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Phosphate draft AEIS 6

The Jacksonville district office of the U.S. Army Corps of Engineers released a draft Areawide Environmental Impact Statement assessing the expected impacts of phosphate mining activities in Florida over the next 30 - 50 years.

SF water consumption 7

The South Florida Water Management District has released a study that shows that water usage has declined by 10-15 percent over the last five years—so much so that utilities have been able to shelve plans for water supply projects because future demand just isn't there.

GP pipeline 8

Georgia-Pacific's Palatka paper mill is on schedule to complete its wastewater pipeline to the main body of the St. Johns River by the October deadline. The tab for the project, including pipeline construction, pump stations, diffuser installation and other construction components, will total about \$30 million.

Expansion nixed 9

State environmental officials rejected a plan by Tampa Bay Water to expand its C.W. Bill Young Reservoir in Hillsborough County. TBW had applied to increase the capacity of the 15.5-billion-gallon reservoir by three billion gallons.

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Got a story lead?

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

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Steverson, Shortelle take the reigns at NWF, Suwannee River water management districts

By PRAKASH GANDHI

They both have valuable experience working in Florida's top environmental agency. Now, Jon Steverson and Ann Shortelle find themselves with something else in common—leading two of the state's water management districts.

Steverson has been chosen as the new executive director of the Northwest Florida Water Management District. He worked most recently as special council on policy and legislative affairs at the Florida Department of Environmental Protection.

Steverson, who started June 1, worked in the Governor's Office of Policy and Budget from 2005 to 2009 and was government liaison for the Florida Association of Counties from 2002 to 2005.

He has a law degree and a bachelor of science degree in geography from Florida State University.

Steverson's other experience includes his work for the department this year on SB 2142, which lifted a property tax revenue cap placed on water management districts by the state Legislature in 2011.

Steverson replaces Douglas Barr,

who left the district in April after Gov. Rick Scott refused to reappoint him.

In June, Steverson spoke with the *Florida Specifier* about his goals for the district and the challenges he faces.

He said resolving the dispute with Alabama and Georgia over water from

the Apalachicola-Chattahoochee Flint river system is of "utmost importance."

"ACF is a big challenge for us. It plays a critical role in the North Florida

EDs
Continued on Page 16



Photo by Scott Jernigan, Baskerville-Donovan Inc.

Demolition of the "Old Stinky" wastewater treatment plant in Pensacola is now underway. The work includes a concerted effort to reuse and recycle materials recovered during the process. See brief on Page 6.

Adena Ranch permit app sparks heated debate in Marion County and beyond

By MELORA GRATAN

If the vision of Frank Stronach is realized at Adena Springs Ranch, cattle will graze on grass their entire lives in northeastern Marion County instead of being shipped off to the Midwest for a finishing process that involves confinement and antibiotics.

Proponents say the ranching operation would be green and generate jobs, and could even create a well known beef brand such as Kobe Beef.

Opponents, however, don't like how Stronach and ranch officials plan to make the idea a reality.

The ranch has applied for a consumptive use permit for the withdrawal of 13.267 million gallons a day of groundwater—an amount that has sparked debate over current and future groundwater usage.

More specifically, the concerns stem from current drought conditions, declines in area springs and regional groundwater levels, as well as existing

nutrient pollution.

"The place and timing is bad—even though the thought is good," said Robert L. Knight, PhD, director of the Howard T. Odum Florida Springs Institute. "The practicality is not there because the whole thing is dependent on groundwater pumping versus rainfall. There is nothing about grain-fed beef that justifies that (withdrawal amount). It is wrong."

The institute is a non-profit organization dedicated to restoring and protecting Florida's springs through the development of sound science and effective management. Two of its top priorities are Silver and Rainbow springs.

The groundwater for the ranch would come from the same basin that feeds Silver Springs, which Knight said is declining beyond levels observed in more than 80 years of record-keeping.

The records show that flows at both springs have been declining for the past 50 years.

From 1950 to 1985, Silver Springs' flow averaged about 79 cubic feet per second greater than Rainbow Springs' flow. In 1985, the flow at Silver began declining faster than Rainbow's to the point that Rainbow has been the higher flowing spring since 1998.

Then, starting in the 1990s, the correlation between rainfall amounts and the flow levels of Silver Springs began to diverge, Knight wrote in a letter to officials at the St. Johns River Water Management District.

Though ranch officials cite an unexplained catastrophic event around

Judge supports state's proposed water quality rules as valid

By MELORA GRATAN

The numeric nutrient criteria rules proposed by the Florida Department of Environmental Protection have been forwarded to federal officials for final approval after a state administrative law judge said the environmental groups challenging them failed to prove their case.

"Petitioners failed to prove by a preponderance of the evidence that the narrative nutrient criterion is an invalid exercise of delegated legislative authority," wrote Judge Bram D.E. Canter in the conclusion of a 58-page order released on June 7.

Conversely, DEP did prove "by a preponderance of evidence that the proposed rules are not invalid exercises of delegated authority."

Environmental groups including the Florida Wildlife Federation, Sierra Club, Conservancy of Southwest Florida, Environmental Confederation

of Southwest Florida and the St. Johns Riverkeeper opposed the state's proposed NNC rules, calling them too diluted and difficult to enforce.

Represented by Earthjustice, the groups presented experts that claimed the rules would not keep nitrogen and phosphorus levels from forming harmful algae blooms in waterways.

In addition to challenging the substance of the rules, the petitioners' disputed DEP's authority to propose them in the first place.

Not only did the environmental groups fail in their attempt to question the agency's authority, but the judge said their evidence was lacking substance and volume in comparison to all of the data and testimony presented by DEP.

The ruling supports all the work that the state has done to develop these peer-reviewed rules, said DEP Secretary Her-

NNC
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ADENA
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EPA awards brownfield grants to Tampa, Orlando, Brooksville, Casselberry

Staff report

The U.S. Environmental Protection Agency awarded four Florida communities a total of \$1,300,000 to support local brownfield programs.

The city of Tampa will receive \$400,000 to clean up the Encore Retail Expansion Site.

When the project is complete, a retail shopping center will occupy the site.

Casselberry will have \$200,000 for petroleum remediation at its Police Department property on Highway 17-92.

Brooksville will use its \$400,000 grant to conduct seven Phase I and three Phase II environmental site assessments.

Brooksville's grant is split evenly between hazardous substances and petroleum-focused cleanup projects.

Orlando also received \$400,000, equally divided between hazardous substances and petroleum-focused projects.

The city will perform 20 Phase I site assessments and will also develop up to four cleanup plans.

The focus of most assessments will be

on Orlando's Parramore community.

Florida's \$1.3 million share for brownfields rehabilitation projects is part of a \$69.3 million appropriation announced in May, which provided funding nationwide to 245 grantees in 39 states.

The size of the individual grants in Florida was consistent with those provided to communities elsewhere.

Another round of ozone reduction efforts. The EPA is renewing its efforts to work with local authorities in areas that do not currently meet the 2008 air quality standards for ground-level ozone.

Based on the most recent air quality monitoring data, the agency identified 45 areas across the country that do not meet the 75 parts per billion ozone standard.

Of these 45, all but three have ozone control programs in place because they did not meet the 1997 ozone standards either. The three without programs in place reflect locations that have only recently had ozone exceedances of the standard.

Efforts to reduce ozone smog are jointly shared between the EPA and local and state

authorities. The EPA's efforts may involve reduction of power plant emissions that cross state lines, and clean vehicle and fuel standards.

The EPA's new initiative will "maximize flexibilities and minimize the burden on state, tribal and local governments."

In its announcement, the agency noted that it identified fewer areas that did not meet the 2008 standards than it identified as not meeting the 1997 ozone standards.

EPA selects substances for SDWA evaluation. In May, EPA published a list of 28 chemicals and two viruses that will be the focus of its unregulated contaminant monitoring program.

Chemicals and viruses on this list do not have health-based standards established under the Safe Drinking Water Act but they're suspected of being present in drinking water supplies.

