Florida Specifier

Practical Information For Environmental Professionals

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Volume 37, Number 6

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Photo courtesy of Kim Ornberg, Watershed Management Division, Seminole County Public Works

Harry Seenauth, a field operations supervisor with Environmental Research & Design Inc., measures level and flow at a culvert under County Road 427 in Lake Mary. This effort contributed to the design of a nutrient removal project in Seminole County to be built along Soldiers Creek. The joint project between FDOT and Seminole County will remove nutrients from the Soldiers Creek watershed and reduce nutrient loading in Lake Jesup. See story on Page 7.

Tampa officials look to wastewater reclaim to augment drinking water supplies

By PRAKASH GANDHI

City officials in Tampa are looking at an innovative way to increase drinking water supplies for the bustling bay area. The city wants to tap into 60 million gallons a day of reclaimed water that it now discharges into Tampa Bay.

Officials are looking into building a pipeline to pump about a third of the highly treated water from the city sewage treatment plant at Port Tampa Bay north to areas along the Tampa Bypass Canal. There, the reclaimed water would be pumped into wetlands or rapid infiltration basins.

"The first phase of this project is to conduct a program to determine if it's feasible to deliver reclaimed water to wetlands and infiltration basins near the Tampa Bypass Canal to sufficiently augment our water supply sources for the region," said Brad Baird, PE, administrator of the city's public works and utility services.

Under the proposal, reclaimed water from the Howard F. Curren Advanced Wastewater Treatment Plant would be delivered to RIBs and wetlands near the bypass canal to augment groundwater supplies.

This, in turn, will help recharge the bypass canal.

Officials said this will allow additional surface water withdrawal from the canal by the city or Tampa Bay Water, the regional drinking water supplier.

Baird said the water would seep from the wetlands into the ground to further reduce its nutrient level. The water would eventually make its way into the bypass canal, one of the city's sources of drinking water.

"Wetlands have the capability of removing nutrients," Baird said. "There are some nutrients in the reclaimed water that the Florida Department of Environmental Protection would like to see removed before it becomes a drinking water source, even though the reclaimed water goes through advanced treatment."

Costs could reach as much as $260 million for the pipeline from the port to the basins, storage and pump stations and land purchases. The city has lobbied the Florida Legislature to kick in $2.5 million for the $3 million pilot project.

The city sends about three million gallons of reclaimed water a day to South Tampa customers for irrigation. Some is used by industry within the port or at the treatment plant itself, but most goes into the bay.

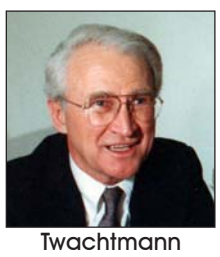
In August, when Tampa Bay Water started to update its long-term master plan, the agency's board asked staffers

RECLAIM
Continued on Page 16

In memoriam: Dale Henry Twachtmann

It is with much sadness that we have learned of the passing of Dale H. Twachtmann.

Dale will be long remembered as one of Florida's most important figures in the state's struggle over the last 40 years to find an acceptable balance between the growing demand and use of water and the needs of natural systems.



Twachtmann

As the first executive director of the Southwest Florida Water Management District in 1962, he understood early the need to evolve the common view that Florida needed to be drained and dredged, to one that recognized water was not to be wasted and wetlands provide valuable benefits for the state's lakes, streams, estuaries and freshwater aquifers.

Under Dale's unwavering hand, the district became a leader in the environmental sciences that gave the state of Florida an entirely new understanding of its abundant wetland systems and the need to protect them.

Under his leadership, the district designed and begun construction, along with the U.S. Army Corps of Engineers, the Four River Basins Project that includes the now-completed Tampa Bypass Canal, a project that has proven time and again its capacity to protect the city of Tampa from major flooding and potentially hundreds of millions of dollars in loss and damages.

TWACHTMANN
Continued on Page 11

Federal initiative offers assistance to local governments to address challenges of climate change

Staff report

A partnership between three federal agencies has recognized efforts to "help build resilience in regions vulnerable to climate change and related challenges."

The showcased projects illustrate the benefits of landscape-scale management approaches that help enhance the carbon storage capacity of natural areas, according to the partnership's characterization of the projects.

The collaboration, the Resilient Lands and Waters Initiative, will work in Florida to identify and apply incentives to meet conservation targets.

On a landscape scale, Florida's habitat-diverse southwest region includes the Everglades wetlands, coastal mangroves, seagrass beds, oyster reefs and estuaries. It is home to many endangered species.

Threats and management issues include increasing urbanization and land use, invasive species, rising sea level, and shifting weather and temperature patterns.

The efforts will be guided by the work of the Cooperative Conservation Blueprint for Florida, and the Peninsular Florida Landscape Conservation Cooperative.

Efforts on this regional scale include partnerships with federal and state agencies, private landowners with substantial holdings, the Southwest Florida Regional Planning Council and other nongovernmental organizations.

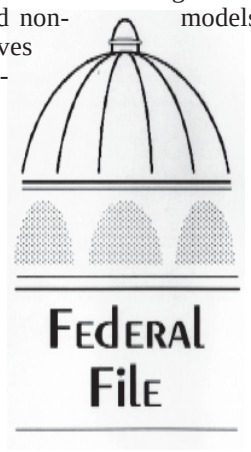
One focus of the project is to establish and develop voluntary and nonregulatory conservation incentives to be applied to a "comprehensive vision" of conservation and restoration priorities across Florida.

The initiative involves the U.S. Department of the Interior, the National Oceanic and Atmospheric Administration and the U.S. Environmental Protection Agency.

Four sites nationwide are part of this program: Southwest Florida; three locations in Hawaii on West Hawaii, West Maui and Oahu; Puget Sound in Washington State; and the Great Lakes region.

During the next 18 months, federal, state, local and tribal partners will work to develop explicit strategies that identify risk, identify avoidance and prevention strategies, and map the area of effort.

Experience gained in these initial steps to protect specific landscapes can showcase the benefits of landscape-scale management approaches and help serve as models for similar efforts elsewhere.



Hydrogeological framework of Floridan. The U.S. Geological Survey released an update of the framework for the Floridan Aquifer. It is the first update in over 30 years.

The update consists of two reports that are part of its current assessment of groundwater availability in the Floridan system.

The first report documents the revised framework. The second provides data sets to describe the surfaces and thickness of selected hydrogeological units of the system.

The new framework describes the bases of the aquifer system, major and minor hydrogeological units and zones, geophysical marker horizons, and the level of the 10,000 mg/L total dissolved solids boundary.

The revision includes new borehole data that are the basis for a detailed conceptual model that describes the major and minor units and zones of the Floridan.

The new data came from the USGS and the geological surveys of Alabama, Florida, Georgia and South Carolina, and the water management districts in Florida. Other state and local agencies were also sources of new borehole data.

The aquifer underlines parts of four states: Florida, South Alabama, South Georgia and Southeast South Carolina. It supplies drinking water to about 10 million people, and about half the agricultural irrigation water in the region where the aquifer occurs. It is one of the most productive aquifers in the world.

CO2 emissions increase again. During the past two years, U.S. energy-related CO2 emissions increased. The good news is that the increase in 2014 was only about 0.7 percent. In 2013, it was much larger at 2.2 percent.

If the 2013 emissions were an ephemeral spike, the U.S. remains on a long term trend of downward CO2 emissions and on track to meet Pres. Obama's 2009 pledge to reduce U.S. greenhouse gas emissions to 17 percent below 2005 levels by 2020.

Changes in CO2 emission rates typically reflect changes in population growth, economic activity and weather.

Since 2005, U.S. CO2 emissions have fallen about 10 percent. The most substantial decreases occurred in 2009, but year-to-year progress is variable.

Deepwater Horizon projects. The Deepwater Horizon Oil Spill Natural Resource Damage Assessment Trustees and BP identified 10 early restoration projects to be included in a Phase IV Early Restoration Plan with an estimated $134 million price tag.

The plan itself has not been formally released for public comment, and it may be several months before any shovels hit the sand on the selected projects.

The projects number four for coastal Alabama, three for Mississippi and one each for Texas and Florida. Two may benefit the entire region.

The first regional project of potential benefit to Florida is the Sea Turtle Early Restoration Project that will be based on Padre Island, TX. It will include sea turtle nest monitoring.

The effort includes adding two more nesting corrals on South Texas beaches and placing observers on fishing and shrimping boats that use nets to ensure that by-catch turtles are released unharmed.

The project also calls for additional efforts to monitor the use of turtle exclusion devices on shrimp nets during the season. This proposed ten-year effort will cost $45 million dollars.

The Pelagic Longline Bycatch Reduction Project's goal is to restore pelagic fishery species affected by the spill, including marlin, shark, Bluefin tuna and undersized individuals of other pelagic species.

The project will compensate pelagic longline fishermen to pause fishing for six months during the Bluefin tuna spawning season. The project will also provide participating fishermen with two alternative gear types that allow continued harvest of yellowfin tuna and swordfish during the repose period when pelagic longline gear will not be used. The projected cost for this is $20 million.

The Florida project, the Recovery Project at Gulf Islands National Seashore in the Panhandle, is Florida's approved restoration. It is relatively more modest, involving the restoration of seagrass on 0.02 acres at a location on the south side of the Naval Live Oaks Preserve on Santa Rosa Sound. Its estimated cost is $136,700.

"The state of Florida will not be imple-

FEDFILE

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P.O. Box 2175
Goldenrod, FL 32733
Phone: (407) 671-7777
Fax: (407) 671-7757
www.enviro-net.com

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

Support services provided by
OSS
Orlando, FL

Contributing writers and columnists

PRAKASH GANDHI
Senior Environmental Correspondent
Orlando, FL

BLANCHE HARDY, PG
Environmental Correspondent
Sanford, FL

ROY LAUGHLIN
Environmental Correspondent
Rockledge, FL

WILLIAM D. PRESTON, ESQ
Principal
William D. Preston PA
Tallahassee, FL

SUSAN TELFORD
Principal
EnvironMend
Jupiter, FL

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info@enviro-net.com

Indian River County seeks to block bonds needed to complete All Aboard Florida rail project

Staff Report

Indian River County is attempting to block All Aboard Florida's application for $1.75 billion in tax exempt bonds with a request for a temporary restraining order.

The county, along with its emergency services district, has sued the U.S. Department of Transportation claiming that the department's preliminary approval of the bonds in December was unlawful because it occurred before a final environmental report had been completed.

The Florida Development Finance Corp., which planned to meet May 28 to discuss the bonds, is the last stop in the approval process for All Aboard Florida prior to issuing $1.75 billion in private activity bonds.

The bonds are needed to complete the Miami to Orlando passenger rail project that is scheduled to open its Miami to West Palm Beach leg in late 2016.

Lee County compost. The Lee County compost facility has built three new tension fabric buildings as part of an expansion that will double the operation's production capacity for recycling biosolids and yard waste.

The fabric buildings are used to shelter waste materials from rain and sun for roughly 30 days in the initial stage of composting. Each of the three structures measures 162 by 120 feet.

