

Florida Specifier



Happy Holidays!

Practical Information For Environmental Professionals

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Mallory Swamp project 5

The Suwannee River Water Management District has begun an ambitious effort to raise the water level across about 30,000 acres of Mallory Swamp in Lafayette County. Raising the level will restore the swamp's original role as a source of water for streams west of the swamp and to the Upper Floridan Aquifer, which feeds springs on the swamp's east side.

Parker petroleum cleanup 6

State environmental officials are making progress with the cleanup of contamination in the city of Parker. The Florida Panhandle site has been dubbed an imminent threat by the Florida Department of Environmental Protection due to a large petroleum plume.

GRU withdrawal permit 7

Alachua County officials are concerned about the potential environmental impact of a pending application by Gainesville Regional Utilities for a new permit to pump groundwater. Water managers just recently started reviewing the application, but officials in Alachua County have already started questioning the permit.

Miami parks contamination 8

The city of Miami has plans to install two more groundwater monitoring wells in Blanche Park. Since August, when contaminants were first discovered in the soil of Blanche and Merrie Christmas parks, a series of tests have been conducted in parks throughout Miami-Dade County.

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Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Fire away. 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 the state. 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.

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Photo courtesy of Pasco County Utilities

Project contractors observe preconstruction dewatering flow from the site of Pasco County's half-million-gallon reuse water reservoir. Shown here, the water is flowing to a nearby lake. When operational in 2015, Pasco County will have one of the largest above ground reuse water reservoirs in the world. See story below.

Florida sues Georgia over water consumption in ACF

By SUSAN TELFORD

Gov. Rick Scott filed a lawsuit last month against the state of Georgia in the U.S. Supreme Court accusing the state of consuming too much water from the Apalachicola-Chattahoochee-Flint River basin, causing damage to the oyster beds in the Apalachicola Bay and hurting the regional economy that relies on them.

"Georgia has refused to fairly share the waters that flow between our two states, so to stop Georgia's unmitigated consumption of water we have brought the matter before the U.S. Supreme Court," said Scott in a written statement. "Georgia's overconsumption of water threatens the existence of Apalachicola Bay and the future economic development of the region."

The lawsuit asks the Supreme Court to take dramatic steps involving upstream water consumption, including capping Georgia's overall water use at 1992 levels.

The state also wants a special master to enter a decree that would equitably divide the waters in the basins of the Apalachicola, Chattahoochee and Flint rivers.

"This lawsuit will be targeted toward one thing, fighting for the future of Apalachicola," said Scott at a hearing last month in the city of Apalachicola. "This is a bold, historic legal action for our state. But this is our only way forward after 20 years of failed negotiations with Georgia. We must fight for the people of this region. The economic future of Apalachicola Bay and Northwest Florida is at stake."

The dispute over water consumption begins upstream with withdrawals from Lake Lanier, a federal reservoir on the

Chattahoochee River that provides drinking water to metro Atlanta.

The Chattahoochee and Flint rivers merge near the Florida-Georgia border to form the Apalachicola River, which then flows through Florida and into the Gulf of Mexico.

Water officials in Georgia dispute Florida's contention that metro Atlanta's consumption has adversely affected the oyster beds in Florida and insist that the recent water problems have more to do with drought rather than overconsumption.

In 2009, a federal judge ruled that metro Atlanta had little right to take water from Lake Lanier, and ordered that metro Atlanta's water withdrawals be drastically restricted unless Florida, Georgia and Alabama reach a settlement.

A three-judge panel from the U.S. Court of Appeals overturned that ruling in 2011, finding that metro Atlanta could use the reservoir for water, with

ACF
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Polk County turns to Lower Floridan for alternative water supply

By ROY LAUGHLIN

Polk County officials, convinced that substantial population growth will occur through 2035, are developing alternative water supplies so the county does not run short.

Even though current water supplies are adequate and conservation measures are being put in place, Polk utilities officials are working now on projects to tap the Lower Floridan Aquifer.

The plan is to develop four new wellfields, if they prove feasible and productive, from the LFA.

The wellfields will supply tens of millions of gallons of additional water per day.

Exploration for new water from the LFA is being orchestrated through two projects in collaboration with two different water management districts—the South Florida Water Management District and the Southwest Florida Water Management District.

While the hydrologic capacities and

geologic characteristics that influence water availability are well characterized for the Upper Floridan Aquifer, the primary aquifer tapped for Florida's water supplies, the same cannot be said for the LFA.

Both projects involve test wells in their early stages. Other than that, the projects with each of the water management districts are following different

LFA
Continued on Page 12

Clarification

In a cover story published in the November issue, the new lab auditing process was explained, along with its impact on environmental laboratories in the state. Any suggestion or inference that any particular lab interviewed for the article will suffer a negative financial impact from these changes was not intended.

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EPA: U.S. power plants released less carbon dioxide in 2012

Staff report

Carbon dioxide emissions from more than 1,600 fossil fuel power plants across the country declined 10 percent in 2012. The substitution of natural gas for coal is the primary driver, along with a slight decrease in the amount of electricity generated in the U.S.

These data are from the U.S. Environmental Protection Agency's Greenhouse Gas Reporting Program, which collects emission data from more than 8,000 large CO2 emitting facilities. Of those facilities, 1,600 are electrical power plants.

Power plants alone emitted over two billion metric tons of carbon dioxide in 2012, 40 percent of the total U.S. carbon emissions to the atmosphere.

The EPA's reporting program is now in its third year. For its recently released report, the agency calculated the change in carbon dioxide emissions for the program's first two years of existence.

This is the first time the EPA has had enough data to report the change in carbon dioxide emission rates.

Public access to the data is available through the EPA's online Facility Level Information on GreenHouse gases Tool,

FLIGHT. It breaks emissions data down by year and by source categories, such as refineries, waste, pulp and paper.

While the U.S.' contribution to greenhouse gas emissions declined in 2012, the World Meteorological Organization reported that total global greenhouse gas emissions hit a new record high.

WMO, a specialized agency of the United Nations, reported a 2.2 parts per million increase in carbon dioxide concentration in 2012, well above the average 2.02 parts per million measured during the previous decade, suggesting increases in atmospheric CO2 concentrations may be accelerating.

The atmospheric carbon dioxide concentration is now 393.1 parts per million. That is a 41 percent increase in carbon dioxide concentration compared to pre-industrial atmospheric concentrations of the gas.

District court to rule on water transfers. The U.S. Supreme Court declined

to hear a Florida water case and, in so doing, affirmed the U.S. Court of Appeals for the 11th Circuit finding that challenges to the EPA's Water Transfer Rule must first be heard in district courts before an appeals court grants a hearing.

This ends a legal saga that began in 2002 when Friends of the Everglades bought suit against the EPA. Plaintiffs asked the court of appeals for a ruling requiring the South Florida Water Management District to obtain National Pollutant Discharge Elimination System permits for transferring water from Lake Okeechobee and elsewhere through the district's canals.

In 2008, the EPA decided that such transfers do not require NPDES permits because the transfer structures themselves are not the source of pollution. Because the water is polluted, environmentalists and public health advocates challenged the EPA over its interpretation.

The issue about which court should hear the case arose because plaintiffs in district courts have only 120 days after the effective date of a regulation to bring a case. In the U.S. Circuit Court of Appeals, plaintiffs have up to six years to bring a case.

When plaintiffs brought a case to the 11th U.S. Circuit Court of Appeals in Atlanta, the court ruled that the case must go before a district court first.

By declining to review the case, the Supreme Court let stand the circuit court's decision. It also appears that the EPA's decision on NPDES permits for water transfers is confirmed.

EPA approves DO criteria for Florida waters. The EPA approved Florida's new dissolved oxygen criteria for the state's surface waters.

These new criteria will be used to protect aquatic species in Florida waters and will be used to determine the health of the state's waters and "appropriately guide restoration where needed."

The criteria will become an important component used to establish discharge limits issued by the Florida Department of Environmental Protection.

The new regulations are based on studies of Florida's ecosystems and species. They replace rules based on national studies.

The new standards are based on a multi-year comprehensive review of dissolved oxygen levels in Florida streams,

lakes, canals and estuaries. Data from the studies were widely peer reviewed. The new rules apply to fresh and estuarine waters.

Dissolved oxygen criteria are complementary to the recently accepted numeric nutrient standards, also intended to be an effective tool to maintain Florida's surface water quality. These rules, however, replace dissolved oxygen criteria already in effect.

Renewable fuel standards for 2014. The EPA is soliciting comments on a proposal to reduce ethanol blend fuel standards for 2014.

The agency proposes a 2014 blended gasoline target of 15.2 billion gallons. This is 14 percent lower than the target proposed in the 2007 Renewable Fuel Standards Act, and less than the 16.55 billion gallons target for 2013.

The EPA is also proposing to lower the cellulosic ethanol production target from 2.75 to 2.2 million gallons in advanced biofuels, although one category of cellulosic ethanol is still mandated at 17 million gallons.

The agency is not proposing to change biomass diesel targets. They remain at 1.28 billion gallons.

The EPA's proposal reflects several new realities since the Congress passed the Renewable Fuels Act in 2007.

The first factor is the decline in gasoline use in the U.S. as fuel efficient vehicles now represent a greater proportion of the cars on the road. Fuel blend targets made in 2007 reflected greater gasoline consumption, but that demand has not materialized.

Another factor is that while a 10 percent ethanol-gasoline fuel is available nationwide, acceptance of 15 percent ethanol fuels has not expanded far beyond the Midwest. And the EPA has certified that this fuel mixture is safe for use in vehicles built since 2000 only.

The EPA refers to the issue of balancing ethanol blending requirements with overall declining fuel consumption as the "10 percent ethanol wall." If ethanol biofuel targets were raised, increasing the proportion of ethanol used is the only path forward using ethanol.

Higher ethanol fuels might not be usable in all vehicles and may not be widely available. Ethanol-15 (15 percent ethanol blends) have been on the market for several years but require a separate dispersing pump that most gas stations have not installed because of a limited customer base.

Refiners who do not meet ethanol blending targets must buy "ethanol credits," which raise the price of gasoline. The EPA's proposal to lower ethanol-gasoline volume targets aims to work around the 10 percent ethanol wall, at least for the coming year.