The list's most common components fall into several groups, including hormone mimics, halogenated organics with a heavy representation of fluorinated compounds, and the metals vanadium, molybdenum, cobalt and strontium. Enteroviruses and noroviruses round out candidates on the new list.

The agency plans to spend more than \$20 million to support monitoring conducted by approximately 6,000 public drinking water systems. The monitoring will occur between 2013 and 2015.

Once the data is collected and analyzed, EPA will evaluate the results to determine the frequency and levels in drinking water of the listed contaminants. That evaluation will form the basis of any decision as to whether the agency should develop standards under the SDWA.

The agency currently has standards for 91 contaminants in drinking water. The 28 chemicals selected for this round of evaluation are part of the agency's contaminant candidate list. Some were selected based on current occurrence research and health-risk factors.

Every five years the EPA selects up to 30 unregulated contaminants to evaluate. The current list of 28 are the subject of this five-year cycle of scrutiny.

EPA's IRIS reviewed. The EPA conducts many of its health assessments using its Integrated Risk Information System. This database includes extensive information on more than 550 chemicals that occur in the environment.

The agency uses it to provide health profiles of chemicals to which humans are exposed in air, water and soil, and as a result of chemical disposal. IRIS data may support rulemaking.

In April of 2011, an expert panel of the National Academy of Sciences recommended some improvements in the development of IRIS assessments.

The EPA is now conducting a phased implementation of the NAS' recommendations that included releasing draft IRIS assessments for public comment and peer review.

The NAS panel is again working closely with the agency to evaluate changes that have been made, or are being planned in the near future by the EPA.

The expert panel will also review the current IRIS assessment methods used for weight of evidence analysis as it relates to using "scientific evidence for chemical hazard identification."

EPA partners with NASCAR. EPA entered into a promotional arrangement with the National Association for Stock Car Auto Racing to raise awareness of environmentally friendly products and solutions to address the country's environmental challenges.

The agreement focuses on several areas of partnership and promotion. One is to promote products that bear the EPA's Design for the Environment label, DfE. This effort identifies products that "perform well, are cost-effective and are safe for the environment," according to EPA.

The new cooperative program with NASCAR includes the use of DfE category products at NASCAR events and by NASCAR participants.

The E3 tuneup effort is another EPA activity that NASCAR may help promote. E3 stands for economy, energy and the environment.

It is an outreach program to support and encourage increased productivity, reduced use of energy and materials, and the lessening of environmental impacts.

Other opportunities for EPA and NASCAR cooperation include the use of more sustainable concessions materials and packaging at NASCAR events, use of safer chemical products, water conservation and recycling. All of these are seen as having positive economic and environmental impacts that will extend beyond the racetrack.

FEDFILE
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State wetlands expert Bersok suspended, reinstated; investigation now underway

Staff report

State environmental regulators have reinstated Connie Bersok, the state's top wetlands expert, after suspending her shortly after she refused to issue a permit for the controversial Highlands Ranch Mitigation Bank project.

Florida Department of Environmental Protection officials said Bersok's suspension was not related to the project. She has since been cleared following an investigation of the incident by the state's deputy chief inspector general.

Highlands Ranch is a wetlands mitigation band. Bersok said the owners want the Florida Department of Environmental Protection to award the project more wetland credits than are justified.

According to Bersok, DEP Deputy Secretary Jeff Littlejohn told her that instead of requiring detailed plans for the Highlands Ranch project before issuing the permit, he wanted her to set goals for the bank's progress.

He called it a "performance-based pilot," a concept that he said was approved by DEP Secretary Herschel Vinyard.

But Bersok wrote that such an approach violates a state law that requires "a reasonable assurance" that a mitigation plan will work before any permit is issued.

The DEP's handling of the incident is now under investigation.

A 2007 study done for DEP reported that fewer than half the mitigation banks reviewed have achieved their restoration goals.

But mitigation banking is still big business. Wetland credits in northeast Florida have sold for up to \$100,000 each.

Tallahassee contamination. Soil and groundwater contamination has been discovered at The Warehouse property on Gaines Street in Tallahassee.

Analytical testing at the site showed high levels of benzo(a)pyrene, benzo(a)pyrene equivalents and arsenic.

Past industrial uses of the property led to the present day contamination. The property was home to two fuel distributors that operated from at least 1930 until 1980 or later.

The Gaines Street area has experienced an increase in redevelopment interest from development companies since the city of Tallahassee's water and sewer upgrade work in 2010 and 2011 road work in the area.

The U.S. Environmental Protection Agency recently awarded the city a \$1-million brownfield grant for contamination assessment and cleanup.

The federal brownfields program works closely with other EPA programs, federal partners and state agencies to pinpoint environmental concerns and provide resources that can be put to use for projects such as the Gaines Street contamination cleanup.

The work is expected to be completed by the end of the summer.

Tropicana renewable energy. State regulators have approved a deal for Tropicana Manufacturing Co. to generate renewable energy.

The state Public Service Commission gave the go-ahead for interconnecting a 1.6-megawatt generating facility at Tropicana's Fort Pierce plant with Florida Power & Light Co.

It will burn landfill gas to power Tropicana's citrus processing plant.

The agreement will require Tropicana to pay the \$95,000 cost of modifying the utility's interconnection facilities to handle the new generating plant.

DeBary brownfields. City of DeBary officials want to spur growth in run-down areas of the city by tapping into available brownfield redevelopment resources.

Officials in the Volusia County city want to use the program to encourage the redevelopment of some former gas stations

and vacant industrial properties around the city.

DeBary leaders passed an ordinance earlier this year declaring the area around the rail station a transit-oriented development zone.

The goal is to create a small community of retail, government, commercial and residential offerings close to commuter rail lines.

More than 3,400 acres of brownfield sites have been cleaned up across the state, amounting to \$388 million in new capital investment, according to state officials.

Another 221,000 acres have been designated as areas that will be cleaned up as soon as developers become interested.

In Volusia County, the handful of existing brownfield sites are in east Volusia.

Brevard brownfields. In related news, cities throughout Brevard County have pushed forward with designating brownfields to attract new and expanding businesses with tax breaks and other incentives.

Rockledge has the newest brownfield district in Brevard. In May, the city finalized the process to designate areas along the Florida Avenue, Barton Boulevard, U.S. 1 and Barnes Boulevard corridors, encompassing 873 acres.

Rockledge was the first community in Brevard County to take advantage of the state's brownfield program.

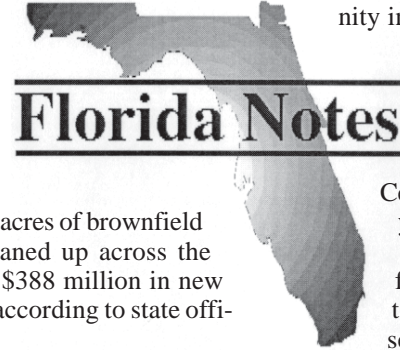
In December 2000, it designated a 10-acre site at Village Green Shopping Center. But the site still has not yet been cleaned up.


Titusville had no brownfield areas until last year when the city council approved seven within the city limits.

Melbourne created its Melbourne Economic Enhancement District four years ago.

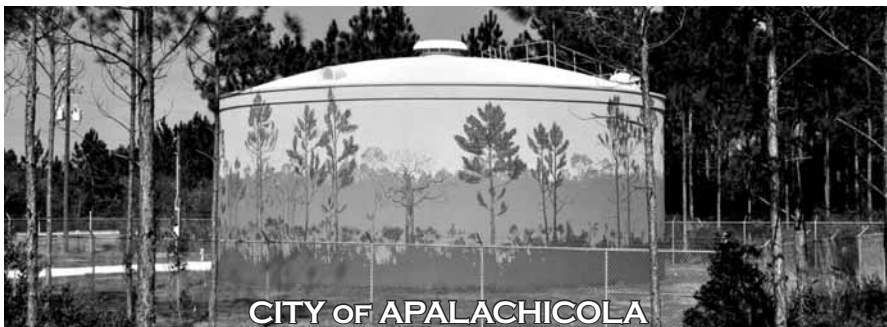
The 5,940-acre district cuts roughly diagonally across the city and includes Melbourne International Airport and all three of the city's community redevelopment areas.