Military solar. The Florida Public Service Commission gave Gulf Power the green light for three solar energy farms that will be built on area military bases.

Gulf Power is partnering with the U.S. Navy and U.S. Air Force to build the solar energy farms at facilities across Northwest Florida.

The three solar farms are expected to produce 120 megawatts of electricity. Together, the new plants could produce enough energy to power about 18,000 homes.

Construction is scheduled to start in February 2016 and the facilities are expected to be in service no later than December 2016.

The power company's first renewable energy project was the 3.2 megawatt Perdido gas-to-energy facility that has produced more than 100 million kilowatt hours of electricity since starting commercial operation in 2010.

Transportation impact contracts. The Florida Department of Transportation has selected Stanley Consultants to perform project development and environmental studies to assess the impacts associated with two proposed transportation projects in FDOT District 4 and District 6.

The District 4 PD&E study will use the newest interchange access request procedures that were recently approved by FDOT and the Federal Highway Administration to expedite project delivery and better serve the community.

The District 6 PG&E study will implement a new pilot study process aimed at reducing project delivery time, reducing preliminary engineering costs and expediting project improvements to better serve the public.

Scholz powered down. Gulf Power shut down operation of its Scholz power plant in Sneads.

There are currently no plans for development of the industrial property once the removal of assets and full closure process have been completed.

The closure was announced two years ago. At its peak, Gulf Power had 60 workers at the plant but had cut back the workforce to 22 by the time the closure plan was announced.

Gulf Power elected to shut down the facility rather than go to the expense of meeting the new environmental controls mandated by the U.S. Environmental Protection Agency for coal-fired power plants.

Waste agreement. The city of Coconut Creek and Waste Management have crafted a settlement limiting the amount of waste and wastewater sludge disposed of in the Monarch Hill Landfill.

The city and Waste Management have been at odds over Monarch and its characteristic odors for over a decade.

Under the new agreement, Waste Management will limit the disposal of household and commercial waste to 175,000 tons per year at no greater than 14, 583 tons per month and wastewater sludge to 5,000 tons per year.

The agreement calls for Waste Management and existing and former subsidiaries to incinerate all processable waste that would have otherwise been landfilled in their facilities at Monarch or Fort Lauderdale.

Company news. Infrastructure consulting and engineering firm NV5 Holdings Inc. of Hollywood, FL, has acquired San Francisco-based Richard J. Mendoza Inc., a program management firm that operates under the name Mendoza & Associates.

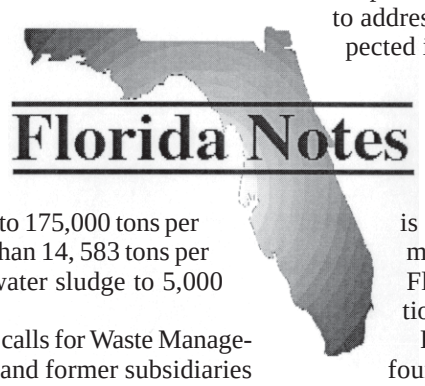
People news. Palm Beach County appointed Natalie Schneider as its new climate change and sustainability coordinator. The position was created by the county to address climate change threats expected in the future.

Schneider is an urban land use planner who formerly worked for the South Florida Water Management District. One of her top jobs is to oversee the local implementation of the Southern Florida Regional Climate Action Plan.

Palm Beach County is one of four counties collaborating on efforts to prepare for, and if possible, minimize the effects of climate change.

The plan includes more than 100 recommendations such as moving drinking water wells further inland.

Elsewhere, Kevin Hayes, PG, CPG, GISP, joined the Northwest Florida Water Management District in Havana as chief of the district's Bureau of Groundwater Regulation.



City of Jacksonville buys pollution credits, considers future options for nutrient reductions

Staff report

To meet state numeric nutrient standards, the city of Jacksonville must reduce its nitrogen loading by 53 metric tons. But the city will not be able to meet those requirements alone within the next few years as mandated.

In April, the Jacksonville City Council approved a plan to buy pollution credits to cover about 30 of the 53 metric tons of nitrogen in question. The council appropriated $2.9 million to pay JEA for the needed credits. JEA earned the credits by reducing emissions at some of its power plants.

The city also purchased credits from the Florida Department of Transportation to cover about 10 tons of nitrogen. The purchased credits will now cover Jacksonville's nutrient reduction obligations through 2016.

In the long term, the city could continue to buy pollution credits, a plan criticized by some for not materially improving water quality in the St. Johns River now, or positioning the city to meet the even stricter requirements ahead in 2023.

To satisfy critics when the purchased pollution credits expire after 2016, Jacksonville could implement new cleanup projects that face both financial and time constraints.

Algae bloom in Lake O. In late April, water tests confirmed a toxic algal bloom on the eastern side of Lake Okeechobee near the Port Myakka Lock and Dam.

THE WATER WATCH

Water analyses confirmed dominance of a cyanobacterium for at least two days during the bloom. Then from April 28 through May 7, the algal bloom became a mixed bloom.

Water samples collected between April 28 and May 4 showed the presence of microcystin, an algal toxin that can cause symptoms ranging from skin rashes and sinus congestion to nausea and vomiting if enough is ingested.

According to Dee Ann Miller, a spokesperson for the Florida Department of Environmental Protection, the initial results from samples collected on April 24 indicated an algal bloom with low levels of toxin detected, less than 10 micrograms/liter.

The World Health Organization considers levels under 10 microgram/liter to represent a low-level risk for adverse health outcomes from short-term recreational exposures. However certain sensitive populations, such as children, the elderly and immunocompromised populations, may be still be at risk even at low concentrations and should avoid exposure.

The U.S. Army Corps of Engineers temporarily suspended releases of freshwater through the St. Lucie River to Indian River. Officials in South Florida would like to avoid a repeat of the 2013 toxic algal bloom in the St. Lucie and Indian rivers.

After May 5, when algal toxins were no longer indicated by analysis, the corps reopened the gates and resumed lowering the water levels in Lake Okeechobee to meet seasonal water level schedules.

Municipal reuse expands. In the last 15 years, Florida's wastewater reuse capacity reached 6.6 million gallons per day. Florida currently has more than 500 wastewater reuse facilities, with 86 more planned. The total investment exceeds $6 billion.

These stats and more appear in a recent report by Bluefield Research, a report primarily oriented toward the business community involved with water reuse.

Florida is at the forefront of U.S. reuse water adoption, according to the report.

The report also discusses the critical components facing Florida's water reuse future, identification and analysis of planned projects, characterization of existing projects and analysis of Florida's five water management districts.

All influence the status of Florida's wastewater reuse, market trends and emerging opportunities.

Shortelle appointed as ED at SJRWMD

The St. Johns River Water Management District Board of Directors appointed Ann Shortelle, PhD, as their new executive director. Her professional career includes positions in both public and private sectors. She served as director of the Office of Water Policy and the Florida Department of Environmental Protection and, during the past three years, as executive director of the Suwannee River Water Management District.

Carlos Herd, PG, will replace Shortelle at the Suwannee district as interim executive director.

White Springs sewer. The town of White Springs, on the bank of the Suwannee River in North Florida, initiated a project to inspect some of the oldest wastewater pipelines and pump stations in its wastewater system.

Sewer lines in the system are made of clay pipe installed 60-70 years ago. Time and tree roots have predictably compromised at least some sections of the lines.

The town council approved a bid of $84,675 from Layne InLiner LLC of Sanford for a specialized field study of the sewer lines.

The project includes video-assisted inspection and evaluation of lines associated with three pumping stations: Bridge Street, Kendrick Street and the Master Pump Station in the downtown corridor.

Tree root removal and bypass pumping may be necessary during inspection. The inspection effort is the first phase of a project that may lead to sewer line replacement and station upgrades.

White Springs has received a DEP State Revolving Fund loan to help pay for the work along with some other projects. Depending upon findings of the initial assessment, up to $40,000 more may be needed to clean out, repair or replace sewer lines.

Brevard stormwater park. Construction on the Wheeler Stormwater Park on a 300-acre tract of land adjacent to the north fork of the Sebastian River is nearing completion.

The project includes construction of several stormwater ponds, wetlands restoration including the Herndon Slough restoration area and wetland restoration areas near the Scottile Canal, and planting of hundreds of wetland trees.

Pond construction includes a 23-acre pond and a seven-acre pond.

The stormwater park will capture and process water from 21,000 acres in southern Brevard County, and from an adjacent mobile home park. It will reduce the level of sediments and nutrients in runoff reaching the Indian River Lagoon.

Construction costs are budgeted at $3.57 million. DEP and the Florida Department of Transportation each contributed $1.5 million to cover the lion's share

WATCH

Continued on Page 5

WATCH

From Page 4

of the costs. Brevard County paid $570,000.

The first work associated with the project began in 2011. The Herndon Slough restoration was completed in 2014. Completion of remaining parts of the Phase 1 effort, which will establish the stormwater treatment capabilities, is expected in 2016.

Lake Worth Bridge flooding. Tide water levels in Florida's east coast lagoons show a consistent seasonal change, with the largest rises occurring in the fall.

In Lake Worth, flooding along the waterfront near Golf View Avenue and the base of the Lake Worth Bridge occur when high lagoon levels and heavy rainfall overwhelm the capacity of the stormwater drainage system.

In April, FDOT began a project to upgrade the drainage system to significantly reduce flooding. Construction was expected to last approximately one month, and should be completed by the beginning of Florida's rainy season.

Pasco makes offer on utility. In April, Pasco County Commissioners offered $2 million to buy a private drinking water and wastewater treatment utility that serves the Summertree subdivision.

This follows a homeowners association's unsuccessful attempts to buy the utility from Utilities Inc. of Altamonte Springs.

The residents complain that the water supplied by Utilities Inc. is discolored by excessive iron. The water comes from three wells owned and operated by Utility Inc.

Initially, homeowners explored the prospects of connecting to Pasco's drinking water system. The cost of that connection would include a $900,000 connection fee plus construction and materials costs to connect to Summertree's system.

One sticking point in the negotiations was that if Utilities Inc. paid the connection fee and construction costs, the company would be able to pass on the expense to customers and earn market rate interest for two decades. That could mean homeowners would pay an extra $1.1 million in interest—$24 extra a month for 22 years.

If the county purchased Summertree's utility system from Utility Inc., homeowners would still be subject to a special assessment and they might pay higher rates than other customers in Pasco.

Pasco County might be able to borrow connection and construction money at a lower rate and those savings could potentially be passed on to Summertree residents. For Pasco County, buying the utility outright would give it three wells that could be used as a backup water source.

Even though county commissioners approved the $2 million offer, a sale, if one were to occur, may not be finished quickly. Earlier this year, the county discussed prospects of a sale with Utilities Inc., but county officials did not have access to inspect financial records or utility facilities.

Crestview expands treatment plant. The city of Crestview is upgrading its wastewater treatment plant to include a new chlorinator for disinfection and five rapid infiltration basins that provide additional wastewater treatment through soil percolation.

