created anywhere soil and plants can exist, including parks,

shorelines, roadsides, or even a tiny apartment balcony in the concrete jungle of Miami.

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