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State moves ahead on new Everglades restoration permit

Staff report

South Florida Water Management District Executive Director Melissa Meeker told the district's governing board in June that an agreement between state and federal officials on a new Everglades restoration permit has been reached.

Negotiations began in October when Gov. Rick Scott met with federal officials seeking a revised restoration plan to reduce Everglades phosphorous pollution.

The agreement calls for new construction projects and revised pollution control measures.

The plan provides \$880 million for new projects through 2025. Those are in addition to projects now underway.

Meeker said the water management district now has \$220 million in the bank to fund these new projects.

In 2008, U.S. District Judge Alan Gold ordered state and federal agencies to stop issuing permits for stormwater treatment areas until the U.S. Environmental Protection Agency had reviewed state water quality standards in the Everglades.

By 2010, the EPA determined that clean water standards for phosphorous were not being met in all parts of the Everglades and

further reductions of phosphorous pollution were needed south of Lake Okeechobee.

Meeker said a technical plan has been hammered out that includes water quality-based pollution limits, new filter marshes and holding ponds to improve water treatment, plus an implementation schedule through 2025.

Additional funding to cover the \$880 million price tag will need legislative approval.

Port of Miami dredging. The Miami-Dade County Commission approved an agreement with environmental activists allowing the \$220 million dredging project for the Port of Miami to finally move forward.

The project will deepen the channel to 52 feet.

The dredging is a joint county/state project and has been hailed as an economic benefit. It will make the Port of Miami attractive to growing shipping activity in anticipation of the opening of the expanded Panama Canal.

The wider canal will permit larger ships to pass through saving time on trips from Asia and other parts of the world.

Tropical Audubon Society, Biscayne Bay Waterkeeper and a county resident, Dan Kipnis, filed a petition last December with the Florida Department of Environmental Protection opposing issuance of the permit for the dredging.

The petition said the 52-foot dredging project would damage the bay and kill protected wildlife.

In the agreement, the county will direct \$1.3 million to its Biscayne Bay Environmental Enhancement Trust Fund and make additional donations to both Tropical Audubon and Biscayne Bay Waterkeeper for projects designed to protect and restore Biscayne Bay.

Projects that will get county money include mangrove and wetland restoration at Oleta River State Park, North Miami; restoration of coastal dunes and plants along the north point of Virginia Key; monitoring of relocated coral colonies on the natural reef system; monitoring of small fish populations in the seagrass beds; and improvement of shoal marker and signage systems on the north part of the bay, including the Bill Sadowski Critical Wildlife Area.

North Port alternative water. A \$14-million upgrade to the city of North Port's Myakkahatchee Creek Water Treatment Plant will improve water quality and enable North Port to produce its own water in dry months.

The city faced critical water problems when there were low water levels in both the Peace River and Myakkahatchee Creek during drier months.

Utility Director Cindi Mick said the project will be a Christmas present to North Port residents when the upgrade goes on line this December.

The upgrade includes six new groundwater wells for a reverse osmosis water treatment facility at the plant at North Port Boulevard. In addition, the Cocoplum Waterway Intake Structure, now under construction, will provide a backup surface water source.

Until now, North Port has relied on seasonal availability of water from the creek and river and if not there, had to purchase source water from the Peace River/Manasota Regional Water Supply Authority. The plant upgrade will reduce that need.

PBC seeks control of utility. Palm Beach County has asked a circuit judge to appoint a receiver to take control of the financially strapped Glades Utility Authority.

In a suit filed in mid-May, the county claims it is on the hook for nearly \$10.5 million of the authority's debt if action isn't taken soon to stop the financial bleeding.

The county asked the judge to force the utility to adopt a rate system that overcomes revenue shortfalls and a budget that sets aside money for emergency reserves and maintenance.

Glades Utility provides water and sewer service to the cities of Pahokee, Belle Glade and South Bay. The utility has been operating without an approved budget since Oct. 1 when the board of directors turned down a rate increase that would have closed a \$2 million shortfall.

Pahokee Mayor J.P. Sasser said the three cities have been unfairly blamed for the failing authority noting that the county is responsible for running the venture.

Bonita Springs Utilities buys Estero plant. Bonita Springs Utilities has purchased a wastewater treatment system that serves the Fountain Lakes and Marsh Landing communities near Estero.

The \$2.5-million purchase was completed in late May.

Most of the 1,268 homes now served by the plant are located west of U.S. 41 in Estero. Each will pay a service charge of \$3,442 per single family home or \$2,754 for each multi-family residence to cover the cost of the system's purchase.

The service charge will also cover the cost of needed repairs and the connection to the Bonita system.

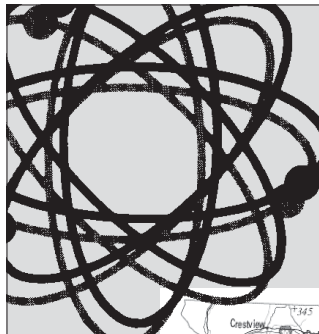
Customers will have the option of financing their share of the cost with a monthly charge of \$22.18 for a single family home or \$17.74 for a multi-family unit. The payments would be over a 25-year period.

North Fort Myers utility shut down. An aging drinking water plant in North Fort Myers serving 200 residents of the Yacht Club Colony has been taken over by Lee County Utilities after health officials deemed the water undrinkable.

Lee County officials have instructed residents not to drink the water until the utility can perform tests to determine the cause of contamination.

The county utility has undertaken a

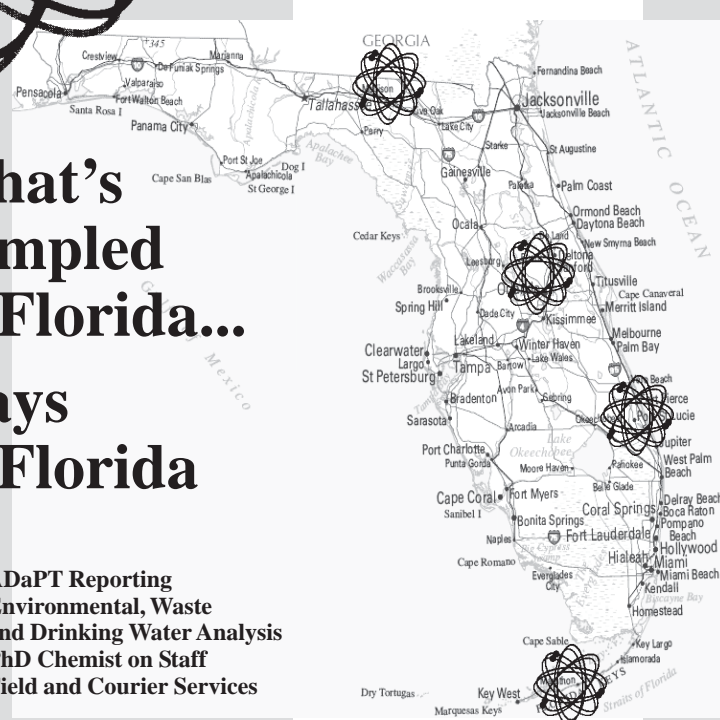




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WATCH
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WATCH

From Page 4

temporary fix of the system that will cost \$100,000 in materials.

Bayshore Utility Company, owner of the plant, has been under the jurisdiction of the Lee County Health Department since 2010. The company was required to fix several problems in the aging water system that dates back to the 1950s.

In April, the health department went to court asking that water plant property be declared abandoned. On Apr. 25, it was assigned to Lee County Utilities by the court.

Jacksonville utility pipeline. JEA has embarked on a construction project to place 6,700 feet of 38-inch-wide pipeline in a tunnel 100 feet below the surface of the St. Johns River.

The pipeline will be capable of carrying 20 million gallons a day of drinking water and will be the backbone of an 8.3-mile network connecting JEA's supply lines north and south of the river.