Currently, Crestview's wastewater treatment plant treats 2.75 million gallons a day and disposes of it on a 320-acre sprayfield, selling grass from it as forage. With the new treatment components in place, the city plans to offer customers reuse water for irrigation.

The city has hired CH2M to plan a wastewater distribution system. Crestview officials and representatives are now in discussions with Foxwood Country Club and several housing developers regarding the availability of the reclaimed water.

City officials plan to charge for the reuse water to help defray its cost and the overall cost of wastewater treatment.

Mile Point Training Wall upgrades. The Port of Jacksonville's deepening and expansion plans include reconfiguration of a jetty structure along the St. Johns River, the Mile Point Training Wall.

Located near the confluence of the St. Johns River and the Intracoastal Waterway, the old structure needs to be repaired and extended for the larger vessels expected following widening of the Panama Canal.

The project involves removal of approximately 3,300 feet of the existing wall and reconstruction of approximately 4,000 feet of a new west leg of the wall. Construction of 2,100 feet of a new east leg of the training wall and dredging of the existing channel will also occur.

Dredged and recovered materials will be used to create 8.15 acres of saltmarsh, and to restore approximately 53 acres of salt marsh on Great Marsh Island near the construction site. This will compensate for approximately 8.15 acres of saltmarsh at Helen Cooper Floyd Park that will be lost during training wall construction.

The park, adjacent to the training wall construction site, will be closed for the next 12–18 months while construction occurs. It will be used as a staging area for training wall construction.

When the new wall is complete, it will reduce or eliminate the need for navigation restrictions. Currently, all vessels with a transit draft greater than 33 feet inbound and 36 feet outbound may not travel the channel during ebb tide due to currents and depth restrictions.

Florida Specifier

2015 Environmental Lab Directory

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

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

Please type or LEGIBLY print the information requested and return as soon as possible to Mike Eastman via fax at (407) 671-7757, e-mail mreast@enviro-net.com or mail to P.O. Box 2175, Goldenrod, FL 32733. You can reach us at (407) 671-7777. The deadline for submissions to the August Lab Directory is **Friday, July 10, 2015.**

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

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

Laboratory name: _____

Primary Florida address: _____

City, State, Zip: _____

Phone: _____ Fax: _____

E-Mail: _____ Web: _____

Contact: _____ Title: _____

Locations in FL: _____

State of incorporation:_____ Years under same ownership: ____ years

Lab capabilities/specialties: _____

_____

Sample types: _____

_____

Certifications: _____

_____

Additional services: _____

_____

Number of years in business: _____ years

Staff: Total: _____ Engineers/scientists: _____ Technicians: _____

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

_____

Are you a current *Specifier* advertiser or FRC exhibitor? ____ Yes ____ No

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____ Submitting a column for the Lab Focus issue

2015 Legislative Update: A tale of two circuses unfolds in Tallahassee

By WILLIAM D. PRESTON, ESQ.

There are two annual circuses in Tallahassee, both in the spring time.

One is the Florida State University Flying High Circus, presented as an extra-curricular activity by rank amateur students. It is a spectacular production that you should add to your must-see list, preferably with your kids or grandkids.

The other annual Big Top show is called "The Florida Legislature."

Each circus presents high-wire trapeze acts, beautiful costumed performers, heart-stopping drama and excitement, true grit and, of course, clowns.

This column briefly summarizes the first act of the second show.

What happened?

After run-up committee meetings and other rehearsals, the Legislature convened for its 60-day production (regular session) on March 3. The politicians, legislative staff and lobbyists got to work.

Environmental issues were forecast to be part of the list of high priorities. Gov. Rick Scott's "Keep Florida Working" budget recommended nearly $1.6 billion to protect and preserve Florida's natural resources. Revenue from The Water and Land Conservation Constitutional Amendment, Amendment 1, was expected to be allocated. A revamp of state water policy was in the works.

Heading into the last week of the session, things looked fairly normal. The House and Senate budgets were being negotiated, although the delta seemed a tad larger than previous years ($5 billion). Other must-pass bills were being lined up for floor debate in each chamber. Final compromise dialogue and amendment drafting was taking place among key sponsors, legislative staff, and (again) those lobbyists.

But then three days before the Friday finale, the House pulled up stakes, struck its side of the tent and literally went home. This is a bi-cameral Legislature, meaning that unless both the Senate and House are in session passing bills, messages, amendments, texts and tweets (back and forth), no final action on legislation can take place.

Senate entreaties to the House to "please, come back!" were rejected. The Senate promptly sued (of course) and the Florida Supreme Court in turn ruled that the House action was indeed unconstitutional.

However, given the practical effect that the circus had already moved on to the next town (that is, home), no follow-up enforcement was recommended.

What passed?

Not much, actually, in the field of environmental law. Here is the short list. (Note: When you obtain copies of finally enacted bills from either Senate or House websites, make sure that you see the word "ENROLLED" (not ENGROSSED) signifying final passage by the full Legislature.)

Senate Bill 1216 (CS/CS/SB 1216), constituting an omnibus growth management bill, probably qualifies as the "big bill" of the regular session. SB 1216 includes the incorporation of other separate bills that were rolled into 46 pages of community development and growth management and control amendments.

Various changes include allowing landowners and applicants to apply for amendments to local government comprehensive land plans; substituting a state coordinated review process for the long-established Development of Regional Impact program; modifying the sector planning process; establishing a pilot program in Pasco County for 10-year "connected city corridors;" elimination of certain regional planning council duties (and eliminating the Withlacoochee RPC); and allowing water management districts to grant a consumptive use permit for the same period of time as in certain approved master development orders.

This is not an all-inclusive summary of SB 1216 contents, so the bill is worth reading for other changes to this area of law.

Remember the Bert Harris Private Property Rights Protection Act enacted several years ago? HB 383 made several changes to this law and created a new cause of action for property owners to recover damages for a governmental entity's "prohibited exaction," defined to mean any condition imposed on a "proposed use of real property that lacks an essential nexus to a legitimate public purpose and is not roughly proportionate to the impacts of the proposed use that the governmental entity seeks to avoid, minimize, or mitigate." You can bet the lawyers are chomping at the bit to test that new language.

Would you believe that the Legislature addressed climate change issues? No, I didn't think so. However, check out SB 1094 on flood insurance reform. Among other changes specified is a coastal resource plan redevelopment component that includes principles, strategies and engineering solutions to reduce flood risk in coastal areas from high-tide events, storm surges, flash floods, stormwater runoff and the "related impacts of sea-level rise."

Others: HB 7021 amends and repeals various statutes related to programs under the authority of the state Fish and Wildlife Conservation Commission, including a number of revisions to the alligator management and trapping program and the marketing and sale of alligator hides and products.

HB 787 defines "recycled and recovered materials" and provides relief from liability for a conveyance of such materials under limited circumstances.

Lastly, certain Florida Department of Environmental Protection rules that trigger thresholds set by statute are subject to legislative ratification. HB 7081 ratified Rule 62-42.300, Florida Administrative Code, establishing minimum flows and levels for the Lower Santa Fe and Ichetucknee Rivers and associated priority springs. HB 7083 ratified Rule 62-701. 730, FAC, relating to construction and demolition debris disposal facilities.

What failed?

The state's budget, for starters.

As you no doubt have heard before, this is the ONLY bill required to be passed by the Legislature. Of course, with any legislative budget negotiation, there are a myriad of differences within the Senate, House and governor's proposed budgets.

This year's big ticket items that caused the late session impasse involved health care funding issues, including whether to expand Medicaid to cover some 800,000 uninsured Floridians not eligible for Medicare, and a pending June 30 expiration of federal aid that compensates Florida hospitals for treating uninsured patients.

Of course, this all puts into play the final DEP budget for 2015-2016. The governor's proposed agency budget included $150 million for Everglades restoration, $150 million for land acquisition and management, $50 million for springs protection and restoration, $100 million for water supply development and Keys wastewater treatment, $25 million for beach renourishment and $19 million for Florida state parks repairs, renovations and development.

House and Senate budget versions included different priorities and allocations. The environmental community was generally disappointed by legislative budget proposals that they felt shorted future funding for Florida Forever land purchases that were intended to comprise a key component of Amendment 1.

Also left unresolved was an effort by Everglades advocates seeking a legislative appropriation for the purchase of almost 50,000 acres of land currently owned by

PRESTON
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Seminole County alum plant expected to help improve water quality in Lake Jesup

By ROY LAUGHLIN

By the end of 2016, Seminole County officials hope to have an operating alum treatment plant on Soldier Creek in Sanford.

When completed, the facility will include an existing stormwater retention pond, a pump house and alum mixing equipment, and a concrete trough flow way.

After mixing with alum, the water pumped from Soldier Creek will flow down the trough. Flock formed by the reaction of alum with contaminants will fall through slots on the bottom of the trough, and from there will be collected into storage tanks.

The rest of the water will flow first to the existing retention pond and then return to Soldier Creek. The returning water should have little if any particulate matter and phosphate, and much less nitrogen. The plant will treat up to 32 million gallons a day.

Kim Ornberg, division manager for the Watershed Management Division with Seminole County Public Works, characterized the project as a cooperative effort between the Florida Department of Transportation, the Florida Department of Environmental Protection, the St. Johns River Water Management District and Seminole County's Watershed Management Division.

FDOT is involved through its Highway 17/92 widening project in Seminole County. The transportation department's least expensive option for highway drainage is through this enhanced stormwater treatment partnership.

FDOT will contribute a total of about $7 million for construction and $50,000 for operation and maintenance for the next 10 years. Subsequent additional O&M support will be negotiated when the current agreement ends, said Ornberg.

The facility, as yet unnamed, has been put up for bid, with the bidding to close June 10. The total cost may be as high as $7.7 million.

Construction is expected to begin in July and be completed by the end of 2016.

Meeting numeric nutrient standards through water treatment at the new facility is a benefit accruing to both FDOT and Seminole County to meet basin management action plan targets for the Lake Jesup watershed.

The new plant will remove about 2,000 pounds of phosphates annually, based on expected water flows. FDOT needs to meet a target of 200-300 pounds, Ornberg said.

The difference in the tally after FDOT's allotment is subtracted will go towards Seminole County's allotment for nutrient removal. It will make a significant contribution towards the 16,000-pound annual surface water load reduction target the county must meet within 15 years.

Because the timeframe to meet targets is phased in over 15 years, phosphate reductions from this plant and a couple of other projects will help meet the early requirements for Seminole County.

The new plant demonstrably provides substantial benefits to both partners.

"I think it is unique that we are taking advantage of an existing infrastructure and using it. One of the good things is working together with FDOT, DEP and SJRWMD to come with multiple benefits for everyone," said Ornberg, in describing the project and its outcome.

It's another example where projects that benefit both environmental and other goals—in this case, drainage—can be designed, built and operated at a cost savings through cooperative arrangements between different governmental entities.

PRESTON

From Page 6

U.S. Sugar south of Lake Okeechobee.

