

# Florida Specifier



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### Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Fire when ready. And don't forget to fill us in on your organization's new people and programs, projects and technologies—anything of interest to environmental professionals in Florida. Send to P.O. Box 2175, Goldenrod, FL 32733. Call us at (407) 671-7777; fax us at (407) 671-7757, or email [mreast@enviro-net.com](mailto:mreast@enviro-net.com).

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Photo by Roy Laughlin

Charlie Kellar with Gator Dredging checks a pump dewatering Turkey Creek dredge spoil near Melbourne. Muck removal to reduce nutrients and increase water clarity has been an ongoing component of Indian River Lagoon restoration efforts. See related stories on Pages 12 and 13.

## DEP updates surface water quality rules

By ROY LAUGHLIN

The Florida Department of Environmental Protection released revised human health contaminant standards for the state's surface waters as required under the federal Clean Water Act.

The new standards apply to Class I, the newly established category of Class I-treated and Class III surface waters across the state.

Class I surface waters are those used for potable water supply. Class III water standards ensure water quality for fishing, recreation and the support of wildlife and ecosystems.

The new rule has a major and a minor provision. The first is an update of water quality standards for 43 chemicals and the addition of 39 more that

had not been regulated in Florida or were regulated as parts of mixtures.

In Florida, the update began in 2012 and included 11 public workshops, the establishment of a peer review panel and solicitation of public comment.

Last summer, the U.S. Environmental Protection Agency provided guidance that is reflected in the new Florida rules.

### Class I-treated waters

The minor rule-making effort characterizes and identifies "Class I-treated waters" to comply with the water bill passed during the last legislative session, now Chapter 2016-1, Laws of Florida.

The law requires reclassification of all Class III waters currently being used as drinking water sources to Class I-treated waters.

The proposed rule identifies and reclassifies seven former Class III waters: Marco Lakes in Collier County; a segment of the Peace River in DeSoto County; the St. Joe Canal in Gulf County; a segment of the Caloosahatchee River in Hendry County; the Tampa Bypass Canal and a segment of the Alafia River in Hillsborough County; and Taylor Creek Reservoir in Orange County.

The full draft of this revision is available on line at [http://www.dep.state.fl.us/water/wqssp/docs/draft\\_62-303\\_coded\\_050316.pdf](http://www.dep.state.fl.us/water/wqssp/docs/draft_62-303_coded_050316.pdf).

### New contaminant standards

The most extensive part of the new rule is revised water quality criteria for Class I, the new Class I-treated and Class III waters.

The chemicals on the list include elements, naturally occurring organic compounds, synthetic organic chemicals and pesticides.

Also on the new list is a standard for a specific isomer or isomers of compounds that were grouped in the previous list.

For example, the new list includes separate standards for two trichloroethane isomers and several polynuclear aromatic hydrocarbon compounds that had been regulated together in one category.

But the majority of the list includes elements and substances for which the EPA has promulgated standards beginning in 1992.

The EPA used "health-based water quality criteria," following guidance released in the summer of 2015.

The criteria were ultimately derived from a set of algorithms that determined either cancer risk or some other risk such as neurotoxicity, kidney failure or

## Burnett Oil given green light for seismic surveys in Big Cypress

By BLANCHE HARDY, PG

In spite of significant outcry by environmental advocates, the National Park Service recently issued a "finding of no significant impact" for Texas-based Burnett Oil Co. Inc.'s proposed 3-D seismic survey of the Nobles Grade area within the Big Cypress National Preserve.

Matthew Schwartz, executive director of the South Florida Wildlands Association, said the FONSI is a "terrible and irresponsible decision with known impacts."

Schwartz noted that his association is looking into its legal options and believes that the case is strong to disallow or significantly change the permit. They do not accept the decision as is.

Although part of the national park

system, Big Cypress Preserve is not classified as a park.

A park designation typically involves more stringent environmental protections. NPS documents indicate the land was not designated as a park in order to allow existing uses, such as oil and gas operations, to continue.

The Collier family owned a significant portion of the preserve prior to its creation in 1974. The family still retains mineral rights within the preserve and has established multiple oil wells on the property.

The 110-square-mile area that received the FONSI is a fraction of the total Collier family land holdings.

NPS has unsuccessfully discussed

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# EPA national assessment: Half of U.S. wetlands in good shape

## Staff report

In its recent National Wetland Condition Assessment, the U.S. Environmental Protection Agency found that half of U.S. wetlands are in good health.

But it characterized 32 percent in poor health and 20 percent in fair health, attributing physical disturbances to wetlands and surrounding habitat as the most widespread factor reducing wetland health.

Compacted soil, ditching and plant removal are among the other prevalent disturbances identified. Non-native and invasive plants were specific problems the report examined, especially prevalent in the interior plains and the West.

The NWCA is part of a series of National Aquatic Resource Surveys conducted by the EPA and its partner agencies. The surveys are conducted for coastal monitoring and to answer critical questions about waters of the U.S.

For the NWCA, EPA partnered with state environmental agencies, the Natural Resources Conservation Service and the U.S. Fish and Wildlife Service. The NWCA supplements the U.S. Fish and Wildlife Service's Status & Trends Program, which has documented changes to wetland areas in the country for the past 30 years.

Wetlands provide crucial environmen-

tal housekeeping functions that include reducing water pollution and nutrients to surface waters, reducing flooding and providing habitat for fish and wildlife.

NWCA and other surveys will improve understanding of the dynamics of these rapidly changing and valuable ecosystems.

The agency said that the assessments will enable both it and partner agencies to effectively manage and protect existing wetlands, and restore some of those that have been degraded or lost.

In a related action, the EPA launched the National Wetland Condition Assessment Campus Research Challenge.

The goal is to encourage graduate students to select and use NWCA data "to address one or more key innovative questions and hypotheses on water quality, wetland health, or wetland ecology" in their work.

According to the EPA announcement, "the research may examine relationships nationally, eco-regionally or for other sub-populations of interest." The challenge closes January, 2017, and the winners will be announced on March 17, 2017.

**Methane emission rules.** As part of its commitment to manage contributors to and effects of global climate change, the EPA announced comprehensive steps to address methane emissions from new, modified and reconstructed sources that were not covered in the agency's first set of rules established in 2012.

The new sources include hydraulically fractured oil wells.

The rule updates a number of aspects of the EPA's 2012 rule to increase climate change benefits, removes an exemption for low production wells and requires leak monitoring surveys twice as often at compressor stations.

The new rule also provides companies with "a pathway to align the final standards (of the 2012 rule) with comparable state-specific requirements they may have."

The EPA rule keeps the federal government on track to cutting methane emissions from the oil and gas sector by 40-45 percent from 2012 levels by 2025.

Quantitatively, the goal is 510,000 short tons of methane by 2025. With respect to global warming, this is equivalent to 11 million metric tons of carbon diox-

ide because methane is 25 times more effective at trapping radiant energy and converting it to heat.

The EPA estimated that the rule will provide \$690 million in benefits by 2025, outweighing implementation costs of \$530 million. The oil and gas sector will see economic benefits because it can sell or use on-site natural gas that it recovers to comply with the new rules.

The EPA also issued final standards for new and modified sources that lower emission standards for volatile organic compounds, an emissions class its 2012 rule did not address.

Those new standards are expected to reduce emissions by 210,000 pounds from the same facilities subject to the new methane rules.

Reductions in VOC emissions will reduce ozone formation, which is detrimental to respiratory and cardiovascular health. The EPA did not quantify the financial benefits of VOC reduction.

The EPA's final actions also included two rules that clarify permitting requirements for the oil and natural gas industry: the Source Determination Rule and a final federal implementation of the plan for the Minor New Source Review Program in Indian Country.

The EPA also initiated a process to set standards that control emissions from existing sources. It issued for public comment an Information Collection Request.

The agency will collect information necessary for it to formulate rules to reduce methane emissions from existing oil and gas sources. It will collect that information using a general survey of all owner/operators of existing sources.

For some facilities, a more detailed survey may be used.

The EPA expects to complete survey collection by the first part of 2017. The agency is also seeking information on innovative strategies to accurately and cost-effectively locate, measure and mitigate methane emissions.

The agency previously launched a voluntary Methane Challenge Program in which participating oil and gas sector companies can develop methane emission reduction practices and be recognized for their achievements.

The final actions recently announced apply to companies that did not voluntarily begin efforts to reduce methane emissions from existing facilities.

In the past year, new science and monitoring data have shown that methane emissions from existing sources such as pipelines, storage facilities and compressor stations are substantially higher than previously estimated.

**Southern states biomass-to-electricity generation.** Since 2010, the amount of electricity generated from biomass fuels has increased from 56 terawatt hours to 64 TWh, according to a report from the U.S. Energy Information Administration.

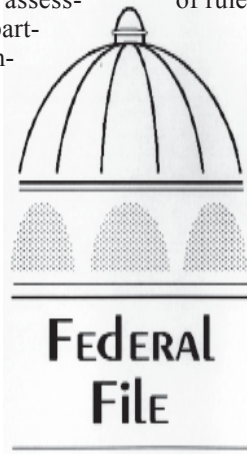
Three states accounted substantially for the increased electricity generation from biomass.

Virginia led the way through a program to convert coal plants to biomass use. In 2013, Virginia power producers converted three plants to provide an additional 150 megawatts of electrical power from biomass.

Georgia built a single plant, the 55 MW Piedmont Green Power Plant, that began operation in 2013. It is fueled by urban wood waste, and mill and logging residues.

The report gives Florida a nod for its 103 MW Gainesville Renewable Energy Center. That facility also began operation in 2013, but experienced two major shutdowns in 2015.

Palm Beach County's newest waste-to-energy facility, which came online in late 2015, was not mentioned but will also add to Florida's portfolio of biomass-to-electricity generation facilities as it reaches full capacity in the next several years.



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More information is on-line at [www.enviro-net.com](http://www.enviro-net.com).

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**MICHAEL R. EASTMAN**  
Publisher/Editor  
mreast@enviro-net.com

Support services provided by  
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Orlando, FL

#### Contributing writers and columnists

**PRAKASH GANDHI**  
Senior Environmental Correspondent  
Orlando, FL

**HANNAH HAMILTON, PhD**  
Public Affairs Specialist  
U.S. Geological Survey  
Reston, VA

**BLANCHE HARDY, PG**  
Environmental Correspondent  
Sanford, FL

**ROY LAUGHLIN**  
Environmental Correspondent  
Rockledge, FL

**JEFF MULHOLLEM**  
Writer/Editor  
Penn State College of Agricultural Sciences  
University Park, PA

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info@enviro-net.com

## DERM seeks additional assessment of AAF's Miami property

### Staff report

The Miami-Dade County Department of Environmental Resources Management informed All Aboard Florida that it must report the steps it has taken to cleanup a contaminated site in downtown Miami.

DERM described the action required by county law on the passenger rail company's land near the northwest corner of Northwest Eighth Street and First Avenue.

Earlier this year, DERM officials sent a letter to parent company Florida East Coast Industries LLC explaining that arsenic and polycyclic aromatic hydrocarbon levels in samples collected from an on-site soil stockpile exceed allowable levels.

All Aboard Florida officials said all contaminated soil has been properly and safely disposed of and trucked to an approved off-site landfill.