The importance of the pipeline is stressed by the plentiful supply of water in wells north of the river but a differing situation with wells on the south side.

Canaveral port deepening. Canaveral Port Authority Commissioners have taken the first steps in the planned widening and deepening of channels at the port.

The initial work will involve construction engineering and design.

Santa Fe algae remains a concern

Staff report

Though rains from recent storms have raised the water level of the Upper Santa Fe River substantially, county officials and others still have concerns about algae blooms discovered there in recent weeks.

Anthony Dennis, environmental health director for Alachua County, said algae found in the Santa Fe was identified as the cyanobacteria *Anabaena circinalis*.

Dennis said *Anabaena* is not known to produce toxins in Florida.

The state Department of Environmental Protection conducted tests for the cyanobacteria, but for that initial testing, no *Anabaena* was found.

"It's my understanding that these algae can appear and then disappear over short periods of time," said Dennis.

Merrilee Malwitz-Jipson, president of Our Santa Fe River, contacted DEP in early June saying that the green slime-looking algae was back prompting the agency to return to do more testing.

An \$890,000 contract went to Anamar Environmental Consulting of Gainesville for environmental soil testing to assure the project meets U.S. Environmental Protection Agency and U.S. Army Corps of Engineers standards.

A second contract of \$559,443 went to CH2M Hill Engineers Inc. for preliminary engineering, surveying and geotechnical work.

Islamorada sewer grant. A \$20 million state grant is on its way to the village of Islamorada to help cover some of the costs for a planned sewer system.

The grant was tucked into the state's \$70 billion budget approved in April by Gov. Rick Scott. The sewer project cost has been estimated at \$110 million.

Islamorada does face some deadlines. They are under a Sept. 1 deadline to have a construction contract in place or they will lose the grant. The village already has a sewer contractor, Veolia Water North America, lined up.

An agreement with the Key Largo Wastewater Treatment District is in the works that will pave the way for the village to pipe its sewage to the district's plant at mile marker 100.5.

Finalization of that agreement will clear the way for the village to secure access to \$26 million in low interest loans from the Florida State Revolving Fund.

Islamorada is facing a state mandate to resolve its sewer and wastewater problems by 2015. News of the grant now puts the

While Malwitz-Jipson acknowledged that rains over the last few weeks have restored the beauty of the river, the rains have washed the surface algae down stream.

"You can't see the algae on the surface, but it is below the surface," she said. "When the stagnation occurs again, we will see the algae on the surface."

Dennis said people should use common sense and avoid fishing, swimming or drinking the water in areas where the blooms are found.

Chris Bird, director of the county's Environmental Protection Department, said water covered with the bloom "stinks, is not attractive and is not something people want to be around."

Malwitz-Jipson said that while DEP and other health officials claim the Florida version of *Anabaena* contains no toxins, she said other environmental groups including Earthjustice claim otherwise.

The algae was found along the Santa Fe between the U.S. 27 bridge and Poe Springs.

prospect of meeting those deadlines in clearer view.

Elkenberg to head Everglades Foundation. Eric Elkenberg, chief of staff for former Gov. Charlie Crist, has been named CEO of the Everglades Foundation.

Elkenberg has long ties to the Republican Party having once served as chief of staff to former Republican Congressman E. Clay Shaw of Fort Lauderdale.

He also worked with former Gov. Charlie Crist when he helped engineer an agreement with U.S. Sugar in 2008 on a project that was strongly supported by the Everglades Foundation.

Elkenberg was previously a lobbyist in Tallahassee co-chairing the lobbying team at the Holland & Knight law firm with former Gov. Bob Martinez.

Fort Pierce lauded for water conservation. The city of Fort Pierce was one of a dozen cities across the country that was recognized for work in water conservation in the 2012 National Mayor's Challenge for Water Conservation.

The award was presented by the Wyland Foundation and Toyota.

The Wyland Foundation created the program with Toyota in honor of the 40th anniversary of the Clean Water Act.

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Corp releases draft impact statement for future phosphate mining activities

By ROY LAUGHLIN

The Jacksonville district office of the U.S. Army Corps of Engineers released a draft Areawide Environmental Impact Statement assessing the expected impacts of phosphate mining in Florida over the next 30 - 50 years.

The AEIS was prepared in response to applications for permits affecting four mines—three owned by Mosaic Fertilizer LLC and one owned by CF Industries Inc. The four mines in total will encompass just less than 52,000 acres of Florida's 1.32 million-acre phosphate district.

One of Mosaic's mines alone could be capable of producing nearly six million tons of phosphate rock per year. The mining efforts will occur in four drainage basins including those of the Manatee and Peace rivers.

The draft report provides a detailed discussion of the corps' primary jurisdictional authority—the discharge of dredged or fill material into waters of the U.S., including jurisdictional wetlands.

The area under review for permits includes more than 12,000 acres of wetlands and open water; and 456,000 linear feet, or 88 miles, of streams that will be affected by phosphate rock mining.

The report focuses on four primary issues: ecological resources including loss of wetlands and mitigation prospects; the effects of mining on groundwater quality and levels; the effects of mining on surface water quality and quantity, including Charlotte Harbor estuary; and a cost-benefit analysis of phosphate mining to the region's economy.

In response to the permit applications, the National Environmental Policy Act requires federal agencies to prepare environmental impact statements. In this report, the corps included eight alternatives, including no mining, to help guide a response to the permit application.

According to John Fellows, AEIS project manager with the corps, the release of the draft AEIS is only the first of several iterative steps leading to a permit decision.

"For the draft Areawide Environmental Impact Statement, we identified alternatives and described their potential effects," he said. "Moving forward for the final AEIS, we will take a closer look at those alternatives, compare them to the proposed actions, and draw conclusions based on those comparisons."

Historical data presented in this draft AEIS show that phosphate mining has had

a substantial impact, some positive and some negative, in the four selected focus categories.

Modeling and predictions from data analysis suggest that if the four permits lead to additional mining, temporary declines of groundwater levels in the Upper Floridan Aquifer will occur. However, the report concluded that granting the four permits would have only insignificant or temporary influences on the Upper Floridan.

Effects on the surface aquifers will be the most significant, but the report's scenarios were extremely general because site-specific criteria would be required to develop a specific estimate of risk or severity. Historical data in the report consistently showed substantial changes in surface aquifer water quality around phosphate mining sites.

Surface waters are the corps' permitting focus. The report was vague in its discussion of surface water quality of the rivers and streams. Most have nutrient concentrations already substantially above the newly adopted numerical nutrient water quality standards.

Precisely how phosphate mining fits into the larger picture of changing land use patterns that have caused excess nutrients was not discussed in depth, and no conclusions about phosphate mining's contribution to the overall corrective efforts was included in the draft AEIS.

There will be a substantial loss of wetlands in any scenario that the report considered to approve permits for the four sites. Mitigation was accepted as an effective compensatory strategy.

According to the report, mitigation following mining would lead to no net loss of wetlands, or perhaps even more wetlands.

"Over the next 30 years, I think a person can anticipate at least a substantial offset of the impacts from the proposed mines, if not a total offset or even a net environmental benefit, based on the level of wetland mitigation, compensation of impacts to threatened and endangered species, and other environmental avoidance, minimization and mitigation that would be required under any permits issued," Fellows noted in response to an e-mail question. "Over the next 50 years, which is the temporal scope of the AEIS, I think a total offset or net environmental benefit can be anticipated."

Some reduction of surface water flows into watershed rivers is also likely because ditch and berm techniques used around the mines will at least temporarily impound water on the phosphate mining sites.

The report itself does not make any recommendations. The draft AEIS is intended to form a framework for public comment

and for the actual AEIS to follow. That AEIS will inform subsequent decision making processes prior to the corps making permit decisions.

According to Fellows, after public input, a final AEIS will be prepared, followed by a record of decision that will explain how a decision will be reached. The decision will determine whether permits will be issued for the original request or for alternatives, or will be denied.