Major water policy changes stumbled out of the gate since Senate and House priorities did not align at the beginning of the session. SB 918, HB 7003, and HB 653 were the primary vehicles on this subject.

Springs protection, water conservation, water supply policy and Lake Okeechobee protection received significant consideration and attention during committee meetings.

Both Senate and House bills ended up sharing a surprising number of common elements on the topics of minimum flows and levels, the Central Florida Water Initiative interagency agreement and BMP rulemaking authority for balancing water quality improvement and agricultural activity.

Springs and aquifer safeguards would be fostered through additional basin management action plans to be developed on an accelerated schedule. Review the ENGROSSED versions of HB 7003 which passed the Senate and HB 653 that passed the House for more detail on these and other provisions since both bills could present starting points for reconsideration of many of these topics during the 2016 regular session.

Also failing passage was SB 648/HB 687, which would have repealed the new upcoming ban on the land application of septage scheduled to take effect on Jan. 1, 2016.

As well, a controversial bill on the oil and natural gas drilling process known as "fracking" (SB 1468/HB 1205) failed to garner sufficient support and died late in the session. And SB 1302/HB 841 would have made a number of changes to the DEP contaminated site assessment and cleanup program in Florida.

What's next?

On May 15, the Senate President and House Speaker issued a joint proclamation to their respective members notifying them of a special session to be held for a period of 20 days from June 1 through June 20, the maximum amount of time allowed under the state constitution.

This call for the return performance in Tallahassee lists primarily budget-related legislation filed during the regular session as authorized to be drafted and refiled for further consideration. Most all of the topics included pertain to healthcare-related and non-environmental bills that either contributed to the budget negotiation breakdown or other unfinished business deemed worthy of consideration by the legislative leadership.

Allocation of revenue proceeds from Amendment 1 and within the DEP Land Acquisition Trust Fund is also specifically listed.

A failed tax cut package also made the short list that includes an additional funding allocation intended to provide relief to the Voluntary Cleanup Tax Credit program helpful to the redevelopment of brownfield sites in Florida.

There is no doubt that behind the scenes discussions and negotiations are occurring among key representatives of the governor's office, Senate and House in advance of the reconvening of the Legislature in special session.

And as with any good performance, don't be too surprised to see the unexpected take place. There is also the ongoing opportunity for mischief. Substantive notations can be added within the hundreds of pages constituting the final appropriations bill, and conforming bills can be attached to and approved as part of the final budget.

After that, the legislative Big Top will close down for 2015. And if you can't hardly wait for next year's performance, you will be pleased to note that the session convenes early next year on Jan. 12.

Bill Preston conducts his statewide environmental law practice from Tallahassee. You may reach him at bill@ wprestonpa.com.

Reduction of coal-burning plants may not radically affect manatee wintering

By ROY LAUGHLIN

Florida's 2015 annual manatee count includes good news. Observers found more than 6,000 manatees in Florida's waters, the highest number since the census began in the late 1970s.

The first census in 1978 counted about 2,000 manatees. The recent cool winter likely contributed to the high count total because manatees congregated in large numbers in artesian spring runs and in canals at power plants.

These numbers precipitated a flood of opportunities for those who wish to use a few facts to impose opinions on others. Some people have raised the question as to whether the manatee's status as "endangered" should be changed to "threatened."

The Pacific Legal Foundation sued the U.S. Fish and Wildlife Service in 2012, demanding that the agency formally determine whether the manatee's status under the Endangered Species Act should be changed to "threatened." In July 2014, FWS formally began its evaluation process with a decision expected in July this year.

High manatee counts usually occur in years with prolonged, cool winters because manatees seek the warmth of springs and power plant cooling water outfalls. The Save the Manatee Club's website noted that: "Outfalls of ten power plants around Florida can be used by about 60 percent of the manatee population during cold snaps."

This statement reflected the recent manatee census information. In March, 2015, the Pacific Legal Foundation, through its Liberty Blog misappropriated this statement to undermine the Obama administration's attempts to set greenhouse gas emissions on coal-burning power plants.

Their post said that "the EPA is preparing to adopt carbon emission rules this summer that would likely shutter coal powered plants in Florida and cost billions of dollars in compliance requirements. The rules would also hurt manatees, which are currently listed as endangered by the U.S. Fish and Wildlife Service."

So how important are coal-burning power plants to the winter survival of manatees? In 2013, Florida had 15 coal-powered plants, only six of which are sited to potentially provide warm water for manatees. At least two of those are set for closure, one near Jacksonville as early as the summer of 2015.

TECO's four-unit Big Bend Power Station near Tampa is without a doubt the best example of a coal-burning plant that serves as a winter refuge for manatees in Florida. It currently meets all air emission standards using coal gasification technology.

"Manatees have not historically used power plants on the St. Johns River," said Dr. Robert Bonde, a research biologist for the U.S. Geological Survey in Gainesville, who has studied manatee population dynamics since the late 1980s. "The same was true of Crystal River."

He noted that the percentage of the manatee population that uses the warm water outfalls from power plants has, in the past, often been much higher than more recent surveys have found.

"In the past, about 20 percent used natural springs, and 80 percent used artificial sources. In the last synoptic survey, it is closer to 30-40 percent with 60 percent using power plants," he said.

There is no doubt that warm water outfalls from approximately 20 power plants on Florida's coast and along the St. Johns River serve as cold weather refuges for manatees. But only one of those plants is a coal plant, and it is sufficiently up-to-date to continue operation into the foreseeable future.

According to Bonde, FWS has dealt with power plant closures and conversions in the past by including permit provisions that require closed power plants to provide a source of artesian water to a basin or canal where manatees can congregate dur-

MANATEES
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Springs institute's promotion of artificial wetlands falls on deaf ears at JEA

By BLANCHE HARDY, PG

Robert L. Knight, PhD, director of the Howard T. Odum Florida Springs Institute, is promoting a low impact ecological solution to JEA that could help in preserving aquifer levels and flows in regional springs and surface waters.

The institute is proactively pursuing avenues through which their concerns over dropping aquifer levels and reduced flow in springs and rivers may be addressed.

In an effort to mitigate potential impacts in the Jacksonville area, the institute has requested $2 million in state funds to purchase 500 acres near a JEA wastewater treatment plant with the hope that JEA will agree to construct an artificial wetland there.

The project would demonstrate the viability of using wetlands to polish treated effluent on-site and return it to groundwater through recharge. This would serve to offset groundwater withdrawals as well as reduce the volume of treated wastewater discharged into the St. Johns River.

So far, JEA has not engaged with the proposal.

Anticipating success of the proposed project, the institute estimates that creating a larger functionally compatible system would cost roughly $21 million.

"The purchase of land for the JEA project would be eligible for funding through the Amendment 1 land conservation referendum voters approved last November if the property is opened to the public for recreation after its completion and serves as a wildlife habitat area," said Knight.

JEA reports their sanitary sewer collection system handles more than 70 million gallons of wastewater every day. Their waste collection and treatment system consists of more than 3,700 miles of collection lines, over 1,300 pumping stations and 11 wastewater treatment plants.

The utility operates its water supply service under a 20-year consolidated consumptive use permit approved in May 2011.

That permit governs 27 combined use permits and allows the utility to pump up to 142 million gallons of water a day, which is equivalent to JEA's projected water demand in 2021. The permit also allows the utility to increase their allocation to 155 mgd in 2031 if key conditions are met.

By providing additional reclaimed wastewater to other permit holders, JEA could increase their allocation up to 162.5 mgd if those supplied reduce their groundwater withdrawals accordingly.

The institute's proposal may be an avenue through which groundwater withdrawal impacts to aquifer levels in the areas surrounding Jacksonville may be, in part, addressed by a demonstrated successful and regulatory-approvable method.

"JEA already has several thousand acres of underutilized land that could be a home for a recharge project, the Peterson Tract near Baldwin," said Knight. "Orlando has a similar 1,200-acre constructed wetland treatment system so they can discharge into the St. Johns River.

"This is a project that JEA should be embracing but they are staying mum and are actually looking to other water sources instead."

Soil, groundwater cleanup efforts continue at Pensacola Naval Air Station

By ROY LAUGHLIN

Contaminated sites at the Pensacola Naval Air Station were added to the U.S. Environmental Protection Agency's National Priority List in 1989 and, since then, remediation efforts have identified the nature of the contamination and its health risk potential.

Remediation efforts at the air station are managed under the Installation Restoration Program established by Section 211 of the Superfund Amendments and Reauthorization Act of 1986.

Isolated sites and facilities with high contamination levels have been cleaned up and nine subgroups, referred to as operating units or OUs, have been slated for phased cleanup during the decades since.

In 2013, OU2, consisting of an airplane refurbishment facility, along with its storage areas, an industrial wastewater plant, sewer lines and an adjacent landfill, were slated for remediation efforts that were intended to take OU2 to the point of post remediation monitoring.

The refurbishment facility, the first parts of which were built in the 1930s, operated through the 1970s. During its four decades of operation, almost all aspects of airplane renovation occurred in buildings and workshops in OU2, including the use of solvents for degreasing, removing paints and applying paints and coatings.

Later, the facility added an underground storage tank for fiberglass resins and an extensive metal plating shop. Acids and cyanide were used to prepare metal components for electrolytic coating and the coating baths contained aluminum, cadmium and other metals.

During the World War II era, many of the liquid wastes were treated at an industrial wastewater treatment plant and disposed of though an outfall into Pensacola Bay. Later, the wastes were collected and disposed of in the Gulf of Mexico.

Much of the remaining contamination is from spills and residues, none of which, according the planning document, were large or extensive.

In 2013, Tetra Tech prepared a five-year remediation plan for OU2 and cleanup efforts are now underway. The remediation plan addresses contamination of both soil and groundwater. Prior to 2013, contaminated soil hotspots were excavated for off-site disposal. Most of the facilities have been treated according to the original plan.

One site in particular, the North Chevalier Field Disposal Area site, was originally slated for hot spot excavation and off-site disposal during the current five-year plan.

More recent findings indicated that asbestos wastes are a significant component of the soil, necessitating modification of the original decision to excavate.

The U.S. Navy and EPA are close to approving an amended plan for the disposal site, according to Dawn Harris-Young, a public affairs specialist with EPA Region 4. The amended plan involves conducting the previously planned excavations, but with added precautions because of possible asbestos presence. The site will be capped with clean soil.

The use of radium over the years at the facility has created the need to make a second modification to the original plan. The refurbishing facilities included a radium dial shop where glow-in-the-dark radium salts were applied to gauges and dials.

In 1978, a barrel containing radium wastes spilled but apparently left no significant contamination.

More recently, according to Harris-Young, the Navy discovered abandoned drain lines that led to the wastewater treatment plant. They initiated an investigation to determine if those lines contain radium residues, and if so, at what concentration.

The presence of radium in the lines will be determined through sampling efforts presently underway. Any additional work depends upon the results of that analysis.