AAF officials said that the required dewatering was done through a properly engineered and designed water treatment system.

DERM officials want to establish the vertical and horizontal extent of contamination in the soil and, if applicable, the groundwater.

The report that DERM is requiring must include a time line of the excavation activities at the site, and whether and how the excavated soil was disposed off-site, among other requirements.

The county is also requiring a soil management plan, health and safety plan, and dust control plan for the site.

All Aboard Florida is a passenger rail project that will connect Miami to Orlando with intermediate stations in Fort Lauderdale and West Palm Beach.

The company estimated the project will remove more than three million cars from the region's roadways each year.

**Shipyard cleanup.** The city of Jacksonville earmarked \$750,000 for the Shipyards environmental cleanup project.

A preliminary environmental study found that the site is contaminated with toxins above allowable levels and that more work needs to be completed to determine the full extent of the contamination.

The property was the site of extensive industrial use and has been contaminated with lead, arsenic and other toxins.

The city initially approved funding for environmental studies of the property and has \$13 million set aside for cleanup costs.

**Landfill odor sensors.** Sensors are being installed at an East Orange County landfill following complaints from residents about odors.

The five sensors, which cost \$117,000 to install, will monitor the levels of hydrogen sulfide in the air.

The source of the odor is mixed construction waste, including gypsum board and household garbage.

**Okeechobee power plant.** State environmental officials are close to approving a natural gas power plant in Okeechobee County.

State and local government officials signed off on Florida Power & Light Co.'s plan, but FPL needs the Florida Department of Environmental Protection to approve a site certification for the project.

The 1,600-megawatt power plant will be built on 220 acres.

FPL plans to start building the plant in 2017 and finish in 2019.

The utility has already received approval from the Florida Public Service Commission.

**Artificial reef.** Pompano Beach has a new undersea attraction—a retired New York City sludge tanker that was recently decommissioned from service in New York.

The "Lady Luck" will rest 50 to 120 feet below the surface about 1.5 miles east of Pompano Beach.

The city hopes the 324-foot long, 2,557-ton tanker will lure divers interested

in exploring its 16 staterooms.

The city contributed \$21,000 that Isle Casino matched for the cost of refurbishing, cleaning and transporting the tanker south to Florida.

**Awards.** Audubon Florida presented its annual "Sustainable Rancher of the Year" award to the Lightsey Cattle Company ranch during the Florida Cattlemen's Association Convention in June.

Lightsey owns three ranches totaling 11,400 acres in ownership, with an additional 18,000 acres under lease.

Most of the acreage has been in the Lightsey family's ownership since the mid-1800s.

Included in the company's ownership are thousands of acres of Kissimmee prairie and hammock land, and Brahma Island in Lake Kissimmee, home to as many as 20 pairs of nesting bald eagles.

**Company news.** Hollywood, FL-based NV5 Global Inc., an engineering and consulting firm, acquired assets of X8-Vinyard, an Albuquerque, NM-based pro-

fessional geotechnical consulting and construction materials inspection and laboratory testing company.

Vinyard has been providing services to governmental and commercial clients for over 30 years.

NV5 now has over 50 years of combined experience providing environmental, geotechnical and construction-related services throughout the country.

Environmental lab TestAmerica merged with Nanjing, China-based JSTI Group, a transportation systems design and environmental monitoring firm.

The merger was characterized by officials with the companies as a combination of diversified testing and environmental solution providers that will result in a unified east-west response to the world's environmental testing challenges.

Lakeland-based URETEK Holdings, a provider of geotechnical construction and infrastructure rehab services, changed its name to Ground Works Solutions Inc.

Company officials said the name change better reflects the multiple service offerings for soil and infrastructure repair and rehabilitation.

## Florida Notes



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# JEA to double treatment capacity of Blacks Ford regional treatment plant

## Staff report

Jacksonville's JEA plans to double the treatment capacity of its Blacks Ford Regional Wastewater Treatment Facility.

The plant treats an average of 1.7 million gallons a day with a total capacity of 3 mgd.

Annually, the plant treats about 800 million gallons of wastewater and produces 325 million gallons of reuse water. It is on track to produce about 400 million gallons of reuse water in 2016.

The treated wastewater will be used primarily for commercial and residential

landscape irrigation. Reuse water not needed for irrigation will be released to the Blacks Ford Swamp in northern St. Johns County.

Water released to these wetlands does not contribute a significant level of nutrients to the St. Johns River.

The treatment plant expansion is budgeted for \$55 million. Groundbreaking occurred in May with project completion expected in 2018.

It is one of JEA's largest capital expansion projects in recent years.

The plant currently treats wastewater from about 20,000 people. That number

is expected to grow rapidly over the next few years.

After the expansion, the plant will begin treating wastewater from Nocatee.

**Lehigh Acres weirs construction.** The Lehigh Acres Municipal Services Improvement District broke ground in May on construction of its Southwest Lehigh Weirs Project.

That project is also known as the Aquifer Benefit and Storage for the Orange River Basin, or ABSORB.

The effort will place weirs on several Lehigh Acre canals that will retain up to 800 acre-feet of water,

slowing or preventing it and its nutrients from flowing into the Orange and Caloosahatchee rivers.

That could prevent up to 888 kilograms per year of nitrogen and 87 kg per year of phosphorus from entering those rivers through runoff.

Project funding came from several sources. The Florida Department of Environmental Protection provided \$1.22 million through a water quality restoration grant. The Florida Department of Transportation contributed \$1.9 million through the State Route 82 widening project.

Some of the FDOT funding will also benefit the West Marsh Project.

The improvement district also received \$160,000 in a state grant and \$80,250 in matching funds from the Lehigh Acres Municipal Services Improvement District.

The South Florida Water Management District provided \$57,590 in funding for preliminary project design.

As a result of the multiple contributions, Lehigh Acres Municipal Services Improvement District will not see any increases in its rates.

**SRWMD sets MFLs.** The Suwannee River Water Management District adopted minimum flow and levels rules for the Aucilla, Wacissa and Econfina rivers and associated springs.

The MFLs will protect the unique features of the three rivers.

Twelve major springs feed the Wacissa River that flows as a braided channel through wetlands that form the Aucilla Wildlife Management Area where the Wacissa joins the Aucilla River.

The Wacissa is a major Aucilla River tributary, particularly during low flow periods.

The Econfina River's headwaters are in Madison County and it discharges to the Gulf of Mexico.

In its announcement, the district noted that the MFL rules were created to comply with Florida law. Their primary use is to determine the level of withdrawals the water districts may permit without adversely affecting non-consumptive water uses such as recreation, fishing and habitat management.

The scientific data collected for establishing these MFLs went through a rigorous peer review process, the district noted.

**DEP awards clean water loans.** In late May, DEP announced that six Florida local governments will receive low interest loans from the state's Clean Water State Revolving Fund program for preconstruction activities including design work and permitting of wastewater and stormwater treatment systems.

The city of Arcadia was approved for a one million dollar loan to complete a sanitary sewer evaluation study. The study will identify inflow and infiltration problems in the wastewater collection system and develop a plan to correct any problems found.

The city of Blountstown received a \$1.2 million planning loan to develop and acquire property for a sprayfield for the application of treated wastewater.

The city of Green Cove Springs re-

ceived \$334,500 to plan for the design and construction of a new advanced wastewater treatment facility, including expansion of its reuse system.

The city of Hallandale Beach received \$550,000 for a sanitary sewer evaluation study. The study will identify points of excessive inflow and infiltration, and where rehabilitation or replacement of sewer pipelines is needed.

The city of Jasper will use its \$20,000 loan to evaluate alternatives to the town's

surface water discharge with the eventual goal of eliminating the discharges from their wastewater treatment facility.

Jasper is currently under a consent agreement to eliminate its wastewater treatment plant's surface water discharge.

DEP awarded the city of Springfield a \$919,000 design loan for preparation of plans, specifications and bid documents as well as permit fees for rehabilitating portions of their existing wastewater collection system and constructing a new system.

The completed project will reduce inflow and infiltration into the city's wastewater collection system.

The CWSRF's recently changed rules allow loans that assist with necessary preconstruction activities such as those described for these recipients.

In some cases, CWSRF loans that assist small and financially-disadvantaged communities include substantial loan forgiveness. More than \$2 million of the total \$4 million awarded to these projects requires no repayment.

During the past five years, the Clean Water State Revolving Fund program has awarded about \$1.1 billion through about 120 wastewater and stormwater improvement projects.

**\$1.7 million for RIVER projects.** The Suwannee River Water Management District Governing Board approved funding for 15 projects that will enhance or address the district's water supply, water quality, flood protection and natural systems caretaking efforts district-wide.

The funding will be provided through the district's Regional Initiative Valuing Environmental Resources, or RIVER, program.

The RIVER program includes a recipient cost-share requirement. Columbia, Dixie, Gilchrist, Lafayette, Levy and Taylor counties, along with the municipalities of Hampton, High Springs, Lake City, Live Oak, Madison, Newberry, Stark and Waldo are contributing to cost-share requirements for the grants.

The projects funded will benefit five of the SRWMD's river basins; provide 0.54 million gallons per day of reclaimed water; remove an estimated 44,000 pounds of sediments from springs; eliminate 20 septic tanks to reduce nutrient loading; provide improved flood protection to 468 residents, 10 businesses and two schools; improve water supply services for approximately 1,500 residents and several businesses; and conserve 0.55 million gallons per day of water.

**Cost-share funds for Soldiers Creek project.** The St. Johns River Water Management District added \$800,000 in cost-share funding to Seminole County's Soldier Creek Watershed nutrient reduction facility, a project with a total estimated cost of \$7.6 million.

That project began as a cooperative effort between Seminole County and the Florida Department of Transportation.

It incorporated an FDOT retention pond into Seminole County's larger stormwater management plan for the Soldiers Creek watershed.

**WATCH**  
Continued on Page 5



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# Palm Beach, Broward counties partner on reclaimed wastewater project

By PRAKASH GANDHI

Two of South Florida's largest counties are joining forces to expand the use of reclaimed water in the thirsty region.

The Palm Beach County Water Utilities Department and Broward County Water and Wastewater Services have forged a partnership on a cooperative project to reclaim water and help conserve groundwater resources.

Treated wastewater from Broward County will be used for irrigation in neighborhoods and golf courses west of Boca Raton in Palm Beach County.

"It's a fascinating project because, right now, Broward County does not have a re-

claimed water program," said Robert Nelton, a spokesperson for the Palm Beach County Water Utilities Department.

The project will be implemented through an interlocal agreement already approved by both counties. Officials are now involved in the initial project design.

The work will ultimately provide millions of gallons a day of new reuse water to Palm Beach County to meet increasing demands throughout its reclaimed water service area.

Nelton said that, for Broward County, the partnership gives officials a chance to meet the requirements established in the ocean outfall law that requires utilities with ocean outfalls to increase beneficial reuse water capacity and distribution.

There is a legislative requirement to implement reuse by 2018 and eliminate all wastewater ocean outfalls by 2025.

There is limited reclaimed water demand in Broward, he said, but there is heavy demand for it in southern Palm Beach County.

About 20 million gallons day of water groundwater withdrawn for irrigation purposes will be eliminated. Nelton said this will benefit water supply as well as the ecosystem.