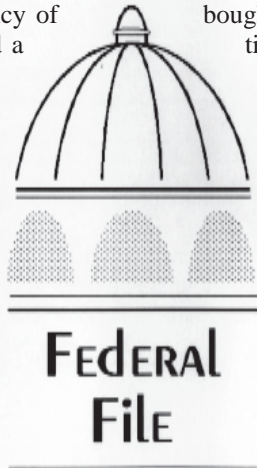
The EPA also proposed to reduce the Advanced Biofuels component of the Renewable Fuels Standards. The production of ethanol from cellulose has not advanced as quickly as proponents convinced Congress that it would.

How reductions in advanced ethanol fuels availability will affect the use of corn to make up the difference remains to be seen. About 38 percent of the U.S. corn crop is used to make ethanol for fuel.

Reports that the agency was planning to revise ethanol fuel targets have surfaced since late October. The EPA formally announced its plans to revise the rule on Nov. 15.

Climate change assessment. The Intergovernmental Panel on Climate Change said in a recently released assessment of climate change that human activity is responsible for climate change and many of the issues associated with it.

More significantly, the report states unequivocally that carbon dioxide, methane and nitrous oxide levels in the atmosphere

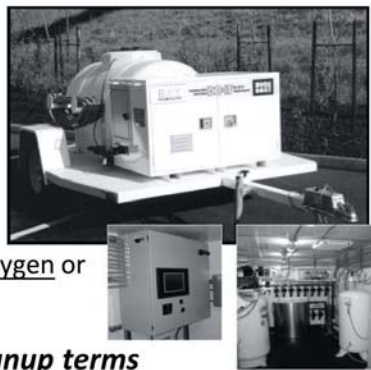


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Cleanup of Coyote Land Co. disposal facility complete

Staff report

Cleanup has been completed at a former dump site in a quiet residential neighborhood in Panama City.

The last of nearly 20,000 cubic yards of solid waste has been removed from the site that housed the former Coyote Land Co. Waste Disposal Facility. State environmental officials said the site is no longer an environmental hazard and poses no further health risks.

Coyote had a long history of compliance issues. The facility was at one time permitted as a solid waste transfer station, but the state rejected a 2010 permit renewal request and the dump site was shut down in 2011.

Costs for the cleanup project totaled more than \$500,000.

Compliance issues at DeLand plant. State environmental officials have been investigating improper waste disposal at a chemical plant west of DeLand.

The regulatory probe is ongoing at Thatcher Chemical Co. The Florida Department of Environmental Protection said in its initial report that the company was not following standard operating procedures for the proper management of their solid and liquid wastes.

Neighbors have complained that toxic substances being released were affecting wildlife near the plant that manufactures industrial chemicals.

Tallahassee shifts to single stream. The city of Tallahassee has launched an alternative recycling method known as single stream.

The process, which applies to all solid waste, is expected to help increase the volume of recyclable materials and improve operational efficiencies.

Cans and bottles can now be recycled together with newspaper and cardboard. The city hopes to increase recycling participation by eliminating the sorting process at the customer level.

Solid waste experts said that more efficient routes and operations will reduce vehicle fuel consumption and carbon emissions.

All recycled materials collected will continue to be sold to local processors and companies that make new products from the material.

Duke Energy settlement. The Florida Public Service Commission approved a controversial settlement with Duke Energy concerning Duke's Crystal River nuclear power plant and a proposed new plant in Levy County.

The decision officially makes Duke's customers responsible for up to \$3.2 billion of the costs related to the now shuttered Crystal River nuclear plant and the canceled Levy County project.

Under the agreement, the average residential customer will pay \$5.62 a month starting in January.

Tampa port expansion. The Tampa Port Authority unveiled a new \$56 million petroleum terminal complex built to keep the region's cars and planes fueled for decades into the future.

The project represents the largest capital investment in port history. The cost was divided between the port and the state of Florida.

The port supplies automobile and passenger plane fuel for Florida residents.

The new petroleum terminal was built on top of the old one. It took two years to finish the first phase. Both new berths are now operational.

The next phase of the project will add a third berth, expected to be complete sometime in June next year.

The Port of Tampa receives about 500 petroleum ships a year and offloads 2.4 billion gallons of fuel from them annually. It will now be able to handle bigger ships and more capacity.

The new berths were designed to unload any product for any company. There

are 38,000 feet of pipeline connecting the berths to a central station.

Disney conservation grant. The Florida Fish and Wildlife Conservation Commission received a \$25,000 grant from the Disney Worldwide Conservation Fund to restore 20 acres of scrub habitat in the Lake Wales Ridge Wildlife Environmental Area in Highlands and Polk counties.

The work at Lakes Wales Ridge WEA involves removing invasive exotic plants and reestablishing native plants such as saw palmetto, scrub palmetto and scrub holly.

The Disney Worldwide Conservation Fund works to protect species and habitats, and connect kids to nature to help develop lifelong conservation values.

Since its founding in 1995, DWCF has supported more than 1,000 conservation programs in 112 countries.

Environmental award. Barbara Goering, vice president of the Miami Corp., has received a Florida Department of Agriculture and Consumer Services En-

vironmental Leadership Award on her company's behalf for creating the Farmton Local Plan, a 50-year plan for managing and developing the 59,000 acres of timberland it owns on land that straddles Volusia and Brevard counties.

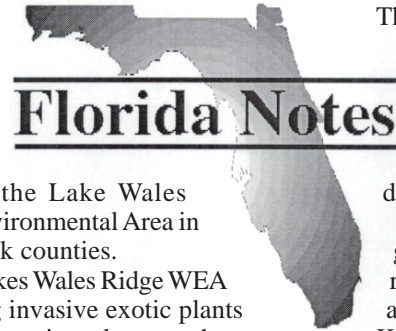
The Farmton plan covers 47,000 acres in southern Volusia County. Of that, 32,000 acres was set aside for long-term conservation and 15,000 acres were designated for development.


The award was one of three given in 2013. The other two recipients were Dudley Calfree at Ferris Farms in Floral City and Kissimmee Park Properties LLC in St. Cloud.

New chief at conservancy. Rob Moher was selected as the new president and chief executive officer of the Conservancy of Southwest Florida.

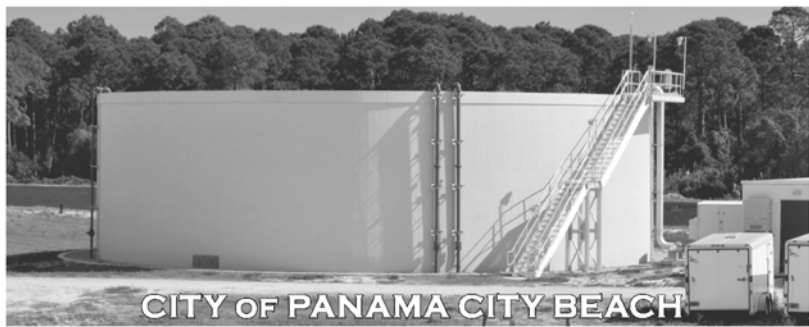
Moher, formerly the organization's vice president of development and marketing, had been serving as interim chief operating officer since July.

Moher brings more than 25 years of experience in local, regional and international conservation organizations to the top position at the conservancy.

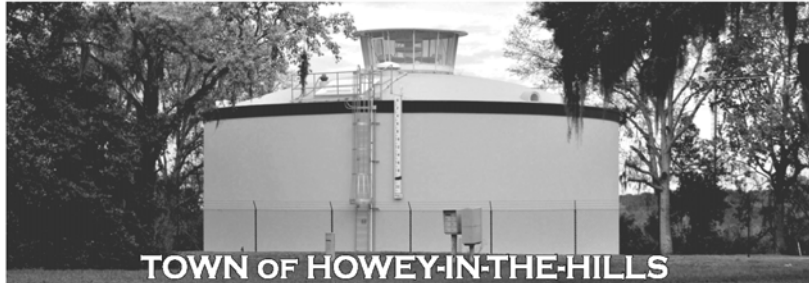




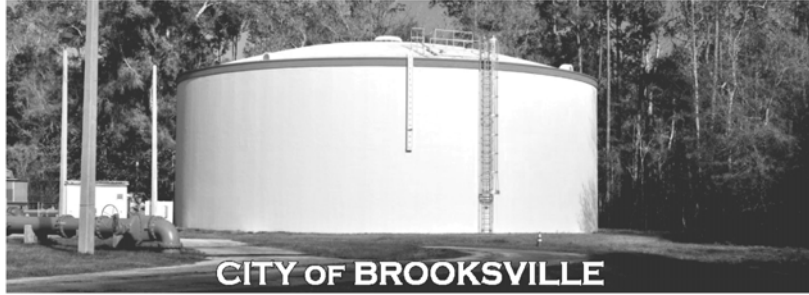
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DEP approves five wastewater injection wells for Gulf Power plant

Staff report

The Florida Department of Environmental Protection approved five wastewater injection wells for Gulf Power Company's Lansing Smith plant located in the community of Southport in Bay County.

The five-year permit will allow for the disposal of up to a million gallons a day of treated coal ash wastewater.

The wastewater wells will be drilled between 2,000 to 7,000 feet deep—hundreds of feet deeper than nearby residential water wells.

Gulf Power representatives said the well project will reduce the amount of intake cooling water Gulf Power uses from St. Andrew Bay at its newest generating unit, and will also reduce the amount of process water the company releases into the Gulf of Mexico.

Keys sewer project spurs lawsuit. A lawsuit was filed last month by Cudjoe Key resident Walt Drabinski to halt construction of a \$150-million sewer project that would serve the Lower Keys.

Drabinski stated in the suit that densely populated areas like Cudjoe Key would

better served by using gravity sewer systems, not the low-pressure systems and grinder pumps installed by the Florida Keys Aqueduct Authority from Sugarloaf Key to Big Pine Key, managed by the Cudjoe Regional Wastewater System.

Gravity sewers do not require electricity or the use of generators, so it is perceived that the system is a better choice for the Lower Keys during flooding, tropical storms and hurricanes.

Drabinski, an electrical engineer and CEO of Vantage Energy Consulting, said that the system that FCAA chose is cheaper initially, but it will end up costing significantly more in the long run.