Considering OU2 as a whole, the list of contaminants in soil and groundwater include several dozen identified metals and organic compounds. But concentrations of any single contaminant, after hotspot soil removal that began in 2008, are not high enough to pose a significant risk to human health if appropriate risk reduction actions occur.

The Tetra Tech planning document for OU2 endorsed soil capping and institutional controls that limit contact with contaminated soil and prevent pumping of water from the site for any use without review.

In many instances, building slabs, foundations and parking lots have already provided sufficient barriers to exposure; no additional isolation will be needed.

At five of the nine OUs at the air station, the Navy expects to perform only groundwater monitoring in the future.

For the remaining four, a final determination has not yet been made. That includes OU2 because the five-year plan is not completed.

Contractors working on the cleanup effort at the air station include Resolution Consultants, a joint venture of AECOM and EnSafe; a joint venture between Agviq Environmental Services and CH2M; and Tetra Tech.

Once cleanup of OU2 is complete, contamination at a few more operating units will be addressed. The remaining remediation work is slated for completion within the next five to ten years.

PAFB working to overcome erosion issues

By BLANCHE HARDY, PG

The U.S. Air Force has applied for a permit from the St. Johns River Water Management District to make permanent shoreline repairs along Patrick Air Force Base's Rescue Road.

The base installed 100 feet of Jersey barriers, riprap and small boulders between the road and shoreline to counter aggressive, high wave energy beach erosion generated during last winter's cold snaps.

The riprap and barriers initially protected a 16-inch sewer force main and reclaimed wastewater reuse lines along the road. In the original emergency permit, Patrick AFB staff estimated failure of the sewer line could result in a release of more than 100,000 gallons of sewage within a few feet of the Banana River Lagoon.

The emergency controls also provided protection from erosion along the base's runway at the northeastern border of the property.

The Air Force's current application requests restoration of a small upland area and installation of shoreline stabilization along 300 feet of the Banana River Lagoon shoreline adjacent to Rescue Road.

The permit will allow the base to continue to retain the boulders and rip rap placed along the road as emergency controls.

The high energy of the interaction of the waters of the river and the shore make the favored erosion control option—planting mangrove and other vegetation stands—problematic.

Because tidal exchange and interactive flushing with the Atlantic Ocean are limited in the Banana River Lagoon and water circulation is predominately wind driven, there may be under certain conditions no mass flow of water and subsequent flushing of the systems' waters.

Air Force Base representatives are working with the water management district, the state Department of Environmental Protection, the U.S. Army Corps of Engineers and the National Oceanic and Atmospheric Administration to develop a long-term stabilization solution for the site.

Getting the water right requires fact-based solutions, legislative common sense

By SUSAN TELFORD

I have owned and operated an environmental consulting and restoration firm in Florida for over 20 years and, due to the pollution of our waters, our work is making us sick.

Our Florida waters and marine life are seriously impaired and—even after all of the years I've reported on worsening environmental conditions—words are not enough.

I've had the opportunity to visit most of Florida's waterbodies within the last month and I'm mad. Mad that marine life is suffering, mad that the beautiful springs I visited as a college student are green and algae-ridden, mad that the Gulf of Mexico I swam and fished in is dark green due to the BP oil spill, mad that our governor and legislators do not seem to be listening to their constituents, and mad that funding from Amendment 1 is not going where Floridians intended it to go.

Aside from Senators Thad Altman (R-Brevard) and Joe Negron (R-Palm Beach), and Representative Patrick Murphy (FL 18), politician are not listening—nor are a few environmental activists who need to get their facts straight. Finger-pointing and negative attacks do not provide the solutions that we need to get the water right. Transparency and facts based on scientific evidence will demonstrate the need for funding to appropriately address the majority of our water issues.

There are many reasons that Florida's waterbodies are in trouble and, liekwise, there is no one easy solution.

After conducting a benthic study in the south fork of the St. Lucie River in Martin County in mid-April, the following medical attention was required less than 24 hours after the study: a cortical steroid shot for inflammation of the eyes and face, an ocular antibiotic and a horse-pill-sized broad spectrum antibiotic to be taken for two weeks.

Conducting the benthic study in the St. Lucie was a true eye opener (not really as my eyes were closed shut with infection afterwards). In addition to the tea-colored water of the river, the ooze sitting on the bottom of the river erupted in an exhaust plume with an aroma akin to 50 shades of feces with each footstep. The odor was the worst under the Palm City Bridge. There were three of us, gagging from the stench, dreading the next step within the 50 foot study area. The worst part was knowing what was going to happen with each step.

Ironically, while conducting our study, a small Boston Whaler with the name "Marine Research" across the side was meandering around the south side of the bridge with all three marine researchers fully outfitted in what looked like storm gear due to the rainy weather. It may as well have been HazMat gear. They were clearly not going in the water. How can one conduct marine research without getting out of the vessel and looking to see what's on the bottom? For us, a true benthic study requires thorough research—historical data, maps, visuals, water and soil sampling, underwater photography, etc.—but the most important part of that research is getting in the water to look for signs of marine life, seagrasses and habitats. That is how we earn our living.

After witnessing the marine research methodology, I determined that they must already know how polluted the water is and, for health reasons, do not dare get in. So I won't question the accuracy of their collected research information. They likely share the same frustrations that I do.

There are harmful bacteria in the St. Lucie River and swimming in it will make you sick. Enterococcus bacteria have been repeatedly found and recorded by Martin County's environmental engineers. Enterococcus bacteria come from human, pet or wildlife waste and from leaky septic tanks in the area. The facts are recorded in the collected data in Martin County.

Now is the time for the representatives of the area—Stuart, Palm City and Martin County—to work with the South Florida Water Management District, Florida Department of Environmental Protection and U.S. Army Corps of Engineers to seek funding to address these problems. (The corps isn't responsible for the enterococcus bacteria, but since they do stir it up with discharges from Lake Okeechobee, they might as well help clean it up.)

After our St. Lucie experience, we worked in Crystal River, which should be renamed the Algae Bloom Lagoon. Thanks to very strict monitoring by volunteers, the Three Sisters spring boil is in better condition than the river it feeds. And although Three Sisters is still somewhat healthy and the water is still blue, we only saw one school of 15 small fish in all three spring boils combined. That's it—and no diversity of species. That's bad.

On our way across the state, we stopped at Lake Panasoffkee in Sumter County and collected some mollies for our fish tank. After a day or two in our freshwater fish tank, one of the mollies had a large lesion, so we had to remove it from the tank. Two more died due to their inability to adapt to freshwater a few days later. We have one lone survivor.

We've spent the last few weeks in the Florida Keys. I am happy to report that the Gulf of Mexico is still crystal blue, there is a large diversity of fish—I caught six different species within 30 minutes—and Florida Bay is on the mend. There are large schools of fish, corals, tons of seagrasses and clear water. There *are* issues with the lack of flow in the canals, but Monroe County, DEP, FDOT and others are addressing the problem with sewer hookups and canal improvements, while investigating sustainable ways to address ongoing environmental issues.

When asking locals if they were concerned about the polluted water being sent south from Lake Okeechobee, the response was simple: "There's a lot of water between here and there, and the environment will do what it is supposed to do." Or, the other response: "The corps did it, let them fix it."

After experiencing the rigors of our benthic study of the St. Lucie, it is apparent that we need to keep the polluted water in Lake Okeechobee where it belongs, until it can be properly filtered. In addition, we need to cleanup our septic tanks, and update and retrofit our water treatment facilities.

We conducted a benthic study in Miami off of the Julia Tuttle Causeway a year ago and surprisingly, the water was cleaner than the St. Lucie—despite its proximity to high density population of downtown Miami and the port.

Sending the water south from Lake Okeechobee only solves a part of the problem. The water management districts should continue creating stormwater treatment areas around Lake O to hold the excess water, clean the water from the lake using aquatic plants in flow-through marshes, and let it stew for a while before it goes anywhere. Polluted water needs to be treated on site and stay there.

Some counties have chosen not use fertilizer during the summer months, or use it on a limited basis. That's one solution. If a fraction of the emerald green yards

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P.O. Box 2175
Goldenrod, FL 32733

Michael R. Eastman
Publisher/Editor
mreast@enviro-net.com

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 only. The opinions expressed on this page are those of the authors.

TWACHTMANN
From Page 1

Dale convinced the corps to redesign many aspects of the project to reflect emerging concerns that major engineering projects needed to address much more than just engineering problems. Impacts upon natural systems were critically important problems that needed to be addressed as well. In fact, the environmental impact statement developed for the bypass canal, which was drafted by the district, was one of the first ever successfully filed for a federal project in Florida and maybe even the country.

Later, as administrator of water resources & public works for the city of Tampa, Dale recognized the devastating effect that continuing discharge of millions of gallons of secondarily treated wastewater every day was having upon Tampa Bay and lead the fight to build the Howard F. Curren Advanced Wastewater Treatment Plant.

The plant was one of the most advanced of its time and remains one of the largest denitrification filter plants in the world with a design capacity of 96 million gallons per day average flow. Just recently, the Southwest Florida Water Management District reported seagrass beds in Tampa Bay have expanded beyond all expectations and water quality tests indicate that the bay is as clean as it was in the early 1950s.

Dale was visionary in recognizing how water conservation and wastewater reuse would be the next most important and perhaps last low-cost water supply source for Florida. He saw the more common and cheaper groundwater sources being depleted even as the state's population continued to grow at double-digit percentages and knew that for every gallon conserved or reused, one less gallon would be needed to meet demand from more expensive new sources.

To score the point, he famously drank a glass of treated wastewater from the new Tampa plant to prove its safety. Under his leadership, conservation and wastewater reuse became priorities for the city of Tampa. That ethic continues today as current Mayor Bob Buckhorn recently called for finding a way to return more of the flow from the Curren Plant, some 50 mgd on average, back into the drinking water supply … using a concept that Dale proffered decades ago … in the 1960s!

After a four-year stint working for a private engineering firm solving water and wastewater problems as far away as Nepal and Jamaica, Dale was appointed as secretary of the Florida Department of Environmental Regulation by Gov. Bob Martinez. From 1987 to 1991, he called upon his extensive background in Florida water resource management, and championed and directed many critically needed programs including:

• The Surface Water Improvement and Management Act (SWIM): Dale was instrumental in leading the realization that Florida needed to do more to protect and restore its irreplaceable surface waters. With pollution from point sources reasonably under control, it remained clear that pollution from less direct sources was still a burgeoning problem. SWIM allowed agency partners from across the public and private sectors to work together, pooling resources and attacking pollution on a systemic basis by looking at watersheds in their entirety rather than point by point.

• The Solid Waste Management Act: Dale was a major leader in fostering the concept that there was opportunity in recycling mankind's unwanted garbage. He pushed for including in the act an important component that required all Florida counties to develop programs to separate and offer for recycling a majority of certain materials at their landfills that would otherwise be thrown away. This act became a model for other states.