The final AEIS is expected by December 2012 with the ROD to follow in early 2013.

The corps is not the only government agency with regulatory or approval oversight. In early March, the Manatee County Commission voted to approve phosphate mining in an additional 646 acres at Mosaic's 7,300-acre Wingate Creek mine near Duette.

The *Herald Tribune* included several comments from commissioners explaining that the fear of lawsuits if the commission denied the expansion request was the primary reason for a vote to approve.

According to those reports, Mosaic threatened to sue for more than \$600 million, the difference between the value of unmined land and the value of the phosphate rock mining would yield.

During Manatee County's permit consideration, environmental groups asked County Commissioners to delay a decision until an plan for the entire phosphate district had been developed. The current plan deals extensively with mining in Florida's entire phosphate district.

The Florida Department of Environmental Protection and the Southwest Florida Water Management District also have regulatory oversight for monitoring, data reporting and other aspects of the phosphate mining. DEP staff also had a role in preparing the draft AEIS.

Mosaic has taken a carrot rather than a stick approach with these agencies. In February 2012, Mosaic purchased 4,400 acres that it will donate as a new state park.

The fertilizer company also agreed to establish a larger buffer, 400 more acres, between its mines and the upper Peace River channel. This will preserve wetlands along the river. That is expected to ensure water quality and quantity in Sarasota and Charlotte counties.

Phosphate mining has been ongoing in Florida for more than 100 years. It is likely to continue for at least another half a century. The decisions on these permits will have substantial influence on the southern quarter, the remaining unmined areas of the Florida phosphate district that currently could still support phosphate mining. History will be made in the next year, regardless of these permitting decisions.

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Pensacola's "Old Stinky" demolition a lesson in C&D recovery

By JIM ROBERTS

Emerald Coast Utilities Authority's out-dated Main Street Wastewater Treatment Plant, originally designed and constructed in 1937, continues its transformation from a community eyesore into an environmental lesson on construction and demolition material recovery.

The 19-acre downtown site underwent numerous expansions in the 1970s and mid-1990s before it was officially taken off-line in late April, 2011.

Now, one year after ceasing operations, "Old Stinky," the name affectionately given to the facility by local media representatives, has emerged as an environmental success story.

Sustainable reuse of the MSWWTP property includes a defined effort to reduce the environmental impact by reusing and recycling materials recovered during the demolition process.

Cross Environmental Services was chosen to dismantle the former MSWWTP fa-

STINKY
Continued on Page 7

SFWMD study indicates water consumption slowing in South Florida

By DAN MILLOTT

The cheapest gallon of water is the gallon you don't use. That, in simple terms, is the upside of a recent study by the South Florida Water Management District that indicates that water usage has declined by 10-15 percent over the last five years.

Mark Eisner, SFWMD's administrator of water supply development, said the good news on use decline has an added benefit—water utilities have been able to shelve plans for expensive water supply projects because the future demand just isn't there.

Bertha Goldenberg, assistant director of the water-sewer department in Miami-Dade County, said the county will not have to spend \$300 million for a proposed water reclamation project near Zoo Miami.

She said the county has a reverse osmosis plant in Hialeah due to be on-line in late 2012 and a plant at South Miami Heights now being designed that will satisfy the county's water needs through 2030.

The cost of the proposed Miami Zoo project was exceedingly high because wastewater would have been treated at a South Miami-Dade wastewater plant and piped to the zoo area nine miles away where it would be treated again and added to groundwater supplies. The county has already spent about \$100 million on project design work.

Eisner said the decline in water demand can be attributed to aggressive conservation efforts in the four-county area covered by the study. He said the economic downturn has also contributed to a decline in water use in Palm Beach, Broward, Miami-Dade and Monroe counties.

Economic conditions throughout Florida have caused the University of Florida Bureau of Economic Research to rethink future population projections.

Goldenberg said that water use decline really started in 2007 when the area was in a period of water crisis due to below normal rainfall and the absence of any conservation program. At that point, Miami-Dade enacted watering restrictions for water users—two days per week.

At first, it was voluntary, but soon the restrictions were enacted as law and it's now permanent. Broward County has also placed a two-day-a-week limit on lawn watering. In Palm Beach County, watering is permitted three days a week.

Eisner noted that Miami-Dade's efforts have shown positive results by reducing water consumption.

"They have done that over the last five years and have been able to delete some water supply projects that had planned," he said. "There is also an effort among utility partners that involves the retrofitting of homes with more efficient toilets or shower heads."

Retrofitting can be vital in conserving water, Eisner said. "By replacing toilets in homes built before the early 90s, there is saving every time you flush the toilet. Simple things like changing the aerator on your bathroom faucet can save water."

Broward County has a multi-jurisdictional water partnership involving 20 utili-

ties. It provides consumers with information about its retrofitting programs as well as water conservation tips.

Alan Garcia, director of Broward's Water and Wastewater Services, said the county has delayed a \$46 million project to tap into the Floridan Aquifer until 2023.

Utilities in Broward and Palm Beach are also considering construction of a massive reservoir in Palm Beach County to meet future water needs.

The conversion of brackish water to fresh has become common in the South Florida WMD, Eisner said. There are 40 desalination facilities now operating in the district. Brackish water from the Floridan Aquifer is now producing 240 million gallons a day.

The Florida Keys Aqueduct Authority opened an RO facility in 2009. It can produce six million gallons a day and allows the Keys to meet their drinking water needs without exceeding limits that the SFWMD has imposed on withdrawals from the Biscayne Aquifer.

Escalating water utility rate structures are also helpful in reducing water consumption. Eisner said most utilities charge a lower rate for the first 3,000 - 5,000 gallons used, but the rate escalates per 1,000 gallons when consumption surpasses that.

Goldenberg said that, beginning in

January, 2009, Miami-Dade has required the use of high efficiency toilets in all new construction.

The SFWMD is working to encourage contractors and homeowners to use "Water Sense" fixtures. Water Sense is an EPA program that encourages the production and use of plumbing fixtures that are 15-25 percent more efficient than those required by most building codes.

In recent years, the use of reclaimed water for irrigation of lawns and golf courses has helped in reducing potable water consumption. "Right now we're using 230

million gallons per day of reuse water and that has doubled in the last 15 years," Eisner said.

During the overheated housing boom, water managers had calculated that South Florida's daily water consumption would reach 2.3 billion gallons a day by 2025. That estimate has now been cut by 400 million gallons a day. It covers all uses from the farm to the home faucet.

South Florida still consumes a great deal of water—an estimated 787 million gallons per day excluding farm use—in the four-county region.

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GP mill on schedule to finish effluent pipeline by October deadline

By ROY LAUGHLIN

Georgia-Pacific's Palatka paper mill is on schedule to complete its controversial wastewater pipeline and diffuser to the main body of the St. Johns River by the Oct. 15 deadline.

The massive construction project includes four miles of 36-inch pipeline that will terminate in the St. Johns River with a 1000-foot-plus diffuser.

It can carry as much as 25 million gallons a day of paper mill effluent to the St. Johns. The project, including pipeline construction, pump stations, diffuser installation and other construction components, is expected to cost about \$30 million.

Georgia-Pacific built the first paper mill, one that made brown paper bags, on the site in 1947. Today, the plant makes 500,000 tons of primarily tissue paper products destined for domestic use.

Since 1998, the mill has invested more than \$200 million to reduce its water usage and construct suitable treatment facilities for its wastewater.

The plant's effluent goes first into a settling pond on the property and is then released to Rice Creek, a St. Johns River

tributary.

In spite of efforts to treat wastewater to meet increasingly stricter standards, mill effluent treatment consistently failed to meet standards for color, salt, and Daphnia toxicity.

Company officials and their consultants said that at times, the mill's effluent flow volume overwhelmed the relatively small flow volume of Rice Creek, and that was the primary reason for failure to meet effluent standards at the outfall in Rice Creek.