FCAA Executive Director Kirk Zuelch argued that detailed plans dating back to 2009 include the use of low-pressure systems in some of the densely populated areas, and that the design is a hybrid system that includes the use of gravity, low-pressure grinder pumps and on-site systems.

Deltona wastewater treatment plant. Officials with the city of Deltona recently broke ground on a \$25-million wastewater treatment plant located on the eastern edge of the city.

The new treatment facility will provide the needed capacity for a developing commercial corridor along State Road 415 and will serve future communities.

The plant's design will also help protect the area's sensitive environment, including nearby springs, from wastewater runoff.

The anticipated completion date is mid-2015.

Water quality projects in NW. The Northwest Florida Water Management District Governing Board approved approximately \$1 million in funding to help the city of Panama City complete stormwater treatment projects expected to improve water quality in the St. Andrew Bay watershed.

The stormwater systems will be installed in multiple sub-basins within the city. Currently, runoff flows directly into Watson Bayou with little treatment.

Retrofitting the stormwater system will significantly improve water quality before it discharges into St. Andrew Bay.

The district's governing board also approved a \$2.5 million grant to help the city of Apalachicola with projects that will help improve water quality in Apalachicola Bay.

The grants will fund the design and construction of three stormwater retrofit projects within the city.

All projects involve retrofitting existing drainage systems to capture and treat stormwater runoff, removing pollutants before the water is released into the bay.

The improvements will also provide flood protection to the community.

The three proposed projects include the U.S. 98 and 16th Street Stormwater Quality Improvement Project, the Prado Outfall Stormwater Quality Improvement Project and the Avenue 1 Water Quality Improvement Project.

Highlands County restoration. The South Florida Water Management District approved a restoration project in Highlands County that will store water, and reduce nutrients and stormwater runoff before it enters Lake Okeechobee.

Located in a 19,000-acre watershed northwest of the Lake O, the project is comprised of three shallow above-ground impoundments.

The \$2 million expenditure advances the project to the next step—final design and construction of the first impoundment.

At 308 acres filled 3.5 feet deep, the first impoundment will hold approximately 900 acre-feet of water.

Scientific study and computer modeling have shown the project, combined with the use of best management practices on local farms, could reduce 70 percent of the phosphorus and 60 percent of the local stormwater runoff flowing into the Harney Pond Canal, which flows into Lake Okeechobee and ultimately the Everglades.

Bridge turned into reef. Forty-ton concrete sections from the old Pinellas Bayway Bridge were recently dropped into the Gulf of Mexico to form an artificial reef site.

The 1,200-foot long by 15-foot high reef is composed of 40-ton sections of concrete—cleaned and stripped of anything harmful or toxic to the oceanic environment—submerged 45 feet deep in the gulf.

According to some experts, concrete structures are the best possible artificial reef materials.

Toxic algae levels in Clay County. The highest levels of toxic algae ever recorded in the area were recently discovered in water samples taken at Doctors Lake Marina along the St. Johns River south of Jacksonville.

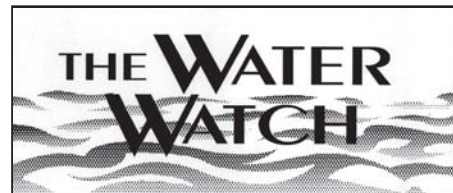
Test results released last month by the St. Johns River Water Management District showed total microcystin toxin levels at 1,120 and 4,350 micrograms per liter—50 to 200 times higher than the World Health Organization's recommended 20 micrograms per liter.


It's also twice the level found in the river near Jacksonville University by St. Johns Riverkeeper, and triple the level found in 2005.

The Florida Department of Health in Duval County released public warnings to refrain from recreational water use that could result in ingestion or skin exposure to algal blooms, to keep children and pets away from shoreline where they might be exposed to blooms, and to avoid consuming fish caught in or near the algal blooms.

Blue-green algae toxins can affect the liver, nervous system and skin causing abdominal cramps, nausea, diarrhea, and vomiting. Ingesting airborne droplets can cause irritation of the skin, eyes, nose and throat.

Irrigation apps. The University of Florida released three smart device apps





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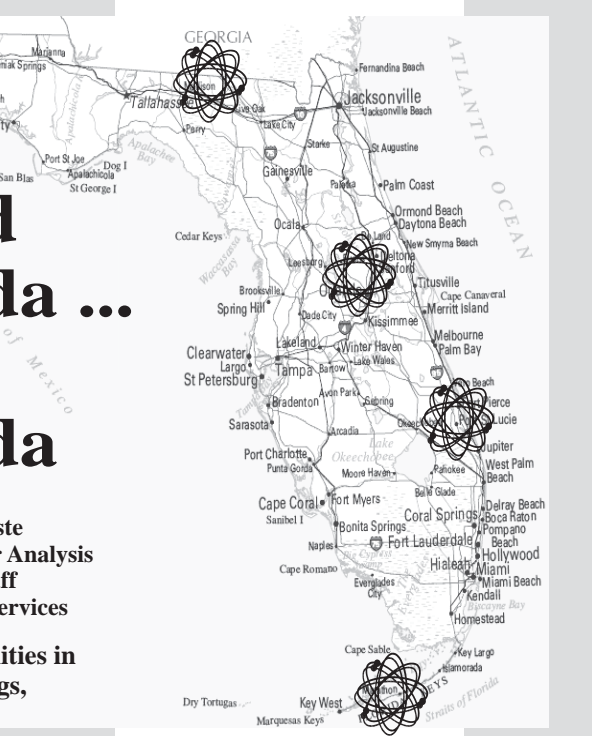
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SRWMD to rehydrate Mallory Swamp to increase water to streams, aquifer

By ROY LAUGHLIN

The Suwannee River Water Management District has begun an ambitious effort to reverse the impact of decades of draining by raising the water level across about 30,000 acres of Mallory Swamp in Lafayette County.

Increasing the water level will restore Mallory Swamp's original role as a source of water for streams west of it and to the Upper Floridan Aquifer, which feeds springs on the swamp's east side that drain to the Suwannee River.

The project includes several components including water quality monitoring, test well drilling to determine aquifer characteristics, water flow control structure construction and aquifer recharge well construction.

The first two project components are underway. Over the next 15 months, the district will modify ditches on the 30,000 acres of land to stop drainage of the swamp.

According to Steve Minnis, governmental affairs and communications director at the district, Mallory Swamp has been drained over many decades by ditches that carry water from the swamp to other surface bodies that did not naturally receive that water.

The construction component of this project will block those ditches with boulder check dams.

WATCH From on Page 4

for the irrigation business. Designed for citrus, strawberry and urban turfgrass irrigators, the apps are designed to be easy and quick to use.

They incorporate real-time data and irrigation science with simple user input to produce site-specific irrigation run-times.

The apps provide real-time information to users with data constantly updated from the Florida Automated Weather Network and the Georgia Automated Environmental Monitoring Network.

The apps are designed for use with manual or time-based irrigation systems. Users download the app, plug in their individual details—such as location, root depth and irrigation zones—and the app uses that input and site-specific weather data to create an irrigation schedule.

Details about all three of the free newly released apps can be found at <http://smartirrigationapp.org>.

Naval Air Station wins award. Naval Air Station Whiting Field was recently recognized with an award from the Florida Department of Environmental Protection

“We’ll use those ditches to disperse water back into the swamp,” he said.

As water flow modifications occur, the expectation is that 4,000 acres of marsh will be rehydrated and nearly 1,500 acres of sandy bottom lakes will refill. The construction project to modify the drainage system should be completed within about 18 months.

The SRWMD is currently in permitting discussions with the Florida Department of Environmental Protection for the aquifer recharge wells, the plan's final component. The efforts are not phased because of functional relationships.

Aquifer recharge wells will be drilled as the final step only because it takes longer to get permits and then drill the wells.

Mallory Swamp functioned historically as a source of water because it is on land with a higher elevation than the Suwannee River on its east and land to its west that has several rivers that flow to the Gulf of Mexico.

The expectation is that the Mallory Swamp's wetlands will be a reservoir for surface water that will spill over to streams on the west side of the swamp.

Under Mallory Swamp, the Floridan Aquifer's potentiometric surface is higher than in surrounding areas. The aquifer feeds adjacent springs, many of which contribute water to the Suwannee River, and perhaps even the Ichetucknee River.

The district's primary goal is to meet

for outstanding water systems and programs.

Named the best “Small Community Water System” for DEP's Northwest District for the second consecutive year, the base finished first out of more than 100 eligible locations.

NAS Whiting Field's water management team was selected for maintaining a system that consistently produced high quality water, sampling the water for contaminants more often than required, and performing more maintenance than state law mandates.

Reuse award. The WaterReuse Association presented A. Randolph Brown, utilities director with the city of Pompano Beach, FL, with their 2013 Person of the Year Award.

The annual award recognizes an individual that has made a significant contribution to advancing water recycling.

His focus on outreach and communications has helped to double the number of customers and the distribution system size since 2003. In just two years, the system has grown from 73 to more than 500 single-family residential connections.

the statutory requirements for the minimum flows of magnitude 1 and magnitude 2 springs on public land.

Minnis was quick to point out that all springs in the area will benefit from increased water flows when the project is complete. The district's focus on magnitude 1 and 2 springs occurred primarily because of statutory requirements to specifically maintain their flows.

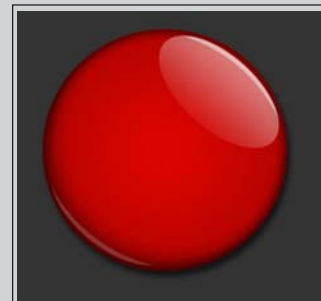
The Mallory Swamp restoration project

is budgeted at \$1.6 million. The lion's share of it, \$1.548 million, will come from DEP. \$277,000 will come from the SRWMD and Dixie County is providing \$75,000.

Minnis said that DEP's share is part of the \$10 million recurring appropriation for spring rehabilitation.

This year, the Florida legislature approved an appropriation bill to supply that funding.

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Progress being made on cleanup of large petroleum plume in Parker

By PRAKASH GANDHI

State environmental officials are making significant progress with cleaning up contamination in the small city of Parker in Florida's Panhandle.

The Parker site has been dubbed an imminent threat by the Florida Department of Environmental Protection due to a large petroleum plume.