• Regional Water Supply Planning: Recognizing that local governments were having difficulty finding future water supplies within their own boundaries while others had plenty, Dale championed the thought that some water needs could best be met by water users cooperating on a regional basis. He advocated for water users to work together for regional water supply planning. This in turn would reduce the propensity for water wars and allow users to share the growing cost of finding and developing new sources. Regional water supply planning and partnering is now a legislated role of water management districts and regional water supply entities.

Other historic legislative acts or agency rules in which Dale played a major role as secretary of DER both writing and supporting included:

• Stormwater utility legislation that established local governments' ability to self-fund improvements to their local systems by establishing a rational and logical basis for assessing charges based on services rendered. Today, 163 local governments utilize a stormwater utility to serve their citizens in addressing their communities' flooding and surface water quality problems.

• Reclaimed water policies that encouraged local governments and businesses to more fully utilize all their water resources by treating the "products" from their domestic and industrial water treatment systems (he called it "recovered water") to appropriate levels for their highest and best use. Today, Florida reuses over 660 million gallons a day, which is the highest wastewater reuse in total volume of any state in the U.S.

• Conservation and environmental land management and acquisition including the East Everglades National Park expansion.

• Activity-based permitting to avoid duplicative state permitting programs that eventually led to the creation of the current Environmental Resource Permitting system.

After his long career in public service, Dale continued to innovate and lead the way in the private sector throughout the U.S., many times setting the standard for how to analyze and develop solutions for long-standing complex problems.

He eventually retired on the 17th green of his favorite golf course in Lakeland and spent much of his new-found time when not golfing, traveling with his beloved wife and studying historic battlefields.

Dale H. Twachtmann was an extraordinary man who had an extraordinary sense of what needed to be done and went about it with a wisdom, creativity and sensitivity only true leaders have.

He was an articulate visionary who knew how to extract the best from all who knew him—friends, co-workers and employees alike. He was a mentor and teacher for all. He leaves a very large void in all our hearts—and in Florida's.

Editor's note: The column was contributed by friends of Dale Twachtmann.

Calendar

June

JUNE 6 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations- 8 Hour, Daytona, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6 – Course: Refresher Training Course for Experienced Solid Waste Operators- 8 Hour, Daytona, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6 – Course: Refresher Training Course for Experienced Solid Waste Operators- 4 Hour, Daytona, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6-7 – Course: Backflow Prevention Recertification, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6-7 – Course: Backflow Prevention Recertification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6-7 – Course: Initial Training Course for Transfer Station Operators and Materials Recovery Facilities-16 Hour, Daytona, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6-7 – Course: Refresher Training Course for Experienced Solid Waste Operators- 16 Hour, Daytona, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 6-14 – Course: Backflow Prevention Assembly Tester Training and Certification, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 7 -10 – Conference: American Water Works Association Annual Conference and Exposition, Uniting the World of Water, Anaheim, CA. Call 1-800-926-7337 or visit www.awwa.org.

JUNE 8 - 11 – Symposium: Southeast Lakes & Watersheds Combined Technical Symposium, Naples, FL. Presented by the Florida Lake Management Society and the North American Lake Management Society. Visit www.flms.org.

JUNE 10-12 – Conference: 38th Annual Conference of the Florida Association for Water Quality Control, Naples, FL. Call (813) 623-6646 or visit www.fawqc.com.

JUNE 11 – Forum: Northwest Florida Brownfields Redevelopment Forum, Callaway, FL. Presented by the Florida Department of Environmental Protection's Northwest District, in partnership with the U.S. Environmental Protection Agency and the West Florida and Apalachee Regional Planning Council. Visit http://dep.state.fl.us/northwest for the agenda.

JUNE 12-13 – Course: Backflow Prevention Recertification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 14-17 – Course: Introduction to Backflow Prevention, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 15 – Symposium: 2015 Spring Symposium of the Southeast Desalting Association, Hutchinson Island, FL. Call (727) 781-7698 or visit www.southeastdesalting.com.

JUNE 15-17 – Asbestos: Inspector, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 16-17 – Course: Cross-Connection Control: Survey and Inspection, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 17-19 – Conference: Annual Conference of the Florida Stormwater Association, Integrat-ing Water Resources, Sanibel, FL. Call 1-888-221-3124 or visit www.florida-stormwater.org.

JUNE 18-19 – Course: Cross-Connection Control: Ordinance and Organization, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 18-19 – Course: Asbestos: Management Planner, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 18-19 – Course: Backflow Prevention Recertification, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JUNE 19-27 – 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.

JUNE 20-28 – 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.

JUNE 23-26 – 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.

JUNE 25-26 – Conference: 2015 Summer Symposium of the Florida Local Environmental Resource Agencies Inc., Gainesville, FL. Call (248) 933-1069 or visit www.flera.org.

July

JULY 6-7 – Course: Phase I Environmental Site Assessment and All Appropriate Inquiry Training and Licensed Environmental Professional Exam, Orlando, FL. Presented by the International Society of Technical and Environmental Professionals. Call (850) 558-0617 of visit http://instep.ws.

JULY 6-10 – Course: Backflow Prevention Assembly Tester Training and Certification, Altamonte Springs. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 10-11 – Course: Backflow Prevention Recertification, Fort Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 13-17 – 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.

JULY 13-17 – Course: Asbestos: Contract/Supervisor, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 16-18 – Conference: Florida Section of the American Society of Civil Engineers 2015 Conference, Engineering Resilient Sustainability. Call (561) 215-4311 or visit www.fla-asce.org.

JULY 17-18 – Course: Backflow Prevention Assembly Repair and Maintenance Training Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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

JULY 18-19 – Course: Backflow Prevention Recertification, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 18-26 (consecutive weekends) 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.

JULY 20 – Course: Introduction to Lift Station Maintenance, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 20-22 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 21 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations-8 Hour, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

Send notices of events for our Calendar page to mreast@enviro-net.com.

Corps report: ASR not as promising as first thought for use in 'Glades restoration projects

By ROY LAUGHLIN

The Comprehensive Everglades Restoration Plan includes an aquifer storage and recovery component that will inject excess surface water into the Floridan Aquifer during periods of high rainfall and recover it when needed.

The plan calls for 330 wells, each capable of injecting up to five million gallons of water per day. The plan is ambitious and without precedent.

The U.S. Army Corps of Engineers has spent more than a decade evaluating ASR to determine whether the technology is suitable for widespread use in South Florida.

The findings of the multidisciplinary team were presented in a draft report that was peer reviewed by a panel of the National Research Council, the operating arm of the National Academy of Sciences.

The draft report proposes significant modifications to earlier implementation plans and encourages a slower, "phased" implementation effort that allows continued ASR evaluation as each new well is drilled and operated.

The report proposes reducing the number of wells from the proposed 333 to approximately 140 wells. The primary reason for the reduction is that legislation and rules require proposed ASR wells to be sited on state or federal land near large sources of flowing water, not influence withdrawals of existing users, and not use pressure high enough to fracture the Floridan Aquifer's matrix or breach confining layers.

Research findings suggest that relatively low wellhead pressures should be used.

Even with the new restrictions, the main conclusion is that ASR wells still have a place in the CERP scenario.

"We found that five mgd wells were indeed feasible," said Dr. June Mirecki, a senior hydrogeologist with the corps. "You can cut your losses due to salinity (blending saline aquifer water with pumped-in fresh water) and get better recovery."

She said that most of the ASR experience in Florida before the corps' pilot tests involved injections of one mgd or less, with a very mixed record of utility for withdrawal of usable water.

Those ASR wells, researchers hypothesize, never created a large enough reserve volume to maintain a useful amount of unblended water for withdrawal.

The ASR pilot well north of Lake Okeechobee operationally yielded 100 percent recovery. The well in Palm Beach County never reached 50 percent recovery, although three cycles of filling and recovery showed a sequential improvement from the initial 20 percent recovery in the first withdrawal to just shy of 47 percent in the third cycle.

The yield of a useful ASR well is pegged at 70 percent recovery; a target the corps report said might be reached with additional pumping to create a larger reserve volume.

NRC reviewers were less confident of increasing the yield of the ASR well near the coast. They cited results of a different survey of 18 ASR wells in Florida's coastal areas which found that only five of those wells demonstrated recoveries of over 60 percent.

Both studies noted that as brackish conditions increase in the Floridan Aquifer, acceptable recovery efficiencies can be achieved by maintaining a larger buffer zone and by creating a larger target storage volume. But whether that will consistently give a 70 percent recovery rate remains undemonstrated.

This report is one of two recent documents that significantly update and improve characterization of the Floridan Aquifer and could be used as a reference well beyond the subject of ASR for CERP.

The ecological risks of ASR got a passing score in the report. The report's authors said that adequate conditioning of the aquifer would reduce the mobilization of arsenic, mercury and perhaps sulfate. Adequate conditioning involves repeated addition and withdrawal of water, essentially a flushing operation to establish a buffer zone between the aquifer's native waters and the volume of water routinely added and withdrawn.

An eco-toxicological investigation found that generally quantifiable acute and chronic toxicological effects from recovered water were minimal.

The reviewers, however, noted that even if sulfide and sulfate concentrations in the aquifer provide some protection against mercury methylation, additional research is needed to determine the "impacts of calcium hardness on soft-water areas of the Everglades."

The NRC review also commented on the economics of ASR relative to other water storage or water management options. The reviewers noted that the corps report omitted economic analyses because that would be done when a well was being proposed for drilling.

But the NRC panel saw value in such efforts now, noting that "a clear demonstration of costs and benefits is needed if decision makers are to continue to support further research to resolve critical ASR uncertainties in the near term."

Both the report and NRC's review agreed that the findings in the technical report do not expose a "fatal flaw" to using five mgd ASR wells in South Florida.

But the NRC panel avoided a strong endorsement of it, urging "phased implementation."

The impression after reading pages of nuanced technical characterization is that ASR is not yet a plug-and-play technology and may never become one.

Nevertheless, a strong commitment to ASR use exists and has been fostered for the past 20 years. Consequently, ASR is a likely component of future Everglades's restoration projects.

FEDFILE

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menting any of the Phase 4 projects," said Ashley Williams, a spokesperson for the Natural Resource Damage Trustees for Florida. "We are partnering with DOI for the seagrass project."

These projects are still subject to a public notice period before final approval by the trustees. When and if they are approved, total funding for early restoration projects will be $832 million out of $1 billion allocated.

The $1 billion will be augmented, most people expect, when legal proceedings and the Natural Resources Damage Assessment is concluded.

Seismic surveys off Florida. In May, Carla Gaskin Mautz, deputy chief of staff at the Florida Department of Environmental Protection, sent a letter to the Bureau of Ocean Management asking for a delay in permitting seismic surveying off Florida.

Mautz's letter noted that BOEM's programmatic environmental impact statement establishes "a framework for further environmental review of specific actions and identifies mitigation requirements that focus on avoiding injury and impact to marine organisms," but "that data and information concerning the effects of activities to be conducted under the PEIS are either severely limited or absent."

"Florida recommends delaying permitting until data/information that is currently not available can be collected and effects assessed using this new information," she wrote.