"This win-win regional solution ultimately provides significant benefits for both counties' customers and the water resources they rely on," he added.

He said the project was launched three or four years ago. After Broward County treats the wastewater, they sell it to Palm Beach County who then sells it to southern Palm Beach communities.

"Broward County does not have communities that need or want reclaimed water," Nelton said. "Broward is footing the bill for this project. If this wastewater was not treated, it would have to undergo a very expensive process of deep well injection."

"Reclaimed water is a much more de-

pendable source of water and, during a drought, it is not subject to regulation. Golf courses can use as much reclaimed water as they want for irrigation."

He said there are also benefits to Palm Beach County and to the communities that will be using this reclaimed water.

"With reclaimed water, lakes will always be at a nice, high level and they can plant and invest in nicer landscaping," he said. "Reclaimed water is like an insurance policy. You are always going to have water to irrigate those shrubs and bushes."

The existing Broward County North Regional Wastewater Treatment Plant will be expanded from 10 to 26 mgd. This effort will also expand the existing filter and high level disinfection systems to meet future reuse water demand.

About 5.8 miles of 42-inch reuse transmission piping will be installed as the source pipeline for the reclaim expansion into Palm Beach County and the North Springs Improvement District.

"Additional distribution components will continue to be enhanced in Palm Beach County beyond the 2020 time frame," Nelton said.

## WATCH

From Page 4

That project, with its nutrient reduction facility co-funded by SJRWMD, will reduce nutrient loading through Soldiers Creek to Lake Jesup, part of the middle St. Johns River.

That project includes retrofitting an existing stormwater facility—the Lake Jesup Nutrient Reduction Facility Soldiers Creek Regional Stormwater Facility and retention pond—to remove nutrients using alum. It will treat water diverted from Soldier Creek before it enters the St. Johns River.

The project should be finished in early 2017 and be capable of removing up to 80 percent of total phosphorus and 43 percent of total nitrogen when operating at peak capacity.

A similar facility is operating on Lake Apopka's northern shore.

**Lake Conine project redesign.** Winter Haven City Commissioners approved \$44,850 to redesign a water quality improvement project for Lake Conine.

Polk County is partnering with the city to redesign the nutrient reduction facility.

The original design for the nutrient reduction project was completed in 2011, about the time a canal linking Lake Conine to Lake Hartridge was completed.

But the water quality improvement project on the 235-acre lake stalled in 2011 and remained dormant until recently.

With funding for an updated project design, Winter Haven officials plan to begin construction of a stormwater treatment system in 2017.

The city hopes to get \$1 million of the project's expected \$2 million cost from the Southwest Florida Water Management District.

**IRL Council receives big donation.**

The Canaveral Port Authority Board of Commissioners recently approved a \$100,000 contribution to the Indian River Lagoon Council to support public education to inform the public of causes of damage to the estuary and motivate collaborative community action on solutions.

Port Commissioner Bruce Deardoff proposed the contribution, subsequently passed unanimously by the board.

Over the past six years, the Indian River Lagoon has experienced two extensive micro algae blooms of historic proportions, the most recent one occurring December of 2015 through March of 2016. Both originated in the Banana River.

**District receives award.** The St. Johns River Water Management District was awarded the Distinguished Budget Presentation Award for its fiscal year 2015-2016 budget from the Government Finance Officers Association of the U.S. and Canada.

District Budget Director Mary-Lou Pickles was also recognized for her leadership and contributions to the process.

This marks the 10th consecutive year the St. Johns River district received the GFAO award.

According to GFAO, the award reflects the commitment of the governing body and staff to meeting the highest principles of governmental budgeting. To receive the award, the district had to satisfy nation-

ally recognized guidelines for effective budget presentation, which assess how well the agency's budget serves as a policy document, a financial plan, an operations guide and a communications device.

A budget must be rated "proficient" in all four categories and 14 mandatory criteria within those categories to receive the award.



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# St. Augustine utility, DEP work to reduce wastewater system spills

By ROY LAUGHLIN

In May, St. Augustine's City Council unanimously approved a consent agreement between the city and the Florida Department of Environmental Protection that requires the city to identify and take corrective action to prevent future wastewater spills.

The consent order requires the utilities department to submit a capacity management operations and management assessment report to DEP.

The city will also have to prepare and submit a corrective action plan. It will address inadequate or likely-to-fail components of the city's wastewater collection system.

In addition, the city agreed to pay fines and fees of \$5,500 or complete an in-kind project in lieu of paying the fines.

The city manager plans to hire Applied Technology & Management Inc. to handle the study and report preparation for the consent agreement. The company prepared St. Augustine's 2015 baseline assessment of the city's infrastructure.

Consulting costs and other fees are expected to be about \$30,000.

In Florida, utilities have to report spills as small as 20 gallons. During an average year, St. Augustine City Utilities reports about ten sewage spills, most of which result from St. Augustine's aging wastewater collection infrastructure.

The consent agreement with DEP resulted from 18 spills that occurred from July, 2015, through February, 2016.

The largest was an 18,000-gallon spill in July, 2015, caused by a faulty meter. That spill released untreated wastewater to a surface waterbody.

In addition, several smaller spills occurred in September, 2015, during heavy rains.

A spokesperson for St. Augustine City Utilities attributed the overflow to infiltration of the city's gravity system, leading to excessive pump run time and resultant power failures.

Neither the city council nor the city's utilities department have been lax about system upgrades. Over the past year alone, system upgrades included equipment and instrumentation replacements at a lift station estimated to cost \$137,000.

Elsewhere, the department installed \$80,000 worth of equipment that will increase wastewater system reliability.

The city will also cover the costs of city employee overtime during rain events, and provide funding as needed for emergency pump contractors, expected to cost about \$60,000.

For fiscal year 2016, the city budgeted \$990,000 in operating funds that will cover some of the needed sewer infrastructure upgrades and employee activities.

Last year's numerous wastewater spills are not a new experience for the city. Since 2008, St. Augustine has entered into four other consent agreements involving sewage overflows. This one puts the city on track to identify the worst problems and develop a response plan.

The city council also provided funds to pay for at least some essential repairs and to pay city workers for out-of-schedule work, as needed.

The city is in the second year of a \$30 million, 10-year capital improvement program for its drinking water and wastewater systems.

For 2017, approximately \$500,000 is budgeted for pump station improvements and replacements and, in 2018, the budget increases \$1 million for wastewater system capital improvements.

With the repairs completed after last fall's heavy rainfall event that led to the overflows and resulting consent agreement, the utility department is now ahead of schedule with its capital improvement projects.

Todd Grant, deputy director of St. Augustine Public Works, said that system maintenance funds also come from the department's operating budget, about \$1 million a year, and include repairs that utility department staff can perform.

The capital improvement funding is in addition to annual operating budgets. It funds contractors to do work beyond the scope of the department's staff and construction resources.

"The consent (agreement) puts what the city is doing in writing," he said. The documentation due by August will be "a nice evaluation tool," he noted.

St. Augustine City Utilities shares wastewater collection system problems with many other local governments in Florida.

Many parts of the system are at least half a century old, some much older.

Climate change is slowly causing groundwater levels to rise along Florida's coast and record-setting rainfall events raise them even further. Unexpected inflow and infiltration volumes can lead to sewage spills.

The situation can be resolved, but it will take time, money and careful engineering.

## Lamb's named Clean Marine Retailer

### Staff report

The Florida Department of Environmental Protection joined the Clean Boating Partnership to designate Lamb's Yacht Center in Jacksonville with its third Clean Marina Program designation.

The marina is the first designated Clean Marine Retailer in the DEP's Northeast District and the 20th in the state.

The Clean Marine Retailer designation is presented to marinas that employ environmental best management practices in boat and engine service operations and facilities, as well as educate boaters on clean boating practices.

Lamb's Yacht Center is also a designated Clean Marina and Clean Boatyard, demonstrating an ongoing commitment to the environment in all facets of the marine industry.

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# Opposition to proposed Manatee County development files for administrative hearing

By **BLANCHE HARDY, PG**

The Suncoast Waterkeeper and Florida Institute for Saltwater Heritage petitioned the Florida Department of Environmental Protection for an administrative hearing on a permit application to establish a mitigation bank on Long Bar Pointe in Manatee County.

DEP filed notice of its intent to approve the mitigation bank permit in late May, a permit that is part of a long pursued and hotly disputed proposed development.

The applicants, Cargor Partners VIII/Long Bar Pointe LLC of Bradenton, requested the mitigation bank permit to allow a 3,200 home subdivision to be built on Long Bar Pointe adjacent to the proposed mitigation bank.

The company is controlled by Medalion Home President and U.S. Senate candidate Carlos Beruff and Sarasota developer Larry Leiberman.

"The petition filed by Joseph McClash, Suncoast Waterkeeper Inc. and the Florida Institute for Saltwater Heritage Inc. was sent to the Department of Administrative Hearings last week for a judge to be assigned and a hearing date to be set," said DEP Spokesperson Dee Ann Miller. "In addition, the Lake Flores parties were granted a request for extension of time, to June 21, to file a petition. No petition has yet been filed.

"The department cannot take final agency action until the administrative challenge process is complete and all pending

challenges resolved."

The petition was entered the day after DEP's April 28, 2016, notice of intention to issue the permit. Included among the petitioner's concerns is a proposed 150-foot break along the shoreline of the mitigation bank that would allow for a future boat channel, although no channel is requested in the permit.

Manatee County denied a previous request by the developers to make amendments to the county's comprehensive plan that would allow them to build a marina, hotel, seawall and shoreline retail in addition to housing on the same property.

The developers mounted an unsuccessful legal challenge seeking to overturn the county's denial and are currently appealing the court's decision to uphold the denial in the Second Court of Appeals in Lakeland.

Former Manatee County Commissioner Joe McClash is one of the petitioners challenging the permit.

He said its approval "would allow a piece-meal permit for a development by allowing a mitigation bank to be permitted and then have the development use the newly created mitigation bank to do what they could not do by an environmental resource permit."

Under the current permit request, the developers could receive approximately 20 mitigation credits in exchange for preserving 262 acres of underwater lands com-

prised of saltwater and mangrove swamps and some upland trees.

"The proposed project encourages the destruction of existing wetlands of high environmental function and values," said Glenn Compton, chairman of ManaSota-88 and a staunch opponent of the project.

"It will encourage wetlands to be compromised of their environmental values or functions prior to the submittal of mitigation, maintenance and monitoring plans for review and approval in order to qualify for the mitigation banking alternative," he said.

But DEP officials recognize some environmental benefit to the proposed mitigation bank.

"The proposed mitigation bank includes preservation of several wetlands and upland communities including seagrass, oysters, mangroves, fresh and saltwater marsh and upland mixed hardwoods," said Miller.

"The bank also includes restoration and enhancement activities including the removal of exotic vegetation and replanting of native wetland and upland vegetation. The entire mitigation bank will also be placed under a conservation easement," she said.

## Gulf Breeze stormwater project expected to reduce flooding, improve water quality

By **PRAKASH GANDHI**

The Florida Panhandle city of Gulf Breeze completed a major project that will reap significant benefits to the environmentally-sensitive region.