Leaking underground gasoline tanks introduced pollution into groundwater wells that will take several years to correct in the Bay County city, according to officials.

But while they remain vigilant, DEP officials said the most serious threat to public health and the environment has been abated.

"Whole portions of the site are still contaminated. But it is important to recognize that citizens are no longer exposed to this contamination in their drinking water," said DEP spokesperson Mara Burger.

All residents whose drinking water wells were contaminated have been connected to the public water supply.

The site has a long history. Contamination was first discovered more than 20 years ago after underground petroleum storage tanks were removed.

The contamination was determined to be eligible for state-funded cleanup funding under Florida's Petroleum Liability and Restoration Insurance Program originally created in 1988.

Ten years later, site assessment work revealed a large groundwater plume covering several acres and extending to more than 100 feet below land surface, Burger said.

Remediation efforts in the source area started in 2007 with air sparging and soil vapor extraction in the city of Parker maintenance area.

Compressed air was injected below the water table, causing the dissolved gasoline contamination to volatilize.

Burger said this system operated for several years and successfully cleaned up the most highly contaminated section of the site to contaminant levels below the state's cleanup target levels.

Because of the large size of the plume, remediation efforts for the contamination that lies outside the source property are proceeding in a phased approach, Burger said.

A portable AS/SVE system was installed north of the source area in October, 2008, and was operated for several years. This area was also restored to below the state's CTLs.

Then, last December, AS/SVE operations were expanded to address contamination near the maintenance yard on an adjacent church property.

In this area, a slightly different remedial strategy, bio-sparging, was chosen due to site conditions.

"Bio-sparging uses lower air flow and does not require the added complexity of a soil vapor extraction system," Burger said.

The system started up in November and is expected to operate for at least six months.

Other drinking water supply wells near the site are being monitored by the Florida Department of Health as part of a water supply surveillance program.

"If any of these wells are found to be contaminated as a result of this site, the well owners will be connected to the public water supply system," Burger said.

The site continues to be managed under imminent threat status because there are still a few active potable wells down gradient it.

Irrigation wells remain in use and pe-

troleum contaminated groundwater has migrated toward a surface waterbody known as Pratt Bayou.

"However, the depth of the contaminated plume is well below land surface and is unlikely to have any impact on the surface waterbody," Burger said.

About \$2.4 million has been spent so far on assessment and remediation efforts.

DEP said the most highly contaminated portion of the site has been restored to where groundwater meets the most stringent health-based safety standards.

Additional work is ongoing to address the off-site contamination and prevent further migration of the plume.

Parker city officials are looking for ways to decrease the number of residents who still drink well water.

City council members were planning to consider stricter enforcement of requirements for residents within 100 feet of public utilities to use city-provided water and sewer services.

About 40 homes in Parker are either not tapped into the city's water, sewer or both.

SFWMD approves purchase of Mecca Farms from Palm Beach County

By SUSAN TELFORD

The South Florida Water Management District Governing Board approved the \$26 million purchase of Mecca Farms from Palm Beach County in late October.

The property was once slated to become the new center of the biotech industry in the state with spin-off business parks and large residential communities envisioned.

The district now plans to build a reservoir and turn the land into a key Everglades restoration project.

Palm Beach County invested over \$150 million of taxpayer money into the failed development effort at the 2,000-acre former citrus grove, including the \$60 million expenditure to buy the land during the real estate boom of the mid-2000s.

A combination of environmental concerns regarding the size of the development within surrounding sensitive wetlands and Scripps Research Institute's opting for a location near Florida Atlantic University's Jupiter campus quashed the project several years ago.

Palm Beach County reserved 150 acres of the property for a proposed shooting range adjacent to the 60,000-acre J.W. Corbett Wildlife Management Area.

The Florida Fish and Wildlife Conservation Commission will run the public shooting range. Future plans call for trap and skeet shooting, pistol and rifle ranges, as well as clubhouse, a pro shop and spectator stands.

The first phase has a projected opening date of 2015.

The water management district plan to build a reservoir on the Mecca Farms property is expected to help restore area waterways by reducing the billions of gallons of polluted water being released from Lake Okeechobee into the St. Lucie and Caloosahatchee rivers that has been causing toxic algae blooms.

The district plan to spend up to \$130 million building a new stormwater treatment area that would feed the Loxahatchee River, while also allowing other water to flow south to the Everglades.

Environmental activists recently voiced concerns over the district's plan to dig a canal that would directly link the Mecca Farms property to canals that drain into Lake Okeechobee, claiming that the canals would create a new outlet for using the Loxahatchee River to dump Lake Okeechobee water out to sea.

Those plans have been temporarily stalled.

"The now side-lined proposal was an effort to provide more water management flexibility," said Ernie Barnett, assistant executive director, Everglades and Water Resources at the district.

"Limits on the Mecca Farms reservoir would not allow it to become a water discharge route for Lake Okeechobee," he said.

Barnett resigns from South Florida WMD

Staff report

Ernie Barnett, the South Florida Water Management District's assistant executive director, announced his retirement at the district's governing board meeting in November.

Barnett has been with the South district since 2005. He will remain with the district through the end of the year.

After the resignation this summer of then district Executive Director Melissa Meeker, Barnett stepped in as the agency's interim chief before Blake Guillory was named by the agency's governing board to lead the district.



Barnett

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GRU groundwater withdrawal permit request has Alachua County officials concerned with impacts

By PRAKASH GANDHI

Alachua County officials say they are concerned about the potential environmental impacts of a pending application by Gainesville Regional Utilities for a new permit to pump groundwater.

Water managers recently started reviewing the application. But officials in Alachua County have already started questioning the permit.

"One of the concerns we have is that, in the application, GRU does not acknowledge that any future pumping may have an impact on the Santa Fe River," said Chris Bird, director of the Alachua County Environmental Protection Department. "They have not made any binding commitment to deal with that."

GRU's current five-year permit will expire next August. The utility has applied to the St. Johns River Water Management District for a 20-year permit to withdraw an average of 30 million gallons per day from the aquifer.

That is the same amount that the utility is allowed to withdraw under its current

permit, but a substantial increase from the 23 to 24 mgd the utility currently pumps.

Gainesville officials said they expect the population served by the utility to increase from 190,000 to about 235,000 over the next 20 years.

But the city said it plans to hold the line on its permitted withdrawal.

Part of the city lies within the St. Johns district, the balance within the Suwannee district.

Under an agreement with the Suwannee district, St. Johns district staff—and eventually its governing board—have authority over the permitting process.

That's another concern for Alachua County officials.

Bird said the Suwannee River Water Management District has been trying to establish minimum flows and levels for the Lower Santa Fe River.

The Suwannee district has determined that the flow of the Lower Santa Fe has declined to the point where recovery strategies are needed to restore the river to good health.

"The St. Johns district is processing the application, but part of the wellfield is within the Suwannee River Water Management District," Bird said. "The groundwater is part of the Suwannee basin and that is where they are pulling the water from. The district that is reviewing the permit is not the one that is going to have most of the impact."

Bird said he believes there will be a significant impact on the river from the groundwater withdrawals.

"GRU should be addressing it in the permit application," he said. "It's obvious there is a problem there. Gainesville Regional Utilities needs to make a commitment to offset the impacts of the water withdrawal on the Lower Santa Fe River."

Officials with GRU could not be reached for comment. But the utility has said in the past that its pumping would not have an adverse effect on the Santa Fe.

GRU states in its application packet that its groundwater withdrawals occur several miles east of the river and may only potentially affect the river system.

The utility said it has not sought major increases in its permitted groundwater withdrawals. The utility had approval to

pump 29 mgd back in 2001. Further, before submitting its application, GRU staff met nine times with Suwannee and St. Johns district staff over the past year.

The GRU service area has seen its residential per capita water use decline from 101 gallons per day in 2001 to 90 in 2009 to a projected 76 on the permit now being sought.

Teresa Monson, a spokeswoman for the St. Johns River WMD, said GRU submitted an application in October to renew an existing permit authorizing the withdrawal of 30 million gallons per day of groundwater from the Upper Floridan Aquifer for public supply use via 16 active wells in Alachua County with no requested increase in allocation.

Monson said staff has started reviewing the permit and sent a request for additional information on Nov. 8. The applicant has 120 days to respond.

GRU is seeking a condition in its new permit that would allow it to withdraw up to 34 mgd as long as alternative water supply projects are put in place to offset the increase.

Officials said that based on the utility's population and demand projections, they don't anticipate needing more than 30 mgd for the life of the permit.

Jupiter Island, Martin County work to protect local waterways

By SUSAN TELFORD

The town commission of Jupiter Island collaborated with Martin County's Board of County Commissioners, producing two resolutions in September that encourage federal officials to prioritize water quality enhancement projects essential to protecting the St. Lucie Estuary, Indian River Lagoon and the Everglades.

The intergovernmental agreement also addresses coastline issues.

In a joint letter to the U.S. Army Corps of Engineers, representatives of the town and county asked for inclusion as equal partners on the team that reviews input, analyzes options and generates the draft decision document regarding the corps pursuing access to sand deposits in federal waters off Martin and St. Lucie counties' coast.

The corps is currently conducting a scooping effort to access sand deposits deemed usable for beach erosion projects further south.

Jupiter Island and Martin County commissioners outlined several concerns regarding the scoping effort and addressed a few environmental issues, including the need for the corps to conduct an environmental impact statement to explore the "irreversible and irretrievable" effects on resources, rather than conducting the environmental assessment the corps prefers.

In addition, they asked the corps to: explore sustainable solutions to erosion needs that go beyond the limited 50-year plan; assess the likelihood of accelerating the depletion of offshore sand resources; allow the use of foreign sand for beach nourishment projects in South Florida; and reserve offshore sand borrow areas for existing or planned nourishment projects within a 10-mile radius, among other concerns.

"These are vital natural resources facing significant challenges—and significant challenges are always best addressed from a unified, collaborative approach," said Gene Rauth, town manager of Jupiter Island.

"We've all witnessed how the poor conditions of Martin County's waterways impact everyone's quality of life. There's simply no escaping the consequences of a problem this widespread," said Rauth.

"Certainly, the same holds true for our beaches," he said. "Without the sand to nourish and protect our shorelines from erosion and concerns over rising sea levels, beach access, public safety, property values and the county's overall tax base could suffer tremendously."