Earlier this year, BOEM opened the offshore continental shelf from Virginia to Florida to oil and gas leases in its most recent multiyear leasing plan. It will be 2020 before leases just off Florida's Atlantic coast will be offered for drilling.

In the intervening period, oil and gas interests would like to conduct seismic surveys off the coast of Florida, as well as in other regions of possible lease sales. Those surveys involve creating very loud "blasts" using an underwater compressed air cannon.

Environmental advocates have adamantly opposed the use of air cannons underwater. They said the loud sounds harm marine organisms that use sound for communication and underwater navigation.

Many cities along Florida's Atlantic coast have passed resolutions asking the feds to either disallow the seismic surveys or not to permit drilling off Florida.

BOEM has not announced a date for survey permit approval.

"Florida is concerned about the effects of (geological and geophysical) activities on its marine and coastal resources including sea turtles, marine mammals and fishery resources and their habitats located in these areas," wrote DEP Spokesperson Dee Ann Miller in an email. "Much of Florida's economy is dependent on these healthy and sustainable marine and coastal resources."

Residential recycling guidelines. The National Waste & Recycling Association and the Solid Waste Association of North America announced new guidelines intended to improve protocols and standards for contracting practices in municipal recycling programs.

The guidelines provide advice for public agencies and private industry to improve the effectiveness of local residential programs. Those include best management practices for improving the quality and quantity of materials recovered from recycling processing streams.

The guidelines are intended to ensure that recycling programs are economically viable for both agencies and industry.

Advocacy group report notes wetlands' importance to flood control

By ROY LAUGHLIN

The 2006 U.S. Supreme Court case Rapanos v. United States was a major environmental lawsuit that yielded a definition of "waters of the United States" that is so vague that Clean Water Act protection for intermittent streams and isolated wetlands has since been severely curtailed.

In March of 2014, the U.S. Environmental Protection Agency outlined a proposed definition of waters of the United States under the Clean Water Act to provide clarity to such waters including isolated waterbodies with a functional connection to accepted waters of the U.S., wetlands and intermittent streams.

The comment period for the rule closed in November, but the agency is still in the process of finalizing it.

EPA statements about the rule's public benefits deal primarily with clean water.

But in March, an environmental group put a new spin on the value of expanding the scope of wetlands protected from development under the Clean Water Act.

The Environment America Research & Policy Center looked at recent flood events in 15 states to show how the loss of wetlands—and the functions they provide—exacerbates flood events.

Nationwide, the U.S. has lost approximately half of the wetlands once present in colonial times.

The group concluded that wetlands reduce the risk of flooding as well as mitigating its worst effects. As a result, floods in recent decades have set records for both inundation levels and monetary damages.

Global warming and climate change are likely to increase the risk of floods because a warmer atmosphere holds more water vapor, the source of rainwater that feeds floods.

The report estimated the value of wetlands to be $237 billion annually for water flow regulation, the slow release of flood waters from wetlands.

In the second part of its report, the center estimated the loss of wetlands using GIS survey information from the National Wetlands Inventory and presented a case study of recent significant floods in 15 states including Florida.

According to the report, Florida has 9.8 million acres of freshwater wetlands. Almost seven million acres of the state's wetlands are in 100-year flood zones. That amount could be larger because FEMA's current information on 100-year flood zones is incomplete.

The Florida case study characterized a flood in the Florida Panhandle a year ago. In April of 2014, Pensacola experienced historic rainfall levels during a two-day event. As much as eight inches fell the first day, and on the second day as much as 15 more inches fell during a nine-hour period.

The result was one death, $14.8 million in damages to Pensacola and assistance payments of $66.5 million to more than 14,200 Northwest Florida residents, according to the report.

Escambia County, according to the report, has 77,000 acres of freshwater wetlands, 63,000 acres of which are located in 100-year flood zones. Their capacity is estimated to be 25 billion gallons of water.

In this and the other case studies, the report primarily presented information about the impact of wetlands on the flood plain described and information about the loss of wetlands when that information was available. Unfortunately, the report does not characterize how the loss of wetlands would affect financial and other losses from flooding.

The report's analysis is primarily a plea for passage of EPA's proposed rule that will protect additional wetlands under the Clean Water Act. In the years 1954-1973, the U.S. lost on average about 458,000 acres of wetlands a year due to filling and other development. The loss tapered to just 59,000 acres per year from 1986 to 1997.

With Clean Water Act protections, the U.S. acquired 32,000 acres per year in 1998-2004. Even with the national recession, the trend reversed during the 2004-2009 period to a loss of 14,000 acres a year during that interval.

The report attributes the reversal in recent years to "a loophole in the law that could leave many wetlands outside the law's protection." That loophole, according to the report, is the Supreme Court's vague decision about the definition of waters of the U.S.

The report urges the EPA to finalize its rule to extend Clean Water Act protection to wetlands currently excluded.

Pasco receives DEP permit to use waste ash as roadway component

By BLANCE HARDY, PG

Pasco County received a permit to use processed ash from their Covanta-operated Solid Waste Resources Recovery Facility waste-to-energy plant as road construction material.

The facility produces about 200 tons of ash a day. Although processed ash has been used as roadway construction material in Europe for about twenty years, the permit allows the county to become the first in the U.S. to use recycled garbage ash in this manner.

The county, in cooperation with the University of Florida, installed and began tracking the performance of an ash-bearing test road at their waste management campus in May 2014.

"The test road was constructed using the standard roadway construction practices of the county's Road and Bridge Department," said Jason Gorrie, PE, president of JMG Engineering Inc. "The UF environmental research team worked closely the UF Civil Engineering Department and with the Florida Department of Transportation's State Materials Office in Gainesville to develop the specifications—particularly the appropriate asphalt mix."

The 1,000-foot-long by 25-foot-wide roadway consists of three test strips and two control strips. The location of the demonstration road was selected primarily for environmental permitting reasons.

"Because it was authorized to be constructed through a solid waste research, demonstration and development permit issued by the Florida Department of Environmental Protection, a location on the county's extensive solid waste campus made the most sense," said Gorrie. "The roadway does receive extensive heavy truck traffic. All three sections are holding up quite well with no observed physical failures."

To better understand the methods used to determine future roadway construction parameters, Gorrie provided the details of the test roadway's construction.

"The first test strip utilizes bottom ash as a compacted basecourse (basically replacing limestone in its entirety) with traditional asphalt on top," he said. "The second test strip consists of standard compacted basecourse (limerock) with asphalt that has bottom ash mixed in as an aggregate on top. The third test strip consists of standard compacted basecourse (limerock) with concrete that has bottom ash mixed in as an aggregate on top."

To monitor for potential impacts to the surficial aquifer, a series of groundwater monitoring wells were installed up-gradient and down-gradient of the roadway. No impacts to groundwater have been noted.

While the combustion process for processing waste through the plant is the same as usual, the ash handling practices have been modified to produce a usable roadway material.

"A condition of the DEP approval is that the bottom ash must be aged for at least three months before being utilized as a roadway construction material," Gorrie said. "The reason for this is that the UF research team identified a decrease in the leaching potential of the ash after it aged for three months.

"To accomplish (the aging), we intend to stockpile the ash on the existing ash monofill for a minimum of three months and, as roadway projects call for it, we will transport the aged ash to the construction site."

Cost savings of up to $100,000 per mile are estimated when calculating the cost difference of using ash. The ash will replace limerock and will eliminate disposal costs associated with the current permanent landfilling of the ash.

DEP's permit requires the receiving roadways to be within Pasco County lines. The county will begin identifying candidate roadway projects for which planning is complete or underway.

Construction of selected roadways utilizing ash may begin as early as mid-summer to fall of this year.

American Lung Association's 2015 State of the Air report released

By SUSAN TELFORD

Cape Coral, Fort Myers and Naples are at the top of the list of Florida cities that earned distinction as the "cleanest cities" in the country with no days of unhealthy levels of ozone or particle pollution in the air, according to the American Lung Association's 2015 State of the Air report.

Other cities on the list include Bismarck, ND; Elmira-Corning, NY; Fargo-Wahpeton, ND-MN; Rapid City-Spearfish, SD; and Salinas, CA.

However, more than four in 10 Americans, nearly 138.5 million people, inhabit counties where ozone or other pollutants make the air unhealthy to breathe.

The 16th annual ALA report indicates that the nation's air quality has shown progress in some cities, while others experienced increases in unhealthy air.

"Everyone has the right to breathe healthy air," said Harold P. Wimmer, president and CEO of the American Lung Association. "We must meet our air pollution challenges head-on to protect the health of millions of Americans living with asthma and chronic obstructive pulmonary disease."

According to the data collected from 2011-2013, the best progress appeared in the continued reduction of year-round particle pollution in the eastern half of the nation, most likely due to cleaner power plants and diesel fleets.

This year's report also provides evidence that a changing climate will make it harder to protect human health from the dangers of air pollution. Most impacted by poor air quality is the western U.S. where heat and drought created situations that cause episodes of high particle pollution.

"One challenge is that many more people are actually at risk than even our estimates show," said Wimmer. "We use the current ozone standard as the basis of much of our assessment, but that standard is weak and out of date, and does not reflect what we know harms children and people with lung disease.

"We urge the U.S. Environmental Protection Agency to update the ozone standard to reflect current science and give parents accurate information about air pollution risks in their community. A standard set at 60 parts per billion would provide much more accurate information and better health protection."

Another key finding in the 2015 report is that nearly 17.8 million people in the country live in 12 counties with unhealthy levels of all three pollutant measurements: ozone, short-term particle pollution and year-round particle pollution.

Six cities had a record number of days with dangerous levels of particle pollution, while many others had more than in the 2014 report. Overall, the levels of ozone showed mixed results, with many cities doing better than in the 2014 report, but many having more unhealthy ozone days.

The metropolitan Los Angeles area still has the worst ozone pollution, as it has for all but one of the 16 reports, even though the city reported its lowest average year-round particulate levels and fewest ozone days in the report's history.

Fresno-Madera, CA, tops the list's the most polluted area for particle pollution, the same distinction it earned in 2014.

ALA recommended several steps to safeguard the air everyone breathes starting with strengthening the outdated EPA ozone standards and providing an up-to-date ozone limit that follows the current health science.

They said that developing stronger regulatory standards will help drive cleanup of ozone pollution across the nation. ALA also recommended the adoption of a final Clean Power Plan by the EPA that sets tougher requirements to help reduce carbon pollution from power plants.

Most importantly, Congress needs to adequately fund the work of EPA and states to monitor and protect the nation from air pollution, they said.

"Through the history of this report, we've seen tremendous improvement in air quality, yet we've also discovered that air pollution is a more serious threat to our health than we previously knew," said Wimmer. "We have cleaner air today than we did 16 years ago—testament that the Clean Air Act works.

Avon Park approves funding to assess polluted sites at executive airport

By BLANCE HARDY, PG

The Avon Park City Commission recently voted to allow a budget adjustment to create a $300,000 contamination cleanup fund to allocate in excess of $58,000 to assess soil and groundwater contamination at the Avon Park Executive Airport.