The \$2.9 million project is aimed at transporting stormwater, reducing flooding and improving water quality in Pensacola Bay and Santa Rosa Sound.

The project will improve water quality in the Santa Rosa County area by lowering the level of sediments normally found in the runoff.

The restoration funding came under a 2012 consent decree between the Florida Department of Environmental Protection and a non-operating investor in the lease on the Macondo Well at the time of the Deepwater Horizon oil spill.

The area is subject to major storm damage such as the flooding that occurred during storms two years ago.

City officials said that urban stormwater runoff and nonpoint source pollution present the most significant continuing source of water quality degradation in the affected areas of the Panhandle, whose coastal waters received oil from the Deepwater Horizon spill.

Vernon Prather, director of public services with the city of Gulf Breeze, said that stormwater retrofit projects play a key role in protecting water quality and managing flows.

New infrastructure was installed in two principal areas of the city. In the first area, stormwater components consisting of new drains and 18-inch pipes were installed in the city's right of way on Washington Street, Florida Avenue, Dolphin Street and Camelia Street.

The system is connected to three lift stations and can handle a combined 5.8 million gallons of stormwater a day.

The second area features 30-inch pipes to transport stormwater on Russ Drive, Nightingale Lane, Center Road and Dracena Way.

This area uses a gravity flow system. The system can handle 10.9 million gallons of stormwater a day.

The improvements follow calls from residents for better stormwater drainage, Prather said.

DEP helped the city make those improvements possible with a \$1.57 million

grant.

"The money was designed to improve water quality and reduce sediments and pollutants reaching surface waterbodies," Prather said. "One of the main benefits of this project is that it will provide a gravity outfall to resolve long-term flooding issues."

The system also has a hydraulic separator to collect sediments. "The (separator) makes the stormwater slow down and lets the sediments settle out," Prather. "Prior to this, there was no means to capture the sediments."

Environmental improvements are important to a community like Gulf Breeze that is surrounded by water on three sides.

"We are very much a waterfront community," Prather said. "This project will reduce the amount of pollutants going to Santa Rosa Sound and eventually to Pensacola Bay, which is very important to the region."



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# PBC, Griffin Sod reach agreement on disposal of wastewater biosolids

By **BLANCHE HARDY, PG**

**P**alm Beach County and the Dan Griffin Sod Co. have come to terms regarding Griffin properties used as wastewater biosolids disposal sites.

In 2009, Griffin Sod began accepting and spreading truckloads of sewage sludge from Broward County on their northern Everglades property in Palm Beach County—property designated for agricultural use.

Griffin officials failed to inform the Palm Beach County Property Appraiser's Office of their change from sod farming

to mixed-waste disposal as the land's primary use.

Sludge processing and mixed waste disposal are not considered agricultural uses within Palm Beach County.

The Property Appraiser's office removed the agricultural classification from the Griffin properties in 2015 based on the fact that the property's agricultural classification for commercial sod production ended in 2013.

The appraiser's records document as much as 10,000 tons of sludge was being disposed of on the 317-acre property annually.

Environmental activists expressed concerns about the biosolids' potential impact on the Everglades and on water quality in the area. Although not visible from the roadway, local residents increasingly complained about the noxious odor emanating from the site.

Under county criteria, the primary use of the property became biosolids processing. The county threatened to take legal action against the company if the practice continued.

The loss of the property's agricultural designation would include the loss of the agricultural tax breaks that come with it.

In order to reestablish their agricultural land use designation, Griffin Sod reduced the amount of land used to dispose of the treated wastewater sludge to about 10 acres.

Sugar cane was then planted on most of the rest of the property.

The changes were sufficient under the law to allow the county to consider the site an agricultural entity again as opposed to a waste disposal site.

"Dan Griffin filed 2016 applications to change the use of the property from sod to sugar cane," said Diane Pendleton, MAI, CFE, agricultural department manager with the Palm Beach County Property Appraiser's Office. "For 2016, we granted the applications for 'sugar cane' agricul-

tural classification as the property is in sugar cane production."

County officials and environmental activists continue to question the wisdom of dumping nutrient-laden biosolids on lands that drain into the Everglades.

But the state allows treated wastewater sludge disposal in this area, limiting the degree to which the county can control the practice.

Much of the current Everglades restoration effort is based on the control and mitigation of nutrients including phosphorus, a significant component of the sludge.

Advocates are already critical of the state's pollutant reduction standard for phosphorus that they feel is too lenient and allows farmers to comply with the standard with little or no effort and less than adequate pollutant removal.

Although Florida's goal for phosphorus reduction by farmers is being met, the federal water quality standards are not.

From the activist's point of view, the disposal of sludge in such close proximity to the Everglades is environmentally imprudent and counterproductive.

State officials noted that spreading the treated sludge on farmland is allowed, as long as pollution control measures are taken to keep sludge-contaminated runoff from discharging into waters reaching the Everglades.

## Northwest Florida Water District wraps up SWIM projects for St. Andrew Bay

Staff report

**T**he Northwest Florida Water Management District recently completed nearly \$5 million worth of projects to help improve the water quality in St. Andrew Bay.

The five projects, located in Bay County and the cities of Panama City, Parker, Callaway and Mexico Beach are part of the district's Surface Water Improvement and Management program.

Each project was designed to reduce the impact of stormwater runoff to the St. Andrew Bay watershed.

"Protecting St. Andrew Bay remains a top priority for the district, and we know these projects will make a significant and positive impact on the bay," said George Roberts, chair of the district's governing board. "We applaud the efforts of local governments to work with the district and DEP to secure the funding needed to complete these projects."

The district's governing board approved funding for the five projects in 2013 and 2014.

The SWIM program provided \$3,796,010.40 to help pay for the five projects that cost a total of \$4,809,995.40.

In Panama City, 13 vortex units were installed throughout the city's bayous and a baffle box system was placed along Maple Avenue to help reduce the amount of sediments reaching the bay.

The vortex units and baffle box system filter sediments and other pollutants from stormwater runoff.

The district provided \$931,774 in funding for the project that was completed in March, 2014.

In Bay County, two miles of existing dirt roadway was paved to help reduce sedimentation reaching Deer Point Lake, the primary source of drinking water for county residents.

The district provided \$671,000 in funding for the work that was completed in August, 2015.

In the city of Parker, a stormwater retention facility was built and a baffle box system installed to better protect Parker Bayou.

The district provided \$1,013,475 in funding for the project that was completed in March, 2016.

In the city of Callaway, a stormwater retention facility was built and a baffle box system installed to better protect Callaway Bayou.

The district provided \$705,217 for the project that was completed in December, 2015.

Lastly, in the city of Mexico Beach, a baffle box system was installed that greatly reduces the amount of sediments discharging into the bay and gulf.

The district provided \$474,452 for the project that was completed in December, 2015.

In 1987, the state Legislature created the Surface Water Improvement and Management program as a mechanism to address nonpoint pollution sources.

According to the Florida Department of Environmental Protection, SWIM was the first major state program to address a waterbody's needs as a system of connected resources rather than simply as isolated wetlands or water bodies.

To accomplish this, the program cuts across governmental responsibilities, creating partnerships in water resource management.

While the state's five water manage-

**SWIM**  
Continued on Page 16



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# Ten Mile Creek project transferred from corps to South Florida district

By PRAKASH GANDHI

South Florida water managers have taken control of a major above-ground reservoir project that they believe will lead to significant environmental benefits in the region.

The South Florida Water Management District recently approved an agreement transferring to them the responsibility for the Ten Mile Creek Water Preserve Area from the U.S. Army Corps of Engineers.

The district can now make the repairs needed to fill the reservoir with up to four feet of stormwater runoff that would otherwise reach the St. Lucie River untreated.

"We are looking forward to getting started," said SFWMD Spokesperson Randy Smith. "We feel this will be a valuable asset as far as water quality and storage are concerned."

Each year, Ten Mile Creek dumps about 13 billion gallons of water into the North Fork tributary of the St. Lucie River. The water, which drains off agricultural fields, pastures and groves, contains an estimated 139,000 pounds of nitrogen and 37,344 pounds of phosphorus.

District officials said the nutrients can contribute to algae blooms in both the North Fork and the river's estuary, which extends from Stuart into the Atlantic Ocean

via the St. Lucie Inlet.

Congress authorized the project in 1996 and the corps completed it for about \$35 million. But it wasn't long before problems started cropping up. Soon after it was completed—10 years ago—the reservoir began leaking.

A contentious court battle ensued between the corps and the engineering firm that designed the project over who was at fault.

For nearly nine years, the 658-acre site west of Fort Pierce sat idle. But a year ago, the two sides settled and the corps received \$44 million.

Meanwhile, the district offered to take over the reservoir project. They spent about \$1 million to repair the problems well enough for it to hold a foot of water. Water started flowing again into the reservoir last July.

Now, water district officials said they are confident the project will bring environmental benefits.

"This is a very important project and it is vital that we move forward with it," said Smith.

Kevin Powers, vice chairman of the district's governing board, said in a statement that they will work without delay to repair and operate the Ten Mile Creek project to provide benefits for the St. Lu-

cie River and estuary.

The district plans to start work this fall that will allow the reservoir to hold up to four feet of water. So far, they retrofitted a pump station that had been unused at the site for several years, removed a weir in the middle of the reservoir and burned vegetation at the bottom of the reservoir.

The work has allowed about a foot of water to be stored in the reservoir and then sent through a stormwater treatment area.

Additional construction bid requests are scheduled to go out in July. A contract will be awarded in September and the project is expected to be completed next

summer. Once complete, the reservoir will hold 2,500-acre feet of water.

The corps designed the project to improve the timing and volume of water deliveries to the North Fork of the St. Lucie River. The agency did this by capturing, storing and treating stormwater runoff from the Ten Mile Creek basin.

District officials said the project has other benefits including reducing the sediments and nutrients flowing to the St. Lucie River, increasing freshwater recharge to the aquifer and having the ability to release water back to Ten Mile Creek for supply when needed.

## Renewable energy report shows sustained increase around the world

By BLANCHE HARDY, PG

The Renewable Energy Policy Network for the 21st Century, or REN21, recently published a comprehensive annual overview of the global state of renewable energy.

The Renewables 2016 Global Status Report indicates renewables have become established as "competitive, mainstream sources of energy in many countries around the world."

The report has been published since 2005. The annual publication does not provide analysis or forecasts, but compiles data from 600 international contributors, researchers and authors.

"Renewable power generating capacity saw its largest increase ever in 2015, with an estimated 147 gigawatts added," said Laura Williamson, communications and outreach manager with REN21. "Renewables are now cost competitive with fossil fuels in many markets."

"2015 was also a record year for investment, reaching \$286 billion worldwide in renewable power and fuels. If investment in large hydropower and heating and cooling is taken into account, the total is far higher."

Renewables 2016 includes developments through 2015 and trends from early 2016.

REN21's data indicate that 2015 was a record year for renewable energy installations. Developing countries surpassed developed countries in total renewable energy investments for the first time.

The vast majority of countries worldwide had renewable energy support policies in place by the end of 2015. Renewable energy provided an estimated 19.2 percent of global energy consumption in 2014, and growth in capacity and generation continued in 2015.