After substantial negotiations, DEP gave GP a choice: either treat the effluent so that it meets standards or construct a pipeline to the main body of the Upper St. Johns River to release effluent where sufficient dilution capacity exists so that water quality standards can be met.

GP eventually abandoned its efforts to meet effluent criteria through treatment and agreed to build the pipeline currently being constructed.

Under a 2002 agreement with DEP, the company has until Oct. 15, 2012, to meet effluent standards.

When construction is complete, the pipeline will be tested with air first and then with water.

"We are on schedule and plan to begin

testing in August," said Trish Bowles, public affairs manager with Palatka Operations at GP. The project appears to be comfortably on schedule for completion by the October deadline.

The pipeline option has consistently generated opposition among environmentalists, fishermen and other St. Johns River enthusiasts unwilling to accept "dilution as the solution to pollution."

The permitted effluent volumes and total maximum daily loads place the mill near the top of the St. Johns River Water Management District's list for several regulated wastewater treatment constituents.

It is similar in some respects to those for the city of Jacksonville's larger wastewater treatment plants. The 1000-foot-long diffuser at the pipeline's terminal end has been installed to reduce detrimental point loading that often accompanies high volume point sources.

If technical prowess and mother nature are in harmony, the diffused release of the mill's wastewater effluent will—after more than a decade of significant effort and financial expense—reduce the environmental footprint of the GP paper mill and the 1050 jobs it directly provides in Northeast Florida.

Martin County stormwater toolkit valuable planning instrument

By BLANCHE HARDY, PG

With the assistance of a grant from the South Florida Water Management District, Martin County's Community Development Department developed a "Stormwater Design Toolkit" to assist with stormwater design and retrofit for development and redevelopment within the county's community redevelopment areas.

The toolkit has been well received within the development industry.

"It provides strategies that can be used as puzzle pieces assisting the property owner in evaluating the capacity of a piece of land and the value of each tool's potential," said Bonnie C. Landry, AICP, the county's community development specialist.

The department focused on creating the toolkit with their seven CRAs in mind. They are the oldest areas in the county and many of the communities within them were developed prior to the implementation of more stringent modern stormwater management standards.

The CRAs include areas that need revitalization as well as preservation of once

viable neighborhoods and thriving commercial activity centers.

The toolkit is intended to inspire redevelopment in the CRAs by allowing property owners and developers to employ a combination of strategies to retrofit stormwater management systems and upgrade water quality and flood control.

Landry said the toolkit is educational and was written in plain language so that it will inspire people of all backgrounds. The toolkit allows development partners to save time by assisting in the decision-making process as each tool is keyed with water quality, cost and maintenance details.

The toolkit's strategies can be used individually or together to create treatment trains.

"The private sector is very interested in context-sensitive designs that add value to their redevelopment investment," she said. "Many of the tools in the kit not only increase water quality and reduce land consumption, they are aesthetically pleasing."

The county and its partners are already employing the strategies to design and execute projects. The Community Development Department is in the planning stage of a proposed retrofit project on Mapp Road within the Palm City CRA in Old Palm City under which a comprehensive stormwater system utilizing a water treatment train will be designed and constructed in conjunction with on-street parking, wide sidewalks, new roadways and lighting.


The county, along with Habitat for Humanity, the Boys and Girls Club, have also partnered to develop six vacant parcels at Carter Park within the Indiantown CRA. The result will be a new neighborhood that will provide 40 affordable housing lots, a 20,000-square-foot urban Boys and Girls Club complex, and a new public park with a lake. The lake will treat 130 acres of stormwater runoff.

The county intends to use the toolkit for future projects.

The toolkit provides additional sustainable elements that can be "modularized" to provide alternative approaches, urban strategies and innovative methodologies toward treating and managing stormwater.

In addition to becoming an integral part of Martin County's Community Redevelopment Agency projects, the county's engineering department and private development community may apply the toolkit to projects outside the CRAs.

The engineering department will also monitor the effectiveness of the tools applied from the kit when they are implemented in CRA projects and may consider updating regulations to encourage their use.




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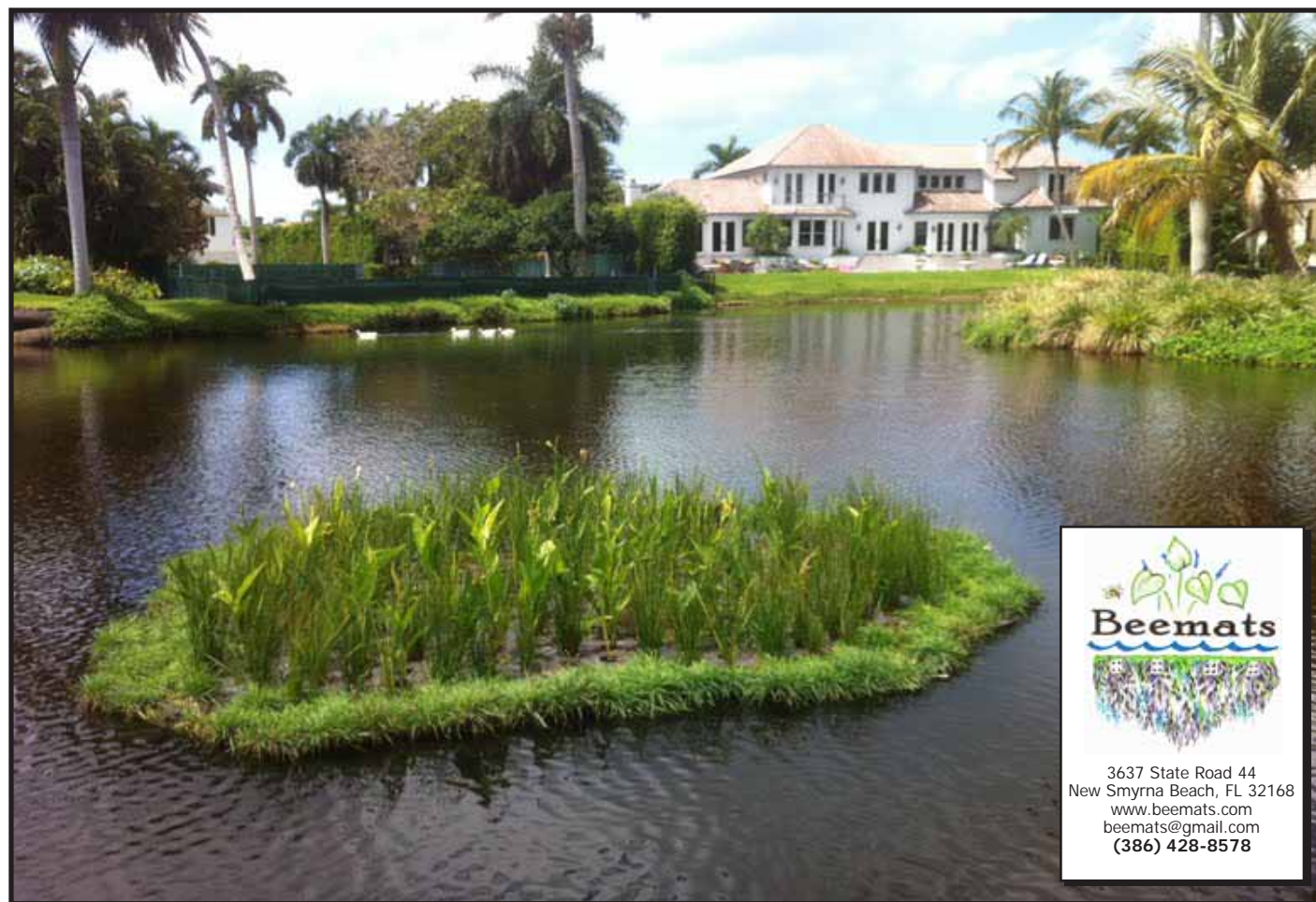
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Officials in Broward County to get the lead out of busy target range

By MELORA GRATIAN

After years of delays, officials in Broward County are expected to pull the trigger on a \$2-million project aimed at removing lead shot and clay target fragments from the county-owned Markham Park Target Range.