Last month, Speaker of the Florida House of Representatives Will Weatherford toured the Treasure Coast with State Senator Joe Negron to learn more about the area's waterways and toxic water situations plaguing the region.


A newly finalized Senate report estimates that it will take about \$220 million in state funding to ease the Lake Okeechobee discharges alone.

Two joint resolutions offer support for the C-44 Reservoir, stormwater treatment areas and the Water Resources Development Act of 2013.

Gov. Rick Scott recently committed \$40 million to the C-44 project to help ease the massive Lake Okeechobee discharges that have been flowing untreated, upsetting the salinity of the St. Lucie Estuary and southern portions of the Indian River Lagoon and threatening over 3,000 plant and animals species that make the lagoon one of the most biologically diverse in the country.

However, even with the funding promised by the governor and the \$20 million Negron procured from the state Legislature for Phase 3 of the C-44 Reservoir, the second phase of the project is estimated to cost close to \$270 million to "make the water right."

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More testing scheduled for Coconut Grove park in Miami-Dade County

By DAN MILLOTT

The city of Miami will install two more groundwater monitoring wells in Blanche Park in the Coconut Grove section of the city, according to Miami-Dade County environmental officials.

Since August, when contaminants were first discovered in the soil of Blanche Park and Merrie Christmas Park, a series of tests have been conducted in parks throughout Miami-Dade.

The 5.38-acre Merrie Christmas Park

remains closed but Blanche Park is open while testing continues.

Wilbur Mayorga, PE, chief of Environmental Monitoring & Restoration for the Miami-Dade County Division of Environmental Resources Management, said that while earlier tests showed limited amounts of contamination in groundwater, that has no impact on the public's drinking water since it comes from the county's water distribution system that draws its supply from the Biscayne Aquifer, many feet below land surface.

In Coconut Grove, the water table is

just nine feet below the surface.

Mayorga said that so far the tests show that only one chemical, antimony, was found in unacceptable quantities. Antimony can cause lung and heart disease. It is commonly used in the manufacture of batteries, ceramics and paint.

In Blanche Park, additional testing wells are being installed in a playground area about 90 by 110 feet.

"The contamination was probably introduced in the 1940s or 1950s before any regulations existed," said Mayorga. "Contamination could have come from multiple sources, so we really can't pinpoint its origin."

Mayorga said the latest testing will pull samples from four feet below land surface instead of two feet as was done in earlier testing.

The Blanche Park property was origi-

nally purchased by the city as an ash dump in 1943 and converted into a park in 1962. No soil or groundwater cleanup work has ever been undertaken. In 2010, the city began installing artificial turf and asphalt to cap the soil.

Since toxic metals have to be ingested to be harmful, the city believed the cap would prevent harm to park users.

In late October, the city sent Miami-Dade a proposed sampling plan drafted by the city's consultants for the still-closed Merrie Christmas Park.

The county requested that polychlorinated biphenyls be included as a contaminant of concern when tests are conducted. They also want a larger zone to be sampled for dioxins.

The county's letter to the city, dated Oct. 25, gave the city 60 days to complete the testing at Merrie Christmas Park.

Activists take issue with state program to sell surplus conservation land

By BLANCHE HARDY, PG

From 1990 to 2008, the state's primary conservation and recreation lands acquisition program, Florida Forever, received an annual allocation of \$300 million from the state budget.

But in response to the economic downturn that began in 2008, the program received substantially lower annual allocations of five percent or less of previously allocated levels, roughly \$15 million.

This year, Florida's state budget reflects a surplus that allows the Florida Department of Environmental Protection to request \$20 million in new Florida Forever funding, as well as permission to spend an additional \$20 million gained through the sale of "non-conservation" lands.

Environmental advocacy organizations including Audubon Florida, the Nature Conservancy and 1000 Friends of Florida are uncomfortable with the modesty of the requested budget allocation, given the circumstances of surplus lands and the sale of existing state-owned land that has been reclassified as non-conservation land.

Activists have also expressed concern over the methodology being used by the state to determine which existing conservation or recreation lands should be reclassified as non-conservation.

"I'm troubled by the use of a GIS computer model to essentially create a standard for interpreting the Constitution," wrote former Florida Audubon President Clay Henderson to DEP Secretary Herschel Vinyard. "As described on your

web site, the model was developed from the use of 'dots,' a 'point system,' a 'course filter' and 'criteria weighted models,' among other things."

According to Henderson, there is no basis in law for the use of a computer model or point-based weighted criteria to support determination of conservation versus non-conservation lands declaring their use "an incipient agency policy for which rulemaking should be required."

Henderson pointed to lands within the Broussard Preserve as an example.

"Simply stated, the lands proposed to be surplus within the Broussard Preserve contain rare habitat for imperiled species consistent with the overall purpose of the preserve. If the Broussard Preserve is still required for conservation purposes, it only follows that all those lands within the approved project boundary are still required for conservation purposes," he wrote.

Advocates also question why non-conservation lands that have not been previously designated as "conservation"—such as surplus infrastructure parcels acquired but not used for roadways—are not being sold instead.

This is of particular interest to the advocates given that some conservation lands, such as the heart of Allen David Broussard Catfish Creek Preserve State Park, are the result of private dedications of critical habitat to the public in the public's interest.

In addition to the issue with the sale of conservation acres is the transfer of \$18 million of the state's \$75 million allocation of funds for Everglades restoration and water quality improvements to conservation land acquisition.

For advocates, this represents a loss of funds intended by statute specifically for Everglades restoration in order to purchase lands, instead of restoring funding dedicated to Florida Forever which exists specifically for that purpose.

DEP initially had permission to sell \$50 million worth of conservation lands to acquire new property.

But the department has worked cooperatively with activists and the public to remove 51 properties from the surplus list within 22 parks and preserves as well as other acreage, reducing the number of acres available for surplus to 3,409 at last count.

The state's Florida Forever program created conservation areas preserving habitats for numerous species of plants and wildlife, frequently preserving what are now the last remaining areas populated by these species on the planet.

It is sometimes easy to forget that Florida, due to its unique geography and location on the cusp of tropic and subtropic climates, generates more truly unique habitats than most areas of the planet.

Activists continue to point out that preserving these habitats isn't just a local issue, it is the global responsibility of a civilized nation to preserve the wealth for its children's future.



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GREC, Alachua County at odds over biomass plant's air quality impact

By PRAKASH GANDHI

Alachua County officials say they will continue to try to resolve environmental issues related to the Gainesville Renewable Energy Center even though a permit modification request has been withdrawn.

The county had filed a petition to challenge the permit modification by GREC. But officials with the center have withdrawn their permit request, according to Chris Bird, director of the Alachua County Environmental Protection Department.

The Florida Department of Environmental Protection planned to issue an air permit to the center as a modification to an existing plant permit.

But the Alachua County Commission voted to petition for an administrative hearing.

County officials were concerned about odor, and fugitive dust carrying over from the biomass plant into surrounding areas, including the county's public works compound.

"We have had some problems with the fugitive dust leaving the GREC facility," Bird said. "It's been a recurring problem and employees have had to deal with health problems such as respiratory issues and eye irritation.

"We were in the process of preparing for an administrative hearing that had not been scheduled yet," he said.

DEP announced in October that it intended to issue an air permit meant to modify GREC's existing air construction permit.

GREC is operating under a state-issued construction permit that is effective until the end of 2014.

Proposed permit modifications included removing a requirement for GREC to complete a final management plan for

minimizing the fugitive dust, insuring an adequate level of fire prevention and better managing biomass piles at least 180 days prior to the plant becoming operational.

Bird said the county will remain vigilant.

"Just because they (GREC) withdrew their request does not mean we don't have concerns," he said. "Our plan is to continue to work with them and see if improvements can be made in terms of air emissions.

"They have said they are going to make some improvements," he said. "But I'm sure it's going to take some time before we see how effective those improvements are."

Bird said nearby residents have complained about the noise and odors emanating from the facility.

In October, county commissioners decided to submit a notice of its intent to challenge DEP's air permit if dust and noise problems associated with the plant were not resolved.


County officials said the dust problem has been bad enough in recent weeks that some employees have worn masks because they had trouble breathing.

The county has also directed staff to focus on the fugitive dust issue and to send letters to the cities of Alachua and Gainesville inviting them to participate in the process.

Dust from the biomass plant is not a continuous problem, Bird said.

But he said it is still an issue that needs to be addressed and that it is important for county employees to have a safe place to work.

Bird said that the county would rather avoid having to go to an administrative hearing, which can be both costly and aggravating.



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DEP takes steps to ensure clean air while reducing fees for industrial emitters

By SUSAN BEASON

Recent changes to Florida's major source air emission fees incentivize lower emissions from industrial facilities and make the state a more attractive place to live, visit and do business.

In 2013, the Florida Legislature established a more equitable fee program for major Title V sources, authorizing fees to be paid on actual—rather than allowable—emissions, encouraging these facilities to emit fewer pollutants.

Major sources operate under Title V permits that are required by the federal Clean Air Act.

In Florida, the state Department of Environmental Protection is the agency in charge of implementing the permitting program with help from its six district offices and approved local programs.

Most Title V sources are required to pay annual emissions fees calculated pursuant to a statutory formula.

In the past, Florida calculated these fees by multiplying a per-ton fee factor against the amount of pollutants a facility was al-

lowed by permit to emit.

The 2013 statutory changes amended this formula so that facilities now multiply the per-ton fee factor against actual—rather than allowable—emissions.

The new formula encourages facilities to emit fewer pollutants because of a direct correlation with fee reduction.

The department is undertaking rule-making to make the changes effective for calendar year 2013 emissions (to be paid in 2014) and estimates that the new formula will save Title V sources about \$1.1 million annually.

In addition, the statutory changes extended the annual state fee-payment deadline from March 1 to April 1, which coincides with the due date for federal emissions reports.

The department estimates that consolidating these requirements will save Title V facilities \$500,000 in aggregate by eliminating the need to compute and submit separate emissions calculations, simultaneously increasing department efficiency.

The recent fee changes stand in stark

contrast to proposed changes in other states, including Pennsylvania, which requested a nearly 50-percent hike in its annual emission-fee multiplier.