The funds will be used to extend a city contract with Environmental Consulting & Technology Inc. to conduct the work.

Contaminants have been detected at two sites at the airport, the former Dumont Aviation Building and the aircraft staging area of Ag Flying Services Inc.

Contamination at the Ag Flying Services site, for which the $300,000 was originally allocated, was discovered during a Federal Emergency Management Agency-funded $1 million stormwater and flood management retrofit project.

Neither site has been determined to be an immediate hazard to human health, but both require cleanup.

The Dumont site, now occupied by Poole Industries, was discovered by Public Safety Director Jason Lister while investigating a report of existing contamination apparently resulting from former occupants draining petroleum products directly on the ground when conducting aircraft engine maintenance and repairs.

Preliminary figures for the remediation of this area are estimated at $100,000, possibly more.

ECT has been tasked with identifying the extent of contamination in relation to the aircraft maintenance and repair area, determining the extent of cleanup needed and developing a more detailed estimate for actual cleanup costs.

ECT has completed a limited assessment of the site. Mark Culbreath, principal scientist in ECT's Tampa office, notified the city that a limited assessment had confirmed the presence of petroleum products in the soil and groundwater at the site.

An additional 14 soil borings including the collection of samples and installation of five groundwater monitoring wells, plus the collection and testing of groundwater, are proposed by ECT in order to provide a report detailing the extent of cleanup necessary.

At the previously discovered Ag Flying Services site, former crop dusting operations are considered the likely source of the fuel and organic phosphates discovered in samples of soil and groundwater.

The city wants to continue to have agriculture-related aviation services available at the airport to support related businesses in the area and throughout Highlands County and the surrounding region.

The city is struggling with the financial burden of assessment and remediation of the sites and is hoping to recover at least a portion of the costs from the responsible parties.

Petroleum insurance funds would be difficult to obtain in this case as the releases are the result of maintenance over time rather than an actual spill or similar event-related release. That funding is used for petroleum-related work while excluding the pesticides that are present at the Ag Flying Services site.

Sarasota switches to deep injection wells

Staff report

The city of Sarasota has found a safer way to dispose of water treatment plant residue. By activating a new deep injection well, the city is no longer discharging its brine into Hog Creek, which flows into Sarasota Bay.

The city received written confirmation from the Florida Department of Environmental Protection in March that the deep injection well passed the on-site inspection and could begin receiving water residual, said Jan Thornburg, a spokesperson with the city.

She said the comprehensive deep injection well system and complex construction project cost about $6 million.

Before the well was installed, nine million gallons of water treatment residue and treated wastewater was discharged into Hog Creek and Whitaker Bayou each day.

The agreement only requires the discharge of brine into Hog Creek to cease. The city will soon meet that requirement by also stopping the permitted discharge of wastewater effluent into the bayou.

The city discharges about six million gallons a day of excess treated wastewater into the bayou that is not used or sold for irrigation purposes, Thornburg said.

The construction project included building the deep well, snaking new underground lines from the water and wastewater treatment plants to the well, and constructing a pipeline under 12th Street to deliver the treated material to the deep injection well.

The deep injection well has the capacity to receive up to 18 million gallons a day.

City officials said the well will be continually tested for safety.

"We anticipate the second phase of the system to be online within the next few weeks," Thornburg said in April.

West Volusia partnership ties in reuse facilities to benefit Blue Springs

By ROY LAUGHLIN

Volusia County's Blue Springs is subject to phased minimum flow and level targets, and current flows are substantially below those targets. Consequently, the state of Florida is out of compliance with a 20-year-old agreement to maintain Blue Springs as a cold weather refuge for manatees.

Over the past year, the St. Johns River Water Management District and several wastewater utilities in Volusia County teamed up on a plan to deliver potentially millions of gallons of water a day to the Blue Springs springshed.

The partnership is in the construction phase of connecting several existing county reuse water sources and one planned for construction in the future. These include the Deltona North Wastewater Treatment Plant, the Deltona Lakes Water Reuse Facility, Deland's wastewater treatment plant and Deltona's future Eastern Reclamation Plant.

The plants should be connected and providing about two million gallons a day by 2016. At some point after these plants are connected, the city of Sanford will hook up to provide an additional 1.5 mgd.

The partnership has two goals in mind: to provide irrigation water for landscaping in urban environments and to provide water to enhance aquifer recharge within the suburban springshed.

"In western Volusia County, there are few centralized population centers," said Brad Blais, PE, president of Quentin L. Hampton Associates Inc. in Port Orange and lead consultant for the project. "Right now in the Volusia Blue Springs area, approximately 70 percent of residents are not on sewer. They are on septic tanks."

The source of reuse water, therefore, has to come from areas both within and outside of the springshed. This is very different from many other utilities that limit reuse access to customers who also have sewer hookups.

Additional reuse water needed to augment water in the springshed will come from the St. John's River. It will be distributed as irrigation water to residential and commercial customers, and also through the use of rapid infiltration basins.

Blue Spring's historical long-term mean flow has been 157 cubic feet of water per second. Currently, legislation and a court settlement have established a phased plan with a current minimum of 142 cfs as the "allowable long-term minimum mean flow."

That will increase in April of 2019 to 148 cfs, and finally in March of 2024 to 157 cfs—a return to historical long-term mean flow volume.

By next year, reclaimed water from the combined plants will provide additional water to the springshed. In addition to reuse water, some of the water needed to eventually increase flow rates will come from the St. Johns River.

Blaise noted that Deltona is currently making plans to draw up to four million gallons a day from the St. Johns to augment reclaim water. Currently, Deland can withdraw up to two million gallons a day, but they plan to increase that to four mgd as demand increases.

The water volume required within Blue Spring's springshed is larger than any single plant can provide. Interconnecting the plants will "level the load" on all of them, said Blaise.

Eventually up to eight mgd could be provided to the springshed, drawing from a combination of treatment plant water and surface withdrawals from the St. Johns.

The interconnection partnership project cost is $6 million and should be completed by December this year.

It is one component of an expected $100 million effort over the next 10–15 years to develop additional water supply projects to reduce withdrawals from the Blue Spring's springshed, leaving water in the aquifer to feed the spring.

New well fields further east and south are expected to be among the likely replacement candidates.

Blais said that both augmenting aquifer water levels and reducing withdrawals from wells by expanding public drinking water systems are essential to meet the goals of the management plan to ensure Blue Spring's 157 cfs flow.

The water reuse plan, with its geographically extensive water sharing partnership, is not your typical water reuse scenario. But then, Blue Springs is not just another of Florida's First Magnitude Springs. It's one of the state's most notable.

Monroe evaluating projects in Keys canals

By PRAKASH GANDHI

Monroe County officials have embarked on a major program to improve water quality in their canal systems by launching a $5 million water quality pilot program.

As part of the effort, the county recently conducted testing on more than 500 canals, said Monroe County Sustainability Director Rhonda Haag.

The canals were rated as poor, fair or good for water quality and dissolved oxygen levels, said Haag.

Most of the canals tested were rated as poor or fair. As a result, county commissioners approved funding to complete several demonstration projects.

"As part of the projects, we will test different methods to see how well they work in restoring water quality," Haag said.

The methods will include techniques such as canal backfilling and organic muck removals. Another method being tested is deploying devices meant to stop seaweed from getting into the canals, Haag said.

At Sexton Cove Canal 29, off mile marker 106 in Key Largo, a crew from Adventure Environmental Inc. is working on an effort to place dirt and rocks into an over-dredged waterway.

The canal—about 225 yards long—has depths that range from 20 to 34 feet, far too deep to maintain water quality in a canal with little tidal flow.

The $1.36 million demonstration project aims to backfill the canal to shallower depths that will promote better flushing, and reduce or eliminate the unwanted layer of stagnant water.

Previous scientific studies indicated that only the upper six feet of the canals will naturally flush in the shallow Keys nearshore environment.

Haag said the Sexton Cove project is the most ambitious canal restoration effort so far undertaken by the county. It is expected to finish up in June.

Another method being tested is recirculating the water with pumps to improve dissolved oxygen levels.

"All of the projects will be finished by the end of the summer except the pumping project, which should be completed by 2016," Haag said.

The county's restoration projects were launched in 2003 to find effective techniques for improving water quality in more than 100 canal systems considered to have significant environmental problems.

The county received about $1 million in funding help from the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection.

"These agencies have been very proactive in getting these projects off the ground," Haag said.

"The Florida Keys has a marine environment and we are very reliant on the quality of our nearshore waters," she said. "We want to ensure that both our residents and tourists can enjoy it."

TELFORD

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around Crystal River limited their use of chemicals, it would most likely lessen the algae blooms. Elvis Presley filmed "Follow That Dream" on the Crystal River. If he saw it today, he'd be moaning like a hound dog.

The Florida Legislature is clearly ignoring the mandate of the people. Hopefully, while on break, they are doing their homework and reading the scientific facts regarding the deterioration of Florida's springs, rivers, lakes and streams, and will make fact-based decisions regarding how the funding for Amendment 1 should be allocated.

An overwhelming majority of Floridians voted for Amendment 1 to clean up our natural resources. It is sad that we now must rely on the very few who are listening to represent us.

We need to continue to pursue the policies that work; follow the plans outlined in the CEPP; encourage more farmers to use best management practices while irrigating, using fertilizer and holding water; and fund more efforts like the Grassy Waters Preserve project in the city of West Palm Beach.

Pollution has seriously impacted our waters. It has also impacted our $67 billion tourist industry with red tides, green springs and unhealthy fish. Soon, we'll be just as polluted as NY and NJ, and this governor and the elected representatives now in office who continue to ignore the people of Florida will be held accountable as the ones who did nothing.

We need to make sure our representatives do what we asked them to do with Amendment 1 money, know the facts and get the water right.

Susan Telford is a principal with EnvironMend in Jupiter and an environmental correspondent with the Specifier.

MANATEES

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ing cool spells, or to provide warm water by heating it.

These provisions have been in play since 1974, when a Fort Myers power plant closed, establishing a precedent for subsequent permitting processes.

Bonde said that encouraging manatees to use artesian springs, which they naturally prefer to do, and is a more sustainable strategy than depending on warm water outfalls.

In any case, coal-burning power plants in Florida contribute nothing to manatee population increases that is not available elsewhere from other sources.

RECLAIM

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to look at the potential water reuse projects. The 20-year plan will not be finished until late 2018.

"Tampa Bay Water identified projects and one of them was to reuse the reclaimed water here in Hillsborough County," Baird said. "Additional water supplies will be needed within 15 years, and so projects like these are necessary for the long-term water needs of the Tampa area."

Baird said the first step is to determine if rapid infiltration basins and wetlands will work.

"We also want to find out whether they can provide a yield of 20-35 million gallons a day, and then what permits are needed from the appropriate agencies," he said.

The next steps include developing an implementation plan, conducting hydraulic analysis and a pipeline route study, evaluating the future phase for additional water demand, and developing potential Lower Hillsborough River minimum flow recovery strategy modifications.

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