Negotiations with Colorado-based MT2 are expected to begin this month, which would mean that work can begin sometime in the fall, according to Dan West, director of the county's Parks and Recreation Division.

Fairly routine in terms of lead recovery projects, the scope of work at Markham Park includes a skeet and trap area that has not been mined for lead since it opened in 1984.

The 12.6-acre site in Sunrise, which averaged 1.5 million clay targets per year over the last decade, includes seven acres containing woods, 4.6 acres with a shallow pond and an acre of open land.

In the wooded and open areas, lead shot from at least the top six inches of soil will be removed and transported to a licensed recycler, according to project documents.

In some cases, the depth may be greater if factors such as equipment and personnel have worked the shot farther into the soil. This is expected to achieve a lead removal rate of 90-95 percent.

Clay targets and fragments, organic matter and shotgun shells will be removed and disposed of off-site. Plus, the wooded and open areas will be cleared and grubbed of debris such as organic material roots and stumps to a depth of at least one foot below the ground surface.

Then fill material containing no more than five percent organic matter will be used to establish elevations. Finally, hydro seeding will be used to install Bahia

grass over all the ground surface areas.

The pond bed sediment will be excavated to whatever depth is necessary to achieve a 90-95 percent efficiency removal rate for lead and clay target materials.

For filling the lower depths of the pond, the county will supply a free stockpiled fill mixture of sand, lime rock and silt. The contractor will pay for hauling the county's material more than 12 miles, according to the project criteria documents.

Reasons for the delays in cleaning up the popular range include changing guidelines and budgetary concerns.

The county was able to raise funds for the project by instituting a user fee in response to state requirements associated with best management practices, West said.

"The accumulation of user fees over the past few years provided partial funding for the project, with the balance being leveraged against future collection from the lead remediation fee charged to shooters," said West.

While any cleanup of the range is viewed as positive for the environment due to its proximity to the Everglades Conservation Area, there are some concerns that the scope is not comprehensive enough.

A pistol range and retention pond on the western side of the range property contained elevated levels of lead and are close to the canal, which borders the Everglades area, said Christopher Teaf, PhD, associate director for the Center for Biomedical and Toxicological Research at Florida State University.

Teaf said he reviewed data about two years ago that included the previous 15 years and that range soil and pond sediment levels were quite high for lead and should be included in any remediation effort.

"The canal has lead in it at numbers that

would indicate an off-site source," Teaf said. "However, I expect them to focus on-site, which in all likelihood would resolve the problem. The western area is the greatest ecological concern with the Interstate on the other sides."

He added that a net downward trend in these levels during the past few years is unlikely.

West said this project did not include the areas in western portion of the property because they were beyond the limits of the shot fall zone.

"The rifle and pistol ranges are not included in the scope of this project, but have

been previously maintained and will continue to be routinely maintained in future years," he said.

The proposed project, West said, will improve the design of the area and will help with future maintenance.

"Markham Target Range is one of the most popular ranges in the South Florida area. The improvements will certainly provide the county the ability to more efficiently and safely cleanup spent lead, and just as importantly help us develop an environmental stewardship plan for the entire range utilizing best management practices in the industry," he said.



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DEP nixes Tampa Bay Water plan for reservoir expansion

By PRAKASH GANDHI

State environmental officials have rejected a plan by Tampa Bay Water to expand its trouble-torn C.W. Bill Young Reservoir in Hillsborough County.

TBW had applied to increase the capacity of the 15.5-billion-gallon reservoir by three billion gallons.

The utility decided not to pursue the expansion after the Florida Department of Environmental Protection expressed concerns about the potential for sinkhole development arising from the additional load posed by a reservoir facility with increased capacity.

State officials feared the higher walls and extra water required by the expansion would carry too much weight. They are especially concerned during winter freezes when farmers pump more groundwater to protect their crops and the aquifer drops dramatically.

DEP spokeswoman Dee Ann Miller said the department has told Tampa Bay Water that the utility's application does not provide a "reasonable assurance" for the expansion. She said the agency has been working cooperatively with Tampa Bay Water in processing the application.

"Tampa Bay Water has decided they are not going to pursue expansion of the reservoir at this time and will move forward with fixing the reservoir. A long-term fix is the priority," Miller said.

The reservoir stores water from the Alafia and Hillsborough rivers and the Tampa Bypass Canal. It went on line in 2005. During its first drawdown in 2006, the soil cement erosion barrier started cracking.

Some cracks were up to 400 feet long and up to 15.5 inches deep. Patches on the cracks didn't take.

Tampa Bay Water, which has spent millions on repairs, is looking further into the cause of the cracks. It estimates a permanent fix will cost \$121 million.

Michelle Biddle Rapp, a spokeswoman for Tampa Bay Water, said that DEP agrees that seven years of operating experience

proves the reservoir works and the site is safe. "Permitting the expansion would take too much time and be too costly," she said. "We need to move forward with fixing the reservoir."

The utility believes there are several advantages in following DEP's direction.

"We get a timely permit, we save money that would have been spent proving the expansion would work, and the region get its water savings account back in service quickly," she said.

The utility's priority is a fully functional reservoir, so it is following DEP's direction to permit only the long-term fix.



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Infrastructure asset inspection an optimal tool for maintenance, capital improvement

By MICHAEL GARCIA, PSM, AND
CHANDRA GREINER, CPM

Infrastructure asset inspection is a tool that identifies deficiencies, creates backlog, establishes proactive maintenance and monitors life cycles. Asset inspection can also assist agencies in identifying projects for their capital improvement programs.

What if methods were married to create an optimal maintenance program that addressed both? That was the goal for Seminole County Public Works' Roads-Stormwater and Engineering divisions.

The process of developing an optimal asset inspection program was challenging. But for those now assigned responsibility for maintaining the complete life cycle of infrastructure assets, this effort allows for a successful, open and sustainable methodology to manage assets in both the short and long term.

Asset inspections are part of any overall systematic approach to asset maintenance. The four basic phases of the ideal management of maintenance includes planning, organizing, directing and controlling. Within each phase, there are several tasks that combine to establish a continuous information flow for process improvement.

Seminole County is the state's third smallest county based on physical area and the 13th most populated in Florida based on density. The Central Florida county includes seven cities and an unincorporated population of 207,308 with a total population of 422,718.

Seminole maintains 856 miles of roadway system, 14,876 culverts, 796 miles of sidewalk, 17,964 storm structures, approximately 110 miles of canals and 440 retention ponds. With a combination of increasing population density and aging infrastructure, the county must optimize resources to properly maintain its assets.

To do this, the county implemented an asset management process with detailed inspections, GIS linkage, and random inspection selection and work management.

In 2001, the Seminole County Public Works' Roads-Stormwater Division undertook an efficiency study conducted over a 12-month period during which operations were evaluated based on the ideal phases for management of maintenance.

The purpose was not to audit the agency, but to identify opportunities. Using each phase as a guideline, the study established 31 findings and 28 recommendations for improvement.

The first step was to develop a complete infrastructure feature inventory. County staff already had many features identified, but the continuous fast growth of infrastructure had left gaps of information. To be cost efficient in data collection, public works GIS staff utilized multiple methods to gather information about the missing assets.

Summer interns were sent into the field to locate points and photograph ponds, inlets and structures. Right-of-way permitting information was used to identify new pipes, inlets and storm drains. Pavement management imagery data was used to identify sidewalk, handrail and guardrail features and a group of internal staff worked to cleanup the data and generate map layers.

The next step was establishing a condition assessment process with criteria for each asset type being inspected. The Governmental Accounting Services Board in one of their mandates required local government agencies to inventory, inspect and report the value of their capital assets. The reporting could be achieved using one of two methods: the modified approach or depreciation.

The county, having implemented the MMS and having the desire to account for condition, chose to use the modified approach. This type of reporting requires that asset inventories be up-to-date and condition assessments documented at specific intervals. In addition, the most recent inspections must indicate acceptable conditions as established by the government.