Williamson noted that factors contributing to the growth of renewable included "better access to financing, concerns about energy security and the environment, and the growing demand for modern energy services in developing and emerging economies."

The report noted that government leadership continues to play an important role in encouraging the growth of renewable energy in the power sector, particularly in wind and solar industries.

As of early 2016, 173 countries had renewable energy targets in place and 146 countries had support policies. Municipalities, communities and the industrial and commercial private sector are setting the pace for the rapidly expanding "100 per-

cent renewable" movement.

Statistics presented indicate the developing world, including China, India and Brazil, committed a total of \$156 billion, up 19 percent compared to 2014.

In the U.S., renewable energy investment, dominated largely by solar power, increased by 19 percent to \$44.1 billion, the country's largest increase in dollar terms since 2011.

The greatest challenges for continued renewable energy growth include "achieving effective integration of high shares of renewables into the grid; addressing policy and political instability, regulatory barriers and fiscal constraints; increasing policy focus on transport; and heating and cooling," said Williamson.

"What is truly remarkable about these results is that they were achieved at a time when fossil fuel prices were at historic lows, and renewables remained at a significant disadvantage in terms of government subsidies," added Christine Lins, executive secretary with REN21. "For every dollar spent boosting renewables, nearly four dollars were spent to maintain our dependence on fossil fuels."



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# Adequate funding levels will ensure Everglades restoration stays on track

By ROY LAUGHLIN

Florida Everglades restoration projects could see up to an additional \$200 million per year in additional funding between July, 2016, and 2036.

In April, Gov. Rick Scott signed House Bill 989, the "Legacy Florida" bill, a specifically crafted long-term funding measure that could supply as much as \$1.9 billion over the next 20 years.

The Florida Legislature, by passing the bill, carved out funding to implement the Comprehensive Everglades Restoration

Plan.

Although the Everglades work will get the lion's share of annual appropriations, the bill also provides long-term funding for springs restoration, protection and management, and for Lake Apopka restoration.

HB 989 amends Chapter 375.041, Florida Statutes, to distribute funds from the Land Acquisition Trust Fund through a formula that stipulates that "the Legislature will be required to appropriate a minimum of the lesser of 25 percent or \$200 million for Everglades projects that implement the Comprehensive Everglades Restoration Plan (CERP), including the Cen-

tral Everglades Planning Project subject to congressional authorization, the Long-Term Plan, and the Northern Everglades and Estuaries Protection Program (NEEPP)."

The spending formula provides \$32 million for the South Florida Water Management District's Long Term Plan, \$100 million for CERP, \$70.1 million for Northern Everglades and estuary protection, \$50 million for springs restoration, protection and management, and \$5.51 million for Lake Apopka restoration in accordance with the provisions of the bill.

The details of the funding formula are not so straight forward.

Until the summer of 2026, \$32 million will be distributed to SFWMD, to support the district's Long Term Plan. An additional minimum of 76.5 percent, or \$100 million, will be appropriated each fiscal year to CERP for planning, design, engineering and construction.

Projects that reduce harmful discharges from Lake Okeechobee to the St. Lucie or Caloosahatchee river estuaries will receive priority.

Between 2026 and 2036, CERP and NEEPP will receive the entire \$200 million annually through appropriations to either the Florida Department of Environmental Protection or SFWMD.

The money appropriated in the future years is to come from 2014's Constitutional Amendment 1. SB 989 requires that debt service be deducted first from the annual obligations of the trust fund, before the percentage formulas apply.

Press reports noted that in 2015, Amendment 1 proceeds amounted to \$740 million, with \$175 million going first to debt service.

If Florida Legacy's formulas were applied this year, Everglades restoration would be guaranteed only \$141 million. So it may be that in future years, Legacy Florida will provide substantially less than \$200 million annually in Everglades funding unless the Legislature appropriates additional money to meet spending goals.

The total price tag for Everglades restoration is currently estimated to be \$16

billion, with Florida and the federal government covering the costs.

Gov. Scott pledged in 2015 to commit Florida to spending up to \$5 billion over 20 years. Legacy Florida could make up \$1.9 billion of that commitment.

The state's contribution is a small part of the total \$16.4 billion that the 2015 CERP plan included as a cost estimate to complete the planned projects.

Everglades restoration supporters believe that Florida Legacy's primary contribution is stable funding through the dedicated budget carve-out over the next 20 years that will allow for more effective planning, more cost-effective spending and the ability to stay on schedule.

Many activists would like to see a project component in the restoration plans that does not now exist—a reservoir south of Lake Okeechobee that feeds treated water to the Everglades National Park and then Florida Bay.

That could permanently reduce or eliminate releases of Everglades water from Lake Okeechobee to Central Florida tidewaters via the St. Lucie and Caloosahatchee rivers.

In addition, increased Everglades flow would provide essential freshwater to maintain appropriate salinity levels in Florida Bay.

In the summer of 2015, that portion of Florida Bay in Everglades National Park experienced a 40,000-acre seagrass kill due to record high salinity levels and temperatures.

A drought reduced rainfall through the summer, and water flow from the southern Everglades, now the only source of water to Everglades National Park, dried to a trickle.

Most activists see the purchase of U.S. Sugar Corp.'s land as essential to providing a location and path to send Lake Okeechobee water south towards the Everglades.

The option to purchase that land, which will cost at least \$380 million, expires in October, 2016.

Florida currently has no plans to purchase the land.

## NSF grant underwrites new FIU center

Staff report

Florida International University recently received a plum of a federal grant to help pay for its new Center for Aquatic Chemistry and the Environment.

The National Science Foundation's Centers of Research Excellence in Science and Technology Program will provide a \$5 million grant.

The center will focus on three core research areas: developing innovative methods for detecting and measuring environmental contaminants and pollutants; characterizing fate and transport of environmental contaminants; and applying emerging "big data analysis methods for creating predictive models of future environmental contamination and to help design remediation strategies," according to FIU's announcement.

The new research effort will include faculty members at FIU working in chemistry, biogeochemistry, hydrology, genomics, ecology, public health, ecotoxicology, and computer science and engineering.

The center's work will focus on human-derived environmental contaminants such as antibiotics and pharmaceuticals, mercury, black carbon and fossil fuels.

Other focus areas will include characterization of fate and effect of environmental contaminants, molecular toxicity mechanisms in species that live in close proximity to humans, and the development of a modeling platform for use by policymakers that informs environmental remediation projects.

The new research center's mission includes the prospect of turning environmental data, of which there is a flood, into environmental understanding, of which there is often a drought.

That knowledge may foster a holistic approach to informing policy decisions about and improving environmental remediation efforts.

Professor Todd Crowl, PhD, will serve as lead principal investigator of the new center.

Crowl is also the director of the University's Institute of Water and Environment, and the Southeast Environmental Research Center.



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# Calendar

## July

JULY 8-16 – Course: Backflow Prevention Assembly Tester Training and Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 9-10 – Exam: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 9-10 – Exam: Backflow Prevention Recertification Exam, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 11-15 – Course: Backflow Prevention Assembly Tester Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 11-15 – Course: Backflow Prevention Assembly Tester Training and Certification, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations-8 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12 – Course: Refresher Training for Experienced Solid Waste Operators & Spotters-4 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12 – Course: Refresher Training Course for Experienced Solid Waste Operators-8 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12-13 – Course: Initial Training for Transfer Station Operators of and Materials Recovery Facilities-16 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12-13 – Course: Refresher Training Course for Experienced Solid Waste Operators-16 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12-14 – Course: Initial Training for Landfill Operators and Waste Processing Facilities, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 12-14 – Course: Initial Training for Landfill Operators and C&D Sites-24 Hours, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 16-24 – Course: Backflow Prevention Assembly Tester Training and Certification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 18-19 – Course/Exam: Phase I Environmental Site Assessment and All Appropriate Inquiry Training Course, Orlando, FL. Presented by the International Society of Technical and Environmental Professionals. Call (850) 558-0616 or visit [instep.ws](http://instep.ws).

JULY 18-20 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 18-22 – Course: Wastewater Class A Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 19-22 – Course: Wastewater Class B Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 24-26 – Conference: 2016 Summer Conference of the Florida Chapter of the Solid Waste Association of North America, Tampa, FL. Call (727) 940-3397 or visit [www.swanafl.org](http://www.swanafl.org).

JULY 25-26 – Exam: Backflow Prevention Recertification Exam, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 27 – Course: Dissolved Oxygen & Oxygen Reduction Potential Training, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

JULY 26 - AUG. 1 – Exposition: 2016 Sunshine Expo, Orlando, FL. Presented by the Florida Petroleum Marketers and Convenience Store Association. Call (850) 222-4082 or visit [www.fpma.org](http://www.fpma.org).

JULY 30-31 – Exam: Backflow Prevention Recertification Exam, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

## August

AUG. 2-5 – Course: Water Class C Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 2-4 – Course: Introduction to Electrical Maintenance, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 2-3 – Course: Pumping Systems Operation Maintenance, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 4 – Course: Introduction to Lift Station Maintenance, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 4-5 – Exam: Backflow Prevention Recertification Exam, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 4-5 – Meeting: Annual Meeting of the Florida Section of the American Water Resources Association, Key Largo, FL. Visit [www.awraflorida.org](http://www.awraflorida.org).

AUG. 4-6 – Conference: Florida Engineering Society Annual Conference, Ponte Vedra Beach, FL. Call (850) 224-7121 or visit [www.fleng.org](http://www.fleng.org).

AUG. 5 – Course: Water Distribution Systems Pipes and Valves, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 6-7 – Course: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 8-11 – Course: Backflow Prevention Assembly Tester Training and Certification, Tallahassee, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 8-12 – Course: Backflow Prevention Assem-

bly Tester Training and Certification, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 9 – Course: Asbestos Refresher: Inspector, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 9 – Course: Asbestos Refresher: Management Planner, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 10 – Course: Asbestos Refresher: Contractor/Supervisor, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 11-12 – Exam: Backflow Prevention Recertification Exam, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 15-19 – Course: Water Class A Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16-17 – Course: Refresher Training for Experienced Solid Waste Operators-16 Hours, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16-18 – Course: Initial Training for Operators of Landfills and Waste Processing Facilities, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16 – Course: Refresher Training for Experienced Solid Waste Operators and Spotters-4 Hours, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16 – Course: Refresher Training for Experienced Solid Waste Operators-8 Hours, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations-8 Hours, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16-17 – Course: Initial Training for Transfer Station Operators and Materials Recovery Facilities, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16-18 – Course: Initial Training for Operators of Landfills and C&D Sites, Davie, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 16-19 – Course: Water Class B Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 17 – Symposium: 2016 Summer Symposium of the Florida Local Environmental Regulators Association, St. Augustine, FL. Call (248) 933-1069 or visit [www.flera.org](http://www.flera.org).

AUG. 19-27 – Course: Backflow Prevention Assembly Tester Training and Certification, Ft. Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 20-21 – Exam: Backflow Prevention Recertification Exam, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeco.ufl.edu](http://www.treeco.ufl.edu).

AUG. 22-25 – Conference: 54<sup>th</sup> Annual WASTECON Conference, Indianapolis, IN. Presented by the Solid Waste Association of North America. Call 1-800-467-9262 or visit [www.swana.org](http://www.swana.org).

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## Thank you!