Pennsylvania officials say the fee hike, from \$56 a ton to \$85 a ton, is necessary because of declining revenue as high-emissions facilities shut down and pollution-control technology improves.

The state's Title V oversight program is expected to have a \$12 million budget gap by 2015.

In contrast, Florida's Title V trust fund is in good fiscal health. The state and its local program partners have reduced operating costs while maintaining a high quality program.

In fact, air emissions in Florida were at their lowest in 2012 since the state began recording the in 1985.

As a result, Florida also is experiencing declining revenue. Yet the state has sought ways to share its savings, including these fee reductions.

In addition to the statutory changes discussed above, the state recently reduced

its Title V fee multiplier from \$30 a ton to \$27 a ton for emissions during 2013.

The department also provided a "fee holiday" to smaller Title V sources.

Ultimately, 281 businesses kept their 2012 air emissions low enough to qualify, with 78 reducing emissions a total of 1,885 tons.

Pennsylvania's Environmental Quality Board argues that decreasing revenue for the Title V program will reduce protection of the environment and public health.

However, Florida's achievements show that it is possible to safeguard the environment while still finding ways to reduce expenses, and ultimately the fees paid by emitters.

Susan Beason is a public information specialist in the Florida Department of Environmental Protection's Office of External Outreach & Public Education in Tallahassee.

Funding approved for SFWMD alternative water supply projects

Staff report

The South Florida Water Management District approved funding for 14 alternative water supply and water conservation projects for the coming year.

The district will invest close to \$600,000 for these efforts through its Alternative Water Supply Program and Water Savings Incentive Program.

"Partnerships that support conservation efforts and alternative supplies are important to meeting South Florida's future water needs," said SFWMD Governing Board Chairman Daniel O'Keefe. "Because droughts are inevitable, we are continuously seeking opportunities to develop sustainable water sources."

Created a decade ago, WaterSIP provides matching funds to public and private water providers or to large users to implement water-saving technologies.

In the first decade of the program, the district funded approximately \$4.6 million in 161 projects throughout the district.

These projects saved an estimated 2.67 billion gallons of water per year, or 7.3 million gallons of water per day.

From 1997 to 2013, the AWS Funding Program, in cooperation with the state of Florida, provided funding of more than \$190 million for 482 alternative water supply projects.

To date, these projects have created 436 million gallons a day of water supply capacity, reducing reliance on freshwater sources.

Alternative water sources diversify South Florida's water supply while reducing the region's dependence on traditional freshwater resources and improving a community's ability to withstand drought impacts.

The development of alternative water supplies is an important component of the district's regional water supply plan. Updated every five years, the plans create a framework for future water use decisions and establish strategies to meet future water demands.

Cleanup industry raises over \$20K for charity

In early November, Mike Eastman, publisher of the *Florida Specifier* and manager of the Florida Remediation Conference, presented a check for \$20,500 to Anne Noble, senior development coordinator with the Juvenile Diabetes Research Foundation in West Palm Beach.

The donation topped last year's record gift to Kids Beating Cancer.

"It's a real treat for me to be able to represent our industry in providing this level of support to such a worthy group," said Eastman.

Next year's FRC charity has already been named: NOPE, the Narcotics Overdose Prevention and Education Task Force.



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Florida this spring for our 3rd Annual FRC-South Conference—this time to the Bahia Mar on Fort Lauderdale Beach on May 8-9, 2014.

We plan to serve up a day and a half of technical sessions on soil and groundwater cleanup, with an emphasis on the unique geology and regulatory framework of South Florida.

We have started accepting 250-word abstracts on the subjects listed to the right. E-mail abstracts to Mike Eastman, conference manager, at mreast@enviro-net.com.

Questions about the technical program agenda?

E-mail the above address or call us at (407) 671-7777.

2014 Exhibit Space Availability

A floor plan will soon be available with several dozen booth spaces.

If you exhibited at last year's FRC-South conference, you will have first shot at space for the 2014 event.

If your firm did not exhibit at FRC-South last year and you are interested in doing so in 2014, contact Mike Eastman at mreast@enviro-net.com.

Calendar

December

DEC. 2 – Course: Backflow Prevention Recertification Review, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 3 – Course: Backflow Prevention Recertification Exam, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 4-5 – Course: Initial Training course for Landfill Operators and Material Recovery Facilities-16 Hour, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 4 – Course: 4-Hour Refresher Course for Spotters at Landfills, C&D Sites and Transfer Stations, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 4 – Course: 8-Hour Training Course for Spotters at Landfills, C&D Sites and Transfer Stations, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 4-6 – Conference: Florida Stormwater Association Winter Conference, Orlando, FL. Call 1-888-221-3124 or visit www.florida-stormwater.com.

DEC. 4-7 – 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.treeo.ufl.edu.

DEC. 5 – Course: Backflow Prevention Recertification Review, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 5-6 – Workshop: Florida ADA/PT Training, Royal Palm Beach, FL. Presented by LDCFL Inc. Call (561) 753-0483 or visit www.ldcfl.com.

DEC. 6 – Course: Backflow Prevention Recertification Exam, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 7-15 – 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.treeo.ufl.edu.

DEC. 8 – Course: Backflow Prevention Recertification Exam, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 8-9 – Course: Phase 1 Environmental Site Assessment and All Appropriate Inquiry Training Course, Jacksonville, FL. Presented by the International Society of Technical and Environmental Professionals. Call (850) 558-0617 or visit instep.ws.

DEC. 9 – Course: Backflow Prevention Recertification Exam, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 9 – Course: Lead: Renovation, Repair & Painting - Refresher, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 10 – Course: Lead: Renovation, Repair & Painting, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 9-13 – Course: Wastewater Class A Certification Review, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

DEC. 10-13 – Course: Wastewater Class B Certification Review, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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DEC. 20 – Course: Backflow Prevention Recertification Exam, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

January

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JAN. 3-4 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 6-10 – 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.treeo.ufl.edu.

JAN. 10-18 – Course: Backflow Prevention Assembly Tester Training and Certification, Fort Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 14-16 – Course: Introduction to Electrical Maintenance, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JAN. 14-17 – Course: Water Class C Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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The *Florida Specifier* welcomes columns, articles and letters to the editor on any subject or issue pertinent to the environmental, regulatory and technical areas the newspaper covers. We reserve the right to edit all submissions for newspaper style and publish submissions on a space-available basis.

LFA
From Page 1
trajectories.

The first project, the Southeast Wellfield Project, a collaboration with the South Florida district, is further along than the collaboration with the Southwest district.

The Southeast Wellfield Project has already completed a successful experimental well at a site south of Lake Weohyakapka, east of Lake Wales. It is producing two million gallons per day of water, enough to consider the test well a success.

Polk County Utilities personnel are currently negotiating a desired 40-year permit with the SFWMD to develop a wellfield with as many as 15 wells to supply up to 30 million gallons per day, according to Polk County Utilities Division Director Gary Fries, PE.

The new wellfield lies within SFWMD's border but the water will be distributed through a pipeline system to a substantial portion of Southeast Polk County, an area that is in SFWMD's territory.

By 2023, Polk County Utilities hopes to have 15 wells producing a total of 30 million gallons per day.

The second project consists of several components in Polk County. Most of Polk

County is in the Southwest district, which is closely involved with efforts to produce and distribute additional water throughout the county.

SFWMD is taking a lead role in planning and drilling three additional LFA test wells dispersed across Polk.

The plan is to drill test wells near three candidate towns whose water needs are expected to exceed available supplies before 2021: Winter Haven, Haines City and Frostproof.

The Southwest district will pay for the exploratory wells. If findings are sufficiently promising in terms of water yield and quality, they will sell the well to the local government utilities.

If a local government decides not to use the deep well, the water management district will maintain ownership and use the well for monitoring.

Winter Haven has already established an agreement with the SFWMD. Haines City and Frostproof are still weighing their decisions.

The water management district is apparently committed to the three wells. If any of the three cities approached cannot participate for technical reasons or decide to opt out, other Polk County cities may be offered the opportunity for a well.

Fries said that negotiations between the district and the cities involve determining that the cities have sufficient land that meets technical and regulatory criteria for a well site and any other related wellfield requirement.

The negotiations center on technical feasibility rather than volition of the two cities.

At the time this article was prepared, both Frostproof and Haines City were still in the determination phase but expectations are that they will be the sites of the two other wells.

The costs for these projects are significant. Each well drilled to the LFA—about 2,500 feet deep according to Fries—is expected to cost about \$4 million. SFWMD has budgeted \$12 million for 2012–2015 project costs.

The pipeline to distribute water from the Southeast Wellfield Project is budgeted at \$320 million, including water purification facilities.

SFWMD has committed to help fund the Southeast project pipeline because it will serve customers with their territory, even though the wells are in a neighboring water management district.

Water reuse is already a big part of Polk County's water resource management plan. It has sufficient capacity to handle the water supply expansion, said Fries.

Water treatment to potable quality standards will be a significant cost component of the Polk County plan for tapping the LFA. Fries said the Southeast wellfield wells are producing water containing about 15 parts per thousand dissolved solids, about half seawater concentration.

They are hoping to treat it with mem-

brane filtration, which works under low pressures and therefore entails low electrical costs.

Of the possible 30 million gallons per day produced after 2023, up to 7.5 million gallons of reject water could result. Options for disposing of that include reinjecting to the aquifer deeper than the production wells, or sending it to a wastewater treatment plant where dilution would lower the salinity level.

"We will look at whatever options are available, will work and are cost effective," said Fries. Final consumer cost for the additional capacity is projected to be in the range of 7-10 percent higher than current prices.

In the longer term picture, efforts to increase water supplies in Polk County are part of what may become a regional water supply initiative.

Officials with the Central Florida Water Initiative estimate that in the next 20 years, the four-county area including Polk, Orange, Seminole and Volusia counties will consume up to 1.1 billion gallons per day, significantly higher than current usage.

In the short term, the increased water supply capacity will be managed by local governments or Polk County Utilities.

SFWMD has a clause in its agreement with municipal wellfield development partners that will lead the well's owners to become part of a regional water authority when one is organized.

At this early stage within Polk County, 11 of a possible 17 cities have written letters of support for SFWMD's efforts to find and develop alternate water supplies and the proportionate water sharing the plan outlines, according to Fries.