Utilizing a combination of consultant support and applying existing guidelines already established by the Florida Department of Transportation, National Pollutant

Discharge Elimination System and Americans with Disabilities Act, criteria were developed for inspecting each asset type for the county.

Roads-Stormwater Division staff were divided into five distinct districts, geographical zones defined by County Commission district boundaries. For the purpose of inspections, GIS staff divided each district into 10 zones with inspections conducted January through October.

Using the last digit of the asset ID, an inspection year was designated and combined with a designated inspection month. Inspection reports were generated monthly, accompanied by a map and inspection criteria.

Criteria used for inspections provided specific guidelines for evaluating each asset type that is both reproducible and sustainable. Field staff inspected each asset, rated the condition using the provided report and noted any deficiencies.

Conditions were recorded in the MMS using an interface that was also used to provide overall statistical information on the different asset types. For those assets requiring follow-up, work orders were generated in the MMS and prioritized based on the rating.

Asset inspections were introduced to field staff in stages. Initially, the first two asset types inspected were pipe and structures. Later, sidewalk, handrail, guardrail, bridge and pond inspections were added.

A majority of the asset work orders were based on sidewalk repair. Unit costs were increasing as identified in the county MMS. With the increased demand for concrete and the sporadic assets identified for concrete repair, division management implemented a two-part approach.

The first step was establishing a task force to address repairs. The second step included delivering their own concrete to minimize costs and increase flexibility. High priority work was quickly addressed to correct hazardous conditions and low priority work was grouped together based on location to increase efficiency.

The information obtained through inspections provided significant value throughout the organization. As residents called to report concerns to customer service, scheduled repairs were queried. If the asset being reported was part of the inspection process, a scheduled work order would

provide customer service with a status that was then communicated to the resident.

GIS maps provided visual analysis of asset failure, quickly identifying trends in neighborhoods, subdivisions and other geographical groupings.

The inspections empowered the division by providing workload projections and establishing priorities.

Since developing the asset inspection program in 2005, Seminole County has completed one inspection cycle proactively inspecting over 60 percent of their assets and generating over 2,200 work orders. They have established accountability to their residents and board while creating efficiencies during tight economic times.

The potential of the program is considerable as trends are identified and construction techniques analyzed to promote extended lifecycles. The county now has valuable data that will assist with targeting future life cycles, provide predictable maintenance scheduling, and designate timelines for anticipated retrofits, refurbishments and/or replacement.

The results of the inspections assist in maintenance work identification, capital planning for new assets and enhancement for existing assets based on a definable, sustainable and repeatable process.

Future enhancements will improve the process by using GIS results to identify groups of deficiencies based on an area. Divisions within public works will have the ability to compare projected maintenance costs to estimated improvement costs and compare established priorities to determine the best application of available resources.

With recent changes in NPDES requirements, the county is now faced with adding even more assets to the inspection program. This process will require the Department of Public Works to create new asset inventories, identify inspection criteria and develop new program cycles.

Though the division is faced with establishing the most efficient use of labor resources while meeting the requirements of the inspections, they are well equipped to undertake the challenges ahead.

Michael F. Garcia, PSM, is program manager II for Seminole County Public Works and Chandra Greiner, CPM, is a consultant for LA Consulting. Both are located in Sanford, FL.

Sustainable remediation practices not limited to the design phase

By LAURA GIMPELSON, PE

Sustainable remediation practices do not stop after finalizing the remedial action design. They can reduce the overall resource demand as a remedial action plan moves through the specifying, purchasing, construction, operation, monitoring and restoration/closure phases.

This is especially true for the two workhorses of groundwater remediation: air sparge/soil vapor extraction, and pump and treat.

Implementing sustainable remediation practices starts with reducing or eliminating comment letters during the approval phase and changes orders during the procurement phase. Not only do regulatory and financial approval processes go smoother, there is less paper generated and fewer field or operating changes, which can be expensive and result in time delays.

Reducing design-related comment letters on AS/SVE or PT takes two minutes to double check design assumptions and calculations. As I have mentioned in previous articles, verify that the design conditions for the pumps and blowers represent the operating conditions that will exist at least 85 percent of the planned run time.

Designing for operating conditions that only exist for the first six months of operations or during two months of the year wastes resources and power, and can result in excess air emissions and water discharges.

If one set of design conditions will not fall within the optimal efficiency range of the equipment at least 75 percent of expected run time, determine if simply changing the impeller size or reducing RPMs on your pump or blower will work.

For many systems, this type of change resulted in the blower or the pumps operating near or in the sweet spot for over 85 percent of operating time.

Sometimes, two distinct design conditions exist that when combined meet the 85 percent run time but require separate design conditions. In Florida, the difference in groundwater extraction rates due to seasonal changes in groundwater elevations is an example of this phenomenon.

One solution is not operating vapor extraction systems when groundwater elevations are above a specific depth. This reduces operating costs when soil vapors are least likely to be present and reduces the groundwater treat-

ment and disposal costs.

Another system that has two design conditions is the vapor extraction process. Typically, 75 percent of the soil vapors are extracted during the first six to eight months of operation. Then the vapor flow rate drops to less than 50 percent of the initial flow rate and the carbon beds sit on-site until the AS/SVE is removed from the site.

Sustainable practices favor installing two smaller pumps, each capable of handling 60 percent of the initial flow rate. As the flow rate drops, one pump is shut down and the airflow is handled by a single pump. Due to the short operating time, leasing the second pump can save space and money.

Operating two pumps in parallel requires additional piping and controls but this additional cost is paid back within six months of operating a single pump. In addition, the carbon bed can be removed earlier allowing for regeneration of the spent carbon instead of disposing of the spent carbon as waste.

If these options do not keep the process flow rates within the sweet spot most of the time, try using a variable speed drive. This drive acts like a clutch on an automatic transmission. As the flow rate changes within a predefined range, the drive adjusts the impeller RPMs so the motor provides the power needed. This keeps the energy demand within the most efficient section of the curves, lowering the operating costs and maintenance requirements of the equipment.

The final option that can be used to keep a pump within the sweet spot for most of the lifetime of a treatment system is to adjust piping diameter and system layouts. Reducing the number of contractions, elbows and fittings in the header system will reduce the pressure drop generated during fluid flow operations.

Often eliminating just four pipeline size reductions and eight elbows can lower the power demand to match the sweet spot specifications of the pump recommended by the manufacturer.

Additional pressure drops can be reduced by minimizing long runs of pipeline or using steel piping instead of flex hoses. I have seen too many treatment systems that have the blower coolers on the opposite side of the com-

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Florida Specifier

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

Calendar

July

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

JULY 9-13—Course: Backflow Prevention Assembly Tester Training and Certification, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 10—Course: Unidirectional Flushing Techniques, Tamarac, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 11-12—Course: Water Reclamation & Treatment Processes, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 12—Course: Lift Station Maintenance, Pompano Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 12—Course: Backflow Prevention Recertification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 12-21—Course: Backflow Prevention Assembly Tester Training and Certification, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 13—Course: Backflow Prevention Recertification Exam, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 13-21—Course: Backflow Prevention Assembly Tester Training and Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 14—Course: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 14—Course: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 15-18—Conference: Georgia Association of Water Professionals Annual Conference & Expo, Savannah, GA. Call (770) 618-8690 or visit gawp.org.

JULY 16-20—Course: Backflow Prevention Assembly Tester Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 18—Course: 4-Hour Refresher Course for Spotters at Landfills, C&D Sites and Transfer Stations, Winter Haven, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 18—Course: 8-Hour Training Course for Spotters at Landfills, C&D Sites and Transfer Stations, Winter Haven, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 18-20—Course: Initial Training Course for Landfill Operators and C&D Sites - 24 Hour, Winter Haven, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 19-21—Meeting: 2012 Annual Meeting of the Florida Section of the American Society of Civil

GIMPELSON

From Page 10

pound from the sparge blower requiring 60 to 80 feet of additional pipelines to feed the headers. In a few trailers, hoses were used instead of steel pipelines to connect the cooler outlet to the