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### Upcoming Courses

<p><b>ISO 14001: 2015 Environmental Management Systems: Where Do We Go From Here?</b> July 21, 2016 - Orlando</p> <p><b>Backflow Prevention Recertification</b> Aug. 6-7, 2016 - Bradenton Aug. 11-12, 2016 - Gainesville Aug. 20-21, 2016 - Tampa Sept. 9-10, 2016 - Ft. Myers Sept. 10-11, 2016 - Bradenton Sept. 12-13, 2016 - Lake Buena Vista</p> <p><b>Backflow Prevention Assembly Tester Training &amp; Certification</b> (Two consecutive Fri. &amp; Sat.) Aug. 8-12, 2016 - Destin Aug. 8-11, 2016 - Tallahassee Aug. 19-27, 2016 - Ft. Myers</p> <p><b>Backflow Prevention Assembly Repair &amp; Maintenance Training &amp; Certification</b> Sept. 12-14, 2016 - Altamonte Springs Sept. 14-16, 2016 - Lake Buena Vista Sept. 19-21, 2016 - Gainesville</p>	<p><b>Initial and Refresher Solid Waste Management Courses</b> Aug. 16-18, 2016 - Davie</p> <p><b>Water Class C Certification Review</b> Aug. 2-5, 2016 - Gainesville</p> <p><b>Water Class B Certification Review</b> Aug. 16-19, 2016 - Gainesville</p> <p><b>Water Class A Certification Review</b> Aug. 15-19, 2016 - Gainesville</p> <p><b>Pumping Systems Operation and Maintenance</b> Aug. 2-3, 2016 - Ft. Walton Beach</p> <p><b>Introduction to Lift Station Maintenance</b> Aug. 4, 2016 - Ft. Walton Beach</p> <p><b>Water Distribution System Pipes &amp; Valves</b> Aug. 5, 2016 - Ft. Walton Beach</p> <p><b>Asbestos Refresher Courses</b> Aug. 9-10, 2016 - Ft. Walton Beach</p>
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# IRL area league of cities' meeting prioritizes lagoon cleanup strategies

By ROY LAUGHLIN

The state of Florida categorizes the Indian River Lagoon as an Outstanding Florida Water. The EPA classifies it as an impaired water body.

Last winter's massive algae bloom, the second major bloom since 2011, makes the classification contradiction increasingly harder for local governments to ignore.

In June, the Space Coast League of Cities, representing local governments in Brevard County, and the Treasure Coast League of Cities, representing local governments in Indian River, St. Lucie and Martin Counties, convened the first Indian River Lagoon Summit at the Florida Institute of Technology.

It brought local government officials together for participation in technical workshops.

The intended result was to identify the

lagoon's problems—and local governments' perceived priorities with respect to those problems—and to list specific assistance local governments need for measures to improve water quality and habitat in the Indian River Lagoon.

The summit opened with presentations from four speakers.

The first, Virginia Barker, director of Brevard County's Natural Resources Management Department, summarized the sources and effects of excess nutrients on the Indian River Lagoon's ecosystem.

Her talk included estimates of nutrient contributions from the internal loading of sediments, particularly muck, and from stormwater runoff.

Leachates from septic tanks and fertilizer in stormwater runoff are now considered primary nutrient sources in stormwater runoff.

Professor John Windsor, PhD, program

chair, Marine and Environmental Systems at the Florida Institute of Technology, discussed muck, focusing primarily on the amount of it in the lagoon, where it occurs, its role as a nutrient source and its influence as a light-attenuating agent that directly reduces seagrass coverage.

In the past several years, dredging projects costing more than \$25 million, primarily funded by the state, have removed muck from canals, the mouths of several natural creeks and other places. The expectation is that more dredging is likely to occur.

Dr. Duane De-Freese, executive director of the newly established Indian River Lagoon Council, discussed the ecosystem services value provided by a healthy and biologically functional lagoon.

He focused on living shorelines and habitat restoration to promote filtering bivalves and other invertebrates whose feeding activities would, it is hoped, reduce suspended particulates, and increase water clarity to a level that will allow sea grass bed expansion and recovery.

The final speaker, Dr. Leesa Souto, executive director of the Marine Resources Council, discussed the effectiveness of messaging campaigns that inform the public of the need to act in ways that promote ecosystem recovery, and to endorse simple behavior modification that would lead to im-

proved water quality in the Indian River.

proven water quality in the Indian River. The Marine Resources Council is particularly focused on efforts to convince the public to voluntarily comply with local ordinances banning fertilizer application during the rainy months when so much of it is washed directly into the lagoon.

One example of outreach is the council's efforts to develop its State of the Indian River Lagoon Report. This summary report is intended to be a simple, non-technical, publicly accessible characterization of water quality data and habitat characterization for the lagoon.

The organization intends to mail approximately 1.7 million copies to residents in counties along the Indian River Lagoon.

The Marine Resources Council, now about 30 years old and the region's oldest lagoon advocacy organization, has always had a strong focus on community engagement.

Souto's simple message was to "keep people engaged."

After the four opening presentations, attendees joined one of four groups corresponding to the technical topics to identify local government priorities from the perspective of the representatives in attendance.

The water quality discussion group noted that ordinance templates that address Indian River stewardship and recovery issues would be useful to ensure effort and goal consistency of local ordinances.

Some participants expressed the perception that commercial lawn care companies are significantly responsible for out-of-season fertilizer application. Local governments cannot under state law prevent

the sale of fertilizers in local stores at any time during the year.

Local governments also want advice and examples of how to identify properties with septic tanks and get them connected to sewers where possible.

A third category discussed was the need for clear advice, perhaps as best management practices, for maintenance activities such as street sweeping and baffle box cleaning.

The muck group asked local governments to provide adequate human resources for efforts to reduce muck transport to the river and its tributaries, and to conduct maintenance efforts to reduce its impact.

The group also pointed out the need for an information clearinghouse of projects and local efforts. They suggested the creation of five-year plans for dredging and muck removal, along with science-based priorities to guide future projects.

Some of the habitat group's recommendations aligned with those of the prior two groups. In addition, local government representatives were highly supportive of habitat restoration by direct intervention.

This includes living shorelines to reduce erosion, vegetation planting and shellfish reef restoration.

The education and public outreach group affirmed existing efforts to convince the public

to voluntarily reduce seasonal and total annual fertilizer application by posting fertilizer ordinance notices and consumer advice in local stores.

Public outreach campaigns to encourage efforts to create filter feeding through habitat restoration projects and build public acceptance for street sweeping were also identified as local government activities where public outreach could back up citizen support.

The lagoon summit arose as a result of the Space Coast and the Treasure Coast league of cities' Indian River Lagoon Regional Compact.

The compact is a formal statement of cooperation among cities in the two leagues, along with the Indian River Lagoon Council and other local government agencies including the counties and Port Canaveral.

Under the compact agreement, these summits are to be held at least biennially. For this meeting, Stephany Ealy, immediate past president of the Space Coast League of Cities and chair of its Science and Environment Committee, plans to prepare a list of action items and present them to the leagues' members for further discussion.

Local governments have a level of responsibility for the Indian River Lagoon's decline as well as some of the resources to correct the causes.

Benefits will accrue to city residents when improvement occurs.

If cities can effectively act in concert, it may be the most effective development in a quarter century to work toward the restoration of the Indian River Lagoon.

## Regional compacts: A tool for local governments to address regional problems

Last year, Florida League of Cities President Matt Surrency proposed the idea of Florida regional compact initiatives, formally enlisting local governments to support regional compacts by ratifying ordinance.

The compact is based on a statement of shared efforts towards a defined goal of mutual benefit to all members.

"The regional compact initiative was patterned after the Southeast Florida four-county compact regarded as the national model for cross-jurisdictional problem-solving," according to information from the Florida League of Cities.

In practice, an organizing group drafts a compact that states its goals, policies and specific measures to reach the goals.


Local governments have the choice of accepting or not accepting the entire compact without revisions. Alternately, as in the case of the Indian River Lagoon Compact, cities are "bought into" the compact when the league in which they are members approves the compact.

Compacts are intended to address regional problems and may include multiple leagues of cities that comprise a region.

For example, the Space Coast League of Cities, representing 16 members, and the Treasure Coast League of Cities, representing 13

**COMPACTS**  
Continued on Page 13

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# Indian River Lagoon Council announces first grants for improvement projects

By ROY LAUGHLIN

In late May, the Indian River Lagoon Council approved 24 projects to receive a total of \$4 million in council grant funding and associated matching funds.

The projects focus on local efforts to protect and restore the Indian River Lagoon in Brevard, Indian River and St. Lucie counties.

Habitat restoration projects comprise the largest grant category, including oyster reef establishment, shoreline restoration including vegetation planting and invasive species removal on spoil islands.

Some were more future looking.

Florida Atlantic University's Harbor Branch Oceanographic Institution will receive \$35,000 to assess the impacts of climate change on the Indian River Lagoon.

The Smithsonian Institution in Fort Pierce will receive about \$29,000 to determine how well oysters remove pollution from the lagoon.

With the recent algal blooms that have reduced seagrass beds by about 40 percent since 2011, the selection committee had ample justification to fund six projects that reduce the level of nitrogen, phosphorus

and other nutrients flowing into the lagoon.

The funded projects intend to reduce nutrients in stormwater runoff and leachate from septic tanks.

Some of the studies such as those to be conducted by the Ocean Research and Conservation Association will identify the worst polluting canals as a first step toward future efforts to reduce the sources of nutrients.

The city of Sebastian received a \$100,000 grant to provide financial subsidies that encourage sewer hookups to reduce nutrient leaching into the Sebastian River and Indian River Lagoon.

Sebastian has offered \$5,000 discounts to residents who hook up to their central wastewater treatment plant.

\$50,000 went as a special grant to an American Legion Hall and another \$10,000 to a 15-unit apartment house.

A couple of projects in St. Lucie County will also reduce stormwater runoff and the nutrients it transports.

Five of the grants will go to education and public outreach. Three of them are for administration and grant writing.

Grants varied in size from \$7,042 to the Florida Department of Environmental Protection for work on habitat restoration

at an island in Indian River County to a \$200,000 grant to the city of Fort Pierce to treat stormwater runoff from the San Lucie Subdivision.

The city of Vero Beach received the second largest grant, \$122,000, to reduce runoff from its Vero Isles subdivision.

The amounts tallied here are for funds provided by the Indian River Lagoon Council. In addition to the council's funding, many of the projects were eligible for matching funds, often more than the grant funding provided by the council.

Overall, these projects will spend more than \$4 million for habitat restoration, nutrient reductions, and education and outreach projects that directly benefit the Indian River Lagoon.

Of the nearly \$1.5 million provided in

council funding, \$115,000 was listed as administrative cost including grant writing, organizational consultants and staff travel.

Indian River Lagoon funding sources include \$750,000 annually from the U.S. Environmental Protection Agency; \$500,000 from both the St. Johns River Water Management District and the South Florida Water Management District.

The DEP provides \$250,000. Brevard County, St. Lucie County and the Indian River County Lagoon Coalition comprised of the cities of Fellsmere, Sebastian and Vero Beach each contribute \$50,000 annually.