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Town of Palm Beach, Palm Beach County settle waste dispute

By DAN MILLOTT

After several months of negotiations, the town of Palm Beach and Palm Beach County have reached an agreement allowing the town to continue hauling yard and landscape wastes to two locations on the west side of the county.

Officials signed off on the agreement at a Nov. 12 meeting of the Palm Beach Town Council.

Town Manager Peter Elwell said the agreement requires the town to limit the height of waste piles to 15 feet, take steps to create adequate space for Palm Beach County Fire Rescue vehicles to safely navigate and create a visual buffer around the landfill, among other requirements.

Elwell said that several of the agreement's provisions are already in the process of being accomplished.

The two landfill sites are located off Okeechobee Boulevard and off Skees Road.

The Okeechobee Boulevard site has been used by the town since the 1930s, long before residential development grew up around it.

Complaints began about four years ago,

right after dozens of Australian pines were removed near the Okeechobee Boulevard site that had served to block the view of the landfill.

The county commission later tried to block the Palm Beach County Health Department and Florida Department of Environmental Protection from issuing new permits for the two landfills.

Several county commissioners also serve on the Solid Waste Authority of Palm Beach County. They eventually approved the new agreement after the town agreed to several cosmetic changes at the two landfills.

During the permit dispute, the SWA wanted the town to stop using the landfills, instead transporting the yard wastes to their facility.

The town objected, saying it would cost them hundreds of thousands of dollars a year if they were forced to stop using the landfills.

Some county commissioners said the two landfills should be closed because their locations were out of step with the neighborhood.

The town trucks 13,000 tons of waste annually to the two landfills with three-quarters going to the Skees Road site.

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USF senior engineering design team wins state, national competition

By **SUSAN TELFORD**

Necessity may be the mother of invention, but it was innovation and economics that propelled a senior design group from the engineering college at the University of South Florida to win a

team selected the evaluation of biogas utilization for the St. Pete's Southwest Water Reclamation Facility.

At the time the design team started the project, the city was looking at decommissioning the Albert Whitted facility and re-routing its flow to the SWWRF.

The facility had been operating below 50 percent of its permitted influent capacity. Even after the flows were combined, the facility would still be operating below its permitted influent capacity of 20 MGD.

In addition, the city was working with engineering firm Brown and Caldwell to redesign the digestion system. Multiple

digesters had already been decommissioned due to deterioration.

The plan was to completely demolish two old digesters, two clarifiers and two aeration basins to make way for a new temperature-phased anaerobic digestion system.

These systems can produce approximately 20 percent more biogas than a standard mesophilic system.

As explained by Butcher, the senior design team was tasked with figuring out the most feasible use of the biogas that will be produced by the SWWRF in St. Petersburg once a digestion system is in place.

The team conducted calculations to determine the heating requirements of the future digesters and to determine the amount of biogas that they could expect the process to produce with average influent flows.

The students worked with the city to come up with a set of criteria based on their priorities that would allow the students to evaluate each biogas utilization alternative.

The team then began investigating their options: Conditioning the biogas to a high enough quality for use in fuel cells; conditioning the biogas to a high enough quality for use in microturbines; conditioning the biogas to natural gas quality so that it could be used for (1) injecting NG into People's Gas NG pipeline, (2) providing a source of NG to neighboring Eckerd College, or (3) for fueling the city's fleet of sanitation vehicles; using the biogas to run

internal combustion engines to produce electricity for the facility; and finally, using the biogas for boilers to heat the digesters.

The only options that were feasible enough to continue investigating were boilers, internal combustion engines and microturbines.

The students worked with several subject matter experts and multiple vendors to analyze all options.

Based on final analysis including economics, the design team found implementation of the internal combustion engine option to have the best overall economic return for the city, based on the fact that it has high flexibility, can be modified

easily if the facility continues to expand and it had a relatively low system complexity.

The preliminary design was based on this recommendation and pitched to the city.

Both teams that competed in their respective categories, wastewater and environmental, at the state conference in April won first place, which allowed the two to compete at WEFTEC last month.

The wastewater team took first place out of eight teams and the environmental team took second place out of four teams.

"The entire process was a great learning experience," said Butcher. "Every individual contributed so much and it was a real privilege to work with them."



Photo courtesy of WEF

The University of South Florida environmental design team was comprised of (left to right) Matt Woodham, Melissa Butcher, Nicole Smith, Margaret Cone and George Dick.

Florida Water Environment Association state design competition.

The state win qualified the team to present their project proposal for biogas utilization at the 86th Annual Water Environment Federation Technical Exhibition and Conference in Chicago last month. And the design team took first place.

"Our team was lucky that our senior design professor for environmental/wastewater engineering goes out and gets actual projects for us to work on," said civil/environmental engineer and wastewater team leader Melissa "Mel" Butcher.

Students who go through environmental and water resources senior engineering courses at USF are indeed fortunate to have Sarina Ergas, PhD, PE, a professor in the USF Civil & Environmental Engineering Department, involved. Ergas goes to local municipalities and gets actual projects for students to work on.

Those students who took the course during the spring this year worked on projects from the city of St. Petersburg. Ergas supervised two teams, one for the stormwater category and the other for the environmental category.

Teams that wish to compete must organize early to have something ready for the annual FWEA state competition in April.

Butcher said that her team, organized in November, 2012, selected one of the wastewater projects, and then really got to work over the holiday break. Her design

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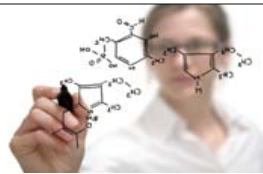
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Everglades flow equalization basin construction to begin in January

By ROY LAUGHLIN

In January, 2014, the South Florida Water Management District expects to begin construction and excavation on two new flow equalization basins, FEBs, in Palm Beach County.

They will be built adjacent to two canals and two stormwater treatment areas. Their function is to store rainwater during peak rainfall events and slowly release water to STAs before the water flows south through the Everglades.

Construction of the FEBs is a relatively recent addition to the much larger Ever-

glades restoration plan.

When completed, the two FEBs will provide an additional 116,000 acre-feet of peak rainfall storage.

Additional storage is necessary because stormwater treatment areas rely on aquatic vegetation, much of it emergent, to sequester phosphorus from surface water flowing through it. Excess flooding is deleterious to emergent marsh vegetation.

Essentially, the FEBs are storage areas for water flowing into STAs that ensure that the treatment areas continue to provide optimal treatment without interference from fluctuating water levels.

Unlike reservoirs, which are deep storage basins, FEBs are shallow and intended to hold water temporarily while its flow into STAs is modulated.

The A-1 FEB will store 60,000 acre-feet of water making it the largest of three planned FEBs. It will modulate water flow to STA-2 and STA-3/4. Expected A-1 completion date is July 2016. Water in A-1 will be shallow enough to allow emergent vegetation to grow.

The L-8 FEB includes a 950-acre former rock mine. Unlike A-1, this is a deep reservoir potentially capable of storing 45,000 acre-feet of water. It will equalize flow to STA-1 East and STA-1 West.

In addition, initially, its water may be released to the Loxahatchee River and two other restoration projects until additional construction projects to store water elsewhere are completed.

In addition to the construction of the basins themselves, additional control struc-

tures—many of them completely automated—are components of the larger Everglades restoration plan and regional water quality efforts.

Future construction of a third FEB is planned for Hendry County, on the western side of the Everglades.

The first two FEBs will be constructed along the Miami and North New River canals in Palm Beach County.

Their funding is part of Florida's \$880 million agreement between the U.S. Environmental Protection Agency and the state of Florida to improve water quality in the Everglades.

FEB implementation resulted from negotiations between EPA and Florida that led to the approval of NPDES permits for stormwater releases to the Everglades.

The first FEB is still almost a year and a half away, but is expected to be operational before the peak of the wet season next year.

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FPL recycling old plant demolition debris in new construction

By DAN MILLOTT

Florida Power & Light Company recently demolished their coal-fired power plant at Port Everglades, producing 160,000 tons of debris.

Following their standard practice used for demolition projects, the debris will be used in the construction of a new plant at the same site, reusing as much as 98 percent of the steel and concrete from the old plant.

Marie Bertot, senior communications specialist with FP&L, said the utility has embarked on a program called "Extreme Recycling."

At other demolitions at Cape Canav-

eral and Riviera Beach where power plants were being modernized, the bulk of the debris, also 98 percent, was retained for the new plants.

The cleanup at Port Everglades is well underway and due to be completed by February, 2014. Construction should begin on the new Next Generation Clean Energy Center by March.

Of the 160,000 tons of debris created during the demolition, 120,000 tons were concrete. Steel made up the balance of 40,000 tons.

The steel will be melted down and re-

FP&L
Continued on Page 16

FEDFILE
From Page 2

have increased to levels not seen in the past 800,000 years.

Carbon dioxide alone has increased 40 percent in the last two and half centuries. The result of this, according to the report, has been increases in atmospheric temperature and ocean surface temperatures.

The report, a quadrennial update of a report first released in 1992, takes the strongest stand yet, asserting a causal relationship between human activities and increasing atmospheric CO2 concentrations.

The report defines statistical likelihood estimates and characterizes those intervals in everyday language. For example, a 99-100 percent probability is "virtually certain," while a 90-99 percent probability is "very likely."

The report's summary is widely populated by "virtually certain" and "very likely" when asserting a cause and effect link between climate change and human influence.

The report's summary states unambiguously that "human influence on the climate system is clear."

It states that human influence has been a factor in the warming of the atmosphere and oceans, changes in the global water cycle, reductions in snow and ice, and in global mean set sea level rise and in some climate extremes.

"It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century," it states.

The IPCC's most recent report did not change its estimate of the increase of mean atmospheric temperatures according to a news article in *Science Magazine*.

In mid-November, officials of the World Meteorological Organization reported that provisional estimates of 2013 global temperatures, based on the year's first nine months, put it in a tie with 2003 as the seventh warmest year since records began in 1850.

The 2013 average global land and ocean surface temperatures are 0.48 degrees C (0.86 degrees F) above the 1961-

1990 global average. The most recent annual mean global temperature estimates are within the IPCC's predictions.

The IPCC report also identified some additional information needed to strengthen existing models that predict climate change and human influence on it.

This is the fifth report issued on a four-year cycle and, in those two decades, the IPCC has become successively less equivocal about the relationship between measured climate change and putative human influence.

The perspective in this report is not so much if human activity influences climate change, but how, how much and for how far into the future.

Underwater research station to continue operations under FIU. Aquarius Reef Base, a 20-year-old underwater research station resting 62 feet deep at the base of a coral reef near Islamorada, FL, will continue operations for at least a few more years.

Florida International University has agreed to take over management of the National Oceanic and Atmospheric Administration-owned facility.

For the past 20 years, since the Aquarius Reef Base was moved to the Florida Keys from the Virgin Islands, the facility has been managed by the University of North Carolina at Wilmington, under contract with NOAA.

When that federal agency announced it would discontinue support for Aquarius, UNCW announced plans to close the facility. That's when FIU stepped in to continue operations.

NOAA provided \$1.1 million for an additional year of transition support, but in the future, the facility will increasingly rely on FIU support either from private donors or state money.

The headquarters for the operation has moved from a converted canal front residence used by the UNCW to a dive shop in Islamorada. School officials said that the habitat will be used extensively by students suggesting that research projects and the scientists conducting them will not be the only users of the base.

Lake Worth Lagoon restoration effort continues with Grassy Flats project

By PRAKASH GANDHI

Federal, state and local officials are embarking on another project to try to breathe new life into the Lake Worth Lagoon in Southeast Florida.

They are hoping that a portion of the lagoon can be restored as a thriving ecosystem of seagrass beds and mangroves that will nurture fish, oysters and wildlife.

At least that's the goal of the Grassy Flats restoration project, scheduled to start next spring.

The project is a cooperative effort supported by the U.S. Fish and Wildlife Service, Florida Fish and Wildlife Conserva-

tion Commission, the Florida Department of Environmental Protection and other agencies.

Lake Worth Lagoon is the largest estuary in Palm Beach County, stretching from the Village of North Palm Beach to Ocean Ridge, and separated from the Atlantic Ocean by Singer Island and Palm Beach Island.

The Grassy Flats project will restore and enhance 19.8 acres of seagrass and restore two acres of estuary habitat.

Julie Mitchell, environmental analyst with the Palm Beach County Department of Environmental Resources Management, said officials plan to place a sand cap over

the muck bottom to provide the right conditions for seagrass to thrive.

The project is very close to the C-51 canal where a lot of freshwater discharge of sediments originates.

"We're trying to improve the condition of the Lake Worth Lagoon," Mitchell said. "We will hopefully improve the water quality so there will be better light penetration that allows more seagrass to grow."

The project is on the lagoon's east side, between Southern Boulevard and Lake Avenue in Palm Beach.

About 48,000 cubic yards of sand will be spread over 12 acres to cap the muck sediments and create two islands.

About 2,900 red mangroves and 25,000 cord grass plugs will be planted.

In addition, about 5,300 tons of limestone rock will be put in place to stabilize the new islands and provide a hard surface where oysters can grow.

Seagrass, vital to marine life in estuaries, is expected to start growing after the muck bottom is covered with sand.

Mitchell said that once the sandy floor of the marine habitat is restored, sea grass

will naturally move in.

The habitat restoration work will complement a smaller habitat project that was completed three years ago. That project also involved capping muck sediments and planting mangroves along the shoreline.

Much of the sediment that created the unstable muck bottom entered the central part of the Lake Worth Lagoon from the Everglades Agricultural Area, through the West Palm Beach Canal.

Sediment traps have since been installed to capture the muck before it reaches the lagoon.

Funding for the \$2.6-million project comes from different sources. About 65 percent of the cost will be borne by the federal government with the remainder provided by state and local agencies.

Grassy Flats will add to the 44 projects undertaken so far to improve water quality, habitat and public access to the Lake Worth Lagoon.

Some 264 acres of wetlands in the lagoon have been enhanced through habitat restoration projects to date.

USGS releases new MODFLOW software

Staff report

Mathematical modeling is a valuable tool to aid in predicting groundwater flow in general. Now, new software released by the U.S. Geological Survey, MODFLOW Saltwater Intrusion 2, can be used to predict some instances of saltwater intrusion characteristics.

USGS recently released its SWI2 software that's intended to be used with MODFLOW-2005 to model saltwater intrusion.

When water within an aquifer has uniform density groundwater flow, the software allows the "three-dimensional vertically integrated variable-density groundwater flow in seawater intrusion" in coastal aquifer systems to be simulated.

The software uses the Dupuit approximation to calculate the simulation. This algorithm works on an aquifer model that is "vertically discretized" by zones of different density with distinct interfaces, isosurfaces or haloclines. It is not intended for use where diffusion and dispersion occur to a significant extent.

Because the new SWI2 package is part of the more sophisticated MODFLOW-2005 software package, simulation data for saltwater intrusion requires only a single additional input file.

In comparison with other groundwater flow simulation software used to characterize saltwater intrusion, the SWI2 pack-

age substantially lessens the time required to run the model simulation, according to USGS.

When it released the software in August, USGS included documentation for six different model runs.

Additional information is available at <http://pubs.usgs.gov/tm/6a46/>.

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ACF From Page 1 restrictions.

Florida and Alabama have fought with Georgia over the state's water consumption in the Apalachicola-Chattahoochee-Flint river basin for more than two decades.

A recent ruling involving the U.S. Army Corps of Engineers sided with Georgia.

Georgia Gov. Nathan Deal called the Florida move a "frivolous waste of time and money."

Brian Robinson, the governor's communications director called it "political theater."

"The only 'unmitigated consumption' going on around here is Florida's waste of our tax dollars on a frivolous lawsuit," said Roberson regarding the legal action.

"Florida is receiving historically high water flows at the state line this year, but it needs a bogeyman to blame for its poor management of Apalachicola Bay," he said.

Florida, Georgia and Alabama have attempted to work out waterway agreements in the past, but Scott states in the lawsuit that Georgia did not negotiate in good faith.

Florida officials believe that the historically low water levels that have resulted from Georgia's overconsumption have caused oysters to die because of higher salinity in the bay, and increased disease and predator intrusion.

According to the Florida Department of Environmental Protection, Apalachicola Bay provides 90 percent of Florida's oyster supply and 10 percent of the nation's supply.

Georgia's daily water consumption is expected to be close to 705 million gallons by 2035.

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Pasco County building nation's largest reclaimed water reservoir

By ROY LAUGHLIN

Work will soon be underway on the nation's largest reclaimed water reservoir, now named the Boyette Reclaimed Water Reservoir, in Pasco County.

The site near Interstate 75 includes a former open pit mine and a borrow pit.

When excavation is complete, expected by the end of 2014, 80 acres will be excavated to 28 feet.

A synthetic geotextile liner will be installed and the 500-million-gallon reservoir will be filled with reclaimed wastewater.

The reservoir is a major component of Pasco's Master Reuse System.

Pasco County Utilities is undertaking the project to increase reuse water supplies for existing customers and to have an adequate supply for future population growth. It is expected to have sufficient capacity to supply water through the dry season.

Currently, PCU has about 100,000 wastewater treatment customers and 10,000 reuse water recipients, according to Sue Chase, the county utilities' customer affairs manager.

A 10 percent recycled water ratio is

typical for wastewater treatment plants in Florida.

The Boyette Reservoir will be adjacent to Pasco County Utilities' Wesley Center Wastewater Treatment Facility. But that treatment plant will not be the only source of water stored in the reservoir.

It will be fed by Wesley Center's 6-million-gallon per day permitted capacity, plus six other wastewater treatment plants in Pasco.

Sarah Rodriguez, PE, ME, the county's utilities program administrator, explained that the county already has a reuse water pipeline system that interconnects wastewater treatment plants.

"The pumping system for the Boyette Reservoir has been designed for a current capacity of 12 million gallons per day and it is projected to be expanded to 21 million gallons per day in the near future," she said.

The Boyette Reservoir is not a storm-water reservoir. Only rainwater falling on the reservoir and the wastewater treatment facility will drain to it.

The reservoir design includes a spillway to manage a hundred-year occurrence of a 12-inch rainfall in 24 hours. Groundwater infiltration is not expected to add water to the reservoir.

Construction began in mid-summer with site dewatering prior to excavation. Water from the flooded mine and some borrow pits was pumped into ditches that conveyed it to two adjacent lakes, Gator Lake and Lake Elam.

According to Pasco County's website, the quality of water pumped from the site was good enough to be pumped into the nearby lakes.

The recent wet summer created the need for careful water level monitoring in the lakes, and dewatering transfers have increased since the rainy season ended in early October.

Digging a big hole to pump water into may not seem to be much more complex than digging a small hole for a swimming pool. However, engineering and geological characterization of the subsurface has been a major component in the planning process.

Engineers are reasonably confident that the area where the lake will be built is sufficiently stable to ensure that the project is not on a site where a sinkhole is likely to open up.

Project core and soil tests were cited as confidence that this reservoir will not have the same detrimental sinkhole interference that a 20-acre retention pond

project in nearby Land O' Lakes experienced.

Five years in the planning, the initial price was calculated at \$18 million. Additional engineering studies indicated the need for an underground wall to cut off and capture seepage.

That raised the cost to \$36 million, doubling the project's original estimated cost.

The new plan also calls for a 14-foot berm around the 80 acres of the reservoir.

Construction costs will be shared. The Southwest Florida Water Management District will reimburse Pasco's reclaimed water program at least \$9 million. The water management district's governing board will vote in January on a proposal to double that to \$18 million.

The other half of the estimated cost will come from bonds to be repaid by Pasco County Utility customers.

FP&L

From Page 14

used in the new plant and the concrete will be pulverized and reused for road material at the construction site.

Once the new construction begins, Bertot said the work will produce virtually no waste.

"The demolition waste and trash is run through a blower system that separates and recycles it," she said.

Bertot noted that FP&L was one of the state's largest recycling companies.

"In 2012, we recycled six million tons of scrap metal, 250 tons of paper and cardboard, 1,150 streetlights, 7,000 cubic yards of non-treated wood and 250,000 million gallons of mineral oil," she said.

At Port Everglades, the new plant will replace a 1960 vintage coal-fired power plant.

The new plant is due to be up and running by mid-2016 and will serve about 250,000 South Florida homes.

It is expected to use 35 percent less fuel than the old plant.

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