The grant funding becomes effective on Oct. 1, 2016. Application for the 2017-18 funding year will be available in October or November this fall.

## Research suggests no smoking gun to halt the worldwide decline of amphibians

By HANNAH HAMILTON and JEFF MULHOLLEM

New U.S. Geological Survey-led research suggests that even though amphibians are severely declining worldwide, there is no smoking gun and thus no apparent simple solution for halting or reversing the declines.

"Implementing conservation plans at a local level will be key in stopping amphibian population losses, since global efforts to reduce or lessen threats have been elusive," said Evan Grant, a USGS research wildlife biologist who led the study.

"This research changes the way we need to think about amphibian conservation by showing that local action needs to be part of the global response to amphibian declines, despite remaining questions in what is causing local extinctions," he said.

The evidence shows that though every region in the U.S. suffered declines, threats differed among regions.

The threats include: human influence from the Mississippi River east, including the metropolitan areas of the Northeast and the agricultural-dominated landscapes of the Midwest; disease nationwide; pesticide applications east of the Colorado River; and climate change across the Southern U.S. and the West Coast.

Amphibian decline is a global phenomenon that this new research demonstrates has continued unabated in the U.S. since at least the 1960s, and which is occurring even in protected national parks and refuges.

Scientists broadly linked declines to environmental factors like climate, human influence such as land-use change, and contaminants and disease, but have not

been able to use actual scientific data on a large scale to discern the causes of the ongoing disappearance of amphibian populations.

The new study is the first to test this linkage on a continental scale and finds that the presence and intensity of the four main threats—human influence, disease, pesticide application and climate change—varies substantially across the country.

The causes of the declines are more variable and more locally driven across the U.S. than had been assumed.

For example, the research provided evidence that the average decline in overall amphibian populations is 3.79 percent per year.

This is in line with previous USGS-led research findings from 2013 that showed a similar rate of loss, though the new research finds that the decline rate is more severe in some regions, such as the West Coast and the Rocky Mountains.

If this rate continues, some species could disappear from half of the habitats they occupy in about 20 years.

"Losing three or four percent of amphibian populations might not sound like a big deal. But small losses year in and year out quickly lead to dramatic and consequential declines," said USGS ecologist Michael Adams, a study coauthor and the lead for the USGS Amphibian Research and Monitoring Initiative, which studies amphibian trends and causes of declines.

David Miller, a professor at Penn State University and the lead biometrician in the study, summarized the extent of the effort.

"This study involved a truly comprehensive and collaborative effort to bring

### AMPHIBIANS Continued on Page 16

### COMPACTS From Page 12

members, each unanimously approved the Indian River Lagoon Regional Compact.

Dr. Stephany Ealy, immediate past president of the Space Coast League of Cities and chair of its Science and Environment Committee, noted that cities in the two leagues represent all the major cities within the Indian River region.

Leagues of cities, under the FLOC regional compact model, may address any problem deemed to be effectively addressed by a regional cooperative effort to which local governments through their ordinances, location, services or utilities can make a significant contribution to solving.

Environmental problems are not singled out for compacts but Ealy said that

a substantial number of regional compacts are focusing on them.

So far there are three regional compacts in place, according to Holly McPhail, communications coordinator with the Florida League of Cities. They clearly have an environmental focus.

Surrency proposed regional compacts when he became FLOC president in August, 2015, so the idea is relatively new.

A league forming a compact is not required to follow the exact formation footsteps of those already established elsewhere.

Given that latitude and flexibility, the compact model is sure to see wide usage in the future where a regional problem has evaded the capability of one or more municipalities to implement a successful solution.

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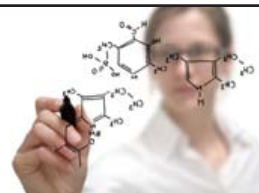
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# Tavares starts construction of downtown stormwater treatment project

By ROY LAUGHLIN

In May, the city of Tavares in Lake County began construction of a combined stormwater and city beautification project that will collect and treat stormwater from East and West Ruby Street along part of the city's waterfront.

Their current stormwater collection system along Ruby Street is about 50 years old. It lacks the capacity to prevent flooding after heavy rains and is in dire need of repair.

To improve stormwater management and reduce the level of street flooding, contractors are installing larger drainage pipes

under the streets.

The stormwater will be led to a connected series stormwater treatment ponds to be constructed on an eight-acre parcel between Lake Eustis and the county jail complex. After transiting the ponds, stormwater cleared of nutrients and sediments will flow to the Dora Canal and then on to Lake Eustis.

Lake Eustis is designated as "impaired" by the Florida Department of Environmental Protection, necessitating stormwater treatment to remove sediment and nutrients before drainage to the lake.

The stormwater treatment ponds will become part of downtown Tavares' ameni-

ties. The site will be developed into a public park with paths and bridges over the waterworks.

To provide more effective nutrient removal, the ponds will include littoral aquatic vegetation plantings and an extensive group of floating mats containing emergent aquatic vegetation provided by Beemats.

Forest Beeman, owner of New Smyrna Beach-based Beemats, said that the floating trays can also be planted and arranged to provide wildlife habitat for insects, reptiles and amphibians, as well as birds.

Brad Hayes, Tavares' utilities director, said that the project also includes a vegetation screen between the county jail and the new park.

The city scheduled the stormwater treatment ponds and park construction first, and then will begin replacing and upgrading Ruby Street's stormwater conduits.

City officials have spread the word that conduit replacement will occur on a block-by-block schedule to minimize interference with local business access.

Prime Construction Co. of Orlando is

the general contractor on the project. The project is expected to be finished in time for the 2017 rainy season.

Financing comes from a several sources. The city obtained \$2.6 million in funding through a combination of state grants and loans.

Those included \$750,000 from DEP's Water Quality Restoration Program, \$750,000 from a 319/LP Grant through Florida Section 319 Nonpoint Source Management Section, a \$1.9 million Clean Water State Revolving Fund Program loan, and a \$750,000 from CBIR grant.

Local funding sources included the Lake County Water Authority.

More than half the project's costs have come from "pure grants," said Hayes.

Stormwater programs have historically consisted only of retention ponds—fenced and ignored. Lately, Florida cities have looked for ways to make multiple uses of stormwater treatment systems as amenities in urban and suburban settings.

Hayes said that Tavares wanted to build something with both multiple environmental benefits as well as public amenities.

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### FEDFILE

From Page 2

Electricity generation from biomass increased 15 percent among western states. California, which has built a few large electricity generating plants accounted for most of that increase.

About half of the electricity generated from biomass occurred at industrial facilities outside the electric power sector. Those include pulp and paper mills.

But within the electric power sector, biomass accounted for 6.3 percent of renewable electricity and 0.8 percent of total U.S. electricity generation.

**Clean Vessel Act grants.** Florida is slated to receive \$1,338,481 and \$711,525 for coastal and inland projects, respectively, from the U.S. Fish and Wildlife Services' Clean Vessel Act program.

The Florida Department of Environmental Protection will administer the projects. It plans to construct or replace 38 coastal and 15 inland pumpout stations for Florida boaters.

In addition, DEP will continue the ongoing CVA boater education program through Internet postings, outreach events, brochures, radio and television public service announcements and a database monitoring program.

The Clean Vessel Act funds come from the Sport Fish Restoration and Boating Trust Fund. Boaters and boat manufacturers pay excise taxes and duties on certain fishing and boating equipment, and boating fuels.

Florida has been among that leading recipient of CVA grants since the program was established in 1993.

This year, it came in number two behind the state of Washington and only a little ahead of California. All three states receive more than \$2 million in CVA grants.

**Benefits from federal loans recognized.** A recent report by the Water Environment Federation and the WaterReuse Association focused on the economic benefits of loans and grants from Drinking Water and Clean Water State Revolving Funds programs.

In a nutshell, the report forecast that \$34.7 billion in federal SRF funding will generate \$102.7 billion in total economic output and create more than half a million U.S. jobs.

It will also generate \$7.43 billion in federal tax revenues. When leveraged with state SRF funds, the federal tax revenues increased to \$0.93 for every dollar spent.

Each million dollars spent in the program creates 16.5 jobs, on average, an aggregate total of 500,000 jobs. Finally, for every million dollars in SRF spending, 2.95 million in U.S. economic output results.

The EPA established state revolving fund programs over 25 years ago by pro-

viding billions of dollars in federal funding to establish loan funds in every state.

The idea was that as loans were repaid at low interest rates, the dollars could be loaned again for more drinking water or wastewater treatment projects.

The program received another large infusion under the Obama administration's 2009 American Recovery and Reinvestment Act.

WEF and WaterReuse conducted their research and prepared the report at the request of the Senate Environment and Public Works Committee, and summarized it at an April Senate hearing on the federal role in water and wastewater infrastructure funding.

As a result, the Senate committee included a "Sense of the Senate" provision in Senate Bill 2848, the Water Resources Development Act of 2016, calling upon Congress to provide robust funding for the SRF programs.

That bill passed committee vote and now awaits Senate consideration.

In 2015, Florida's SRF, provided \$317 million (\$281.6 million through the Clean Water SRF and \$35.4 through the Drinking Water SRF) in low interest loans for wastewater, stormwater and drinking water infrastructure projects.

The funded projects protect both human health and the environment. The grants range in amount from tens of thousands to tens of millions of dollars.

Florida's SRF is funded by federal grants, state matching funds, loan repayments and interest earnings.

"The State Revolving Fund loan program is Florida's largest financial assistance program for water infrastructure," said Jessica Boyd, a Florida Department of Environmental Protection spokesperson.

Florida's SRF is essential to the state's water infrastructure and, together with local matching funds, will likely yield roughly a \$1 billion in total economic outputs annually.

**FGCU education grant.** Florida Gulf Coast University will receive a \$90,800 EPA environmental education grant.

With it, the university improve environmental literacy among seventh grade students in Lee, Collier, Charlotte, Hendry and Glades counties.

The program to be developed is Creating Learning Experiences and Addressing Needs of Watersheds and Aquifers through Entrepreneurial Research.

It will integrate classroom and virtual learning, hands-on models and physical and virtual field trips, and will culminate in an entrepreneurial research and design project that will enhance student understanding of watersheds, aquifers and wetlands.

FGCU's grant is the first to a Florida recipient since 2012. This year, the EPA made 35 grants to applicants in 26 states.

# TBW working with partners to assess potential impacts from climate change

By **BLANCHE HARDY, PG**

Like water suppliers internationally, Tampa Bay Water, the Southeast U.S.' largest wholesale water utility, is undertaking measures to better un-

**DEP**  
From Page 1

derstand the impacts of climate variability, including sea level rise, on its infrastructure.

“Tampa Bay Water realizes the need to include sea level rise impacts in our long term water supply planning process,” said

Brandon Moore, public communications manager at TBW. “We are involved in several efforts that help us understand not only sea level rise, but also climate change and variability impacts on Florida water utilities.”

The Tampa Bay region was recently identified by the Sierra Club as one of the ten areas in the country most threatened by the potential impacts of climate change.

According to TBW data, nearly 60 percent of Tampa Bay water’s supply comes from local rivers and Tampa Bay.

The utility’s Apollo Beach desalination plant is located on the eastern coast of Tampa Bay and is among the facilities to be evaluated.

Though their study of the issues has just begun, they expect that increased storm surge will likely be identified as the most potentially harmful impact on the plant.

“The elevation our Tampa Bay Seawater Desalination Plant is 11 feet,” Moore said.

The 25-million-gallon-per-day capacity Apollo Beach desal plant supplements the utility’s water supply in accordance with demand, favoring the less expensive water supply from the 15-billion-gallon C.W. Bill Young Reservoir.

As population grows and resources become more limited, the plant’s supply will be tapped more frequently. The cost at current rates will be two-to-four times greater than other supply resources.

“This is a much more sophisticated and comprehensive analytical method that allows us to generate criteria to protect all Floridians including small children and people who eat more seafood than average,” she said.

As part of its rule making, DEP released two technical documents characterizing the selection of factors for probabilistic risk assessment: *Final Baseline Risk Analysis for Chapter 62-302*, prepared in 2008; and the more recent *Draft Technical Support Document: Derivation of Human Health-Based Criteria and Risk Impact Statement*, May, 2016.

The first document is useful for identifying the factors and their numeric values for Floridians. The second describes use, updating and the proposed standards derivation.

The 250-page *Draft Technical Support Document* will be read extensively only by experts, but the section on calculating risk from fish consumption is one that an interested non-expert may want to read for insight into how structured, multifactor risk assessments provide estimates of human exposure through seafood consumption.

What started as a complex and fairly dry technical exercise conducted over the past several years, garnered an enormous amount of interest in public hearings when draft standards were first presented in May.

It is not too surprising that the breadth of the new standards could confuse the general public. In some cases with a specific substance, the proposed standard for cancer endpoint moved in one direction, while the change in a non-cancer end point moved the opposite way.

Some chemicals not included in the proposed list, dioxin for example, are still on the radar of human health and environmental advocates. DEP is not ignoring them.

“We will continue to adopt and revise standards as the science is available,” said Miller. “DEP will continue to collect data and update Florida’s surface water criteria as part of our regular triennial review when valid scientific information is available.”

“In contrast to the deterministic approach used by the EPA that bases analysis on one set of characteristics—for example, one average weight, one fish consumption rate, one drinking water rate—the probabilistic approach the department used allows us to take into consideration the characteristics of all Floridians,” said DEP Spokesperson Dee Ann Miller.

“This is a much more sophisticated and comprehensive analytical method that allows us to generate criteria to protect all Floridians including small children and people who eat more seafood than average,” she said.

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Some substances, such as polycyclic aromatic compounds, were regulated as their sum concentrations in mixtures. Now, the most abundant specific polynuclear aromatic compounds are regulated individually.

Trichloroethane, which has two isomers, is another example of specificity in the new standards. For 1,1,1-trichloroethane, the non-cancer Class I waters criteria is 12,000 µg/L while for 1,1,2-trichloroethane, the Class I waters endpoint is for cancer and is 1.2 µg/L, four orders of magnitude lower.

In general, most proposed standards from the Monte Carlo-based probabilistic analysis are similar to previous standards used in Florida, and even more are within the range of EPA criteria guidance.

“The vast majority of DEP’s criteria fall

safely within EPA’s recommended range to protect human health,” said Miller. “In addition, EPA’s own guidance recommends that states develop criteria that ‘use local or regional data in place of a default value.’”

A complete list of compounds, including the proposed standards and the prior values where they exist, is in the draft rule language at [http://www.dep.state.fl.us/water/wqssp/docs/draft\\_62-302\\_coded\\_050316.pdf](http://www.dep.state.fl.us/water/wqssp/docs/draft_62-302_coded_050316.pdf)

This is the first substantial update to Florida’s water quality standards for surface waters that protect drinking water sources, recreation and fishing. The last change occurred in 2008, when DEP lowered the arsenic standard to its current 10 ppb.

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The first document is useful for identifying the factors and their numeric values for Floridians. The second describes use, updating and the proposed standards derivation.

The 250-page *Draft Technical Support Document* will be read extensively only by experts, but the section on calculating risk from fish consumption is one that an interested non-expert may want to read for insight into how structured, multifactor risk assessments provide estimates of human exposure through seafood consumption.

What started as a complex and fairly dry technical exercise conducted over the past several years, garnered an enormous amount of interest in public hearings when draft standards were first presented in May.

It is not too surprising that the breadth of the new standards could confuse the general public. In some cases with a specific substance, the proposed standard for cancer endpoint moved in one direction, while the change in a non-cancer end point moved the opposite way.

Some substances, such as polycyclic aromatic compounds, were regulated as their sum concentrations in mixtures. Now, the most abundant specific polynuclear aromatic compounds are regulated individually.

Trichloroethane, which has two isomers, is another example of specificity in the new standards. For 1,1,1-trichloroethane, the non-cancer Class I waters criteria is 12,000 µg/L while for 1,1,2-trichloroethane, the Class I waters endpoint is for cancer and is 1.2 µg/L, four orders of magnitude lower.

In general, most proposed standards from the Monte Carlo-based probabilistic analysis are similar to previous standards used in Florida, and even more are within the range of EPA criteria guidance.

“The vast majority of DEP’s criteria fall

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## Growing your business is our business.

**SWIM**

From Page 8

ment districts are directly responsible for the SWIM program, they work in concert with DEP, federal, state and local governments and the private sector.

All the partners contribute with funding or in-kind services. In many areas, state-appropriated money is not the biggest part of program funding.

SWIM develops plans for at-risk water bodies, and directs the work needed to restore damaged ecosystems, prevent pollution from stormwater runoff and other

sources and educate the public.

SWIM plans are used by other state programs, like Save Our Rivers, to help make land-buying decisions, and by local governments to help make land-use management decisions.

Since its inception, SWIM has made great strides toward improving the quality of a number of troubled waterbodies. The initial legislation identified specific water bodies that would fall under SWIM—Lake Apopka, the Indian River Lagoon, Biscayne Bay, the St. Johns River and the Everglades among them.

**TBW**

From Page 15

“We have not ranked the risks (from climate change), Moore said. “But in general, changing rainfall patterns (concern us)—too little rain resulting in river flows falling below environmental thresholds, limiting or eliminating TBW’s ability to withdraw water for treatment, or too much rain and localized flooding that makes it difficult to maintain our facilities.”

Additional impacts may include the effect on temperature-sensitive pumps and motors and an increasing intensity of rainfall or tropical storm events that limit the utility’s ability to operate their systems.

The utility is working with both local and national partners to begin climate change assessment.

“Recently, TBW participated on the Climate Science Advisory Panel, a collaboration between Tampa Bay Water, the Tampa Bay Regional Planning Council, the Southwest Florida Water Management District, the University of South Florida, and Hillsborough and Pinellas counties, which was led by the University of Florida’s Sea Grant program,” he said. “The work of this panel resulted in consensus among regional agencies on what numbers to use for sea level rise impacts. TBW will use these sea level rise numbers as guidance for future water supply decisions.”

According to the advisory panel, the region may experience sea level rise somewhere between 6 inches and 2.5 feet by 2050.

**AMPHIBIANS**

From Page 13

together data from researchers across the U.S.,” Miller said. “We combined nearly half a million actual observations of 84 species across 61 study areas to answer questions about the causes of wide-scale

amphibian declines.”

Hannah Hamilton, PhD, is a public affairs specialist with the U.S. Geological Survey and a graduate of the University of Florida. Jeff Mulhollem is a writer and editor at Penn State’s College of Agricultural Science.

**SEISMIC**

From Page 1

purchasing the mineral rights with the Colliers in the past. Two active oil patches currently occupy the preserve, at Bear Island and Raccoon Point.

The proposed seismic survey will cover roughly ten percent of the preserve’s area in accordance with the FONSI that was issued based on an environmental assessment prepared by the NPS for the Burnett survey.

Environmental advocates said that the environmental assessment process was inadequate to assess the potential impacts to the preserve and proposed that the NPS prepare a more comprehensive environmental impact statement.

“A lot of this area is eligible for federal wilderness designation. The park service has the ability to say no,” Schwartz said. “The preserve is one of the most diverse pieces of public lands in the U.S. It supports tremendous biodiversity—30 listed wildlife species.

“The (NPS) permitted the Barnett plan

of operations and did not do an EIS. An EA is more limited. This is the first time assessing this use. It has to be controlled and regulated.”

The preserve is considered the most significant remaining habitat of the endangered Florida panther. Only 80 to 100 remain in the wild, many in the preserve.

Barnett Oil must adhere to 47 measures issued by the NPS to prevent environmental damage.

The measures include preliminary inspections of the areas involved, avoidance of nests of endangered red-cockaded woodpeckers, avoidance of colonies of wading birds, use of existing roads and trails to the extent possible and initial scouting of areas to look for burrows of gopher tortoises, Eastern indigo snakes or burrowing owls.

“Heavy trucks and helicopters will go into areas where vehicles may never have been before,” Schwartz said. “They will criss-cross the entire 70,000 acres. That has never been done before. They are bringing industrial activity into an area of very fragile soils.”

Vehicle impacts to soils in the preserve system include rutting and oxidation, hydrological changes due to compaction, destruction of vegetation and the spread of invasive plant species.

“The park service knows how fragile the soils are because they have been managing off-road vehicles in it for years,” he said. “Off-road vehicles have a designated trail system. They have limited access. Barnett is going into areas (previously) off limits to off-road vehicles.”

According to Schwartz, Barnett recently deployed a seismic unit and conducted a field test that failed. The seismic truck got stuck and had to be pulled out causing damage that environmental advocates have warned will occur.

# Florida Specifier

## 2016 Environmental Lab Directory

Each August, we turn our attention to the environmental laboratory business in Florida. As part of this special annual issue of the *Florida Specifier*, we include a directory of environmental labs providing analytical services in the state.

You’re invited to complete the form below, providing details about your lab and its analytical capabilities. **There is a fee of \$200 to list your lab this year.** (Fee waived for *Specifier* advertisers, and FRC exhibitors.) In addition to your listing in the directory, **your lab will also be included in a special lab listing on our Enviro-Net website.**

Please type or LEGIBLY print the information requested and return as soon as possible to Mike Eastman via fax at (407) 671-7757, e-mail mreast@enviro-net.com or mail to P.O. Box 2175, Goldenrod, FL 32733. You can reach us at (407) 671-7777. The deadline for submissions to the August Lab Directory is **Friday, July 18, 2016.**

**Note: If you were listed last year, we will be in touch. Do not complete this form.**

Please include only lab operations, capabilities and personnel in Florida.

Laboratory name: \_\_\_\_\_

Primary Florida address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_ Web: \_\_\_\_\_

Contact: \_\_\_\_\_ Title: \_\_\_\_\_

Locations in FL: \_\_\_\_\_

State of incorporation: \_\_\_\_\_ Years under same ownership: \_\_\_\_\_ years

Lab capabilities/specialties: \_\_\_\_\_

Sample types: \_\_\_\_\_

Certifications: \_\_\_\_\_

Additional services: \_\_\_\_\_

Number of years in business: \_\_\_\_\_ years

Staff: Total: \_\_\_\_\_ Engineers/scientists: \_\_\_\_\_ Technicians: \_\_\_\_\_

What single issue has most affected labs in Florida over the past year? \_\_\_\_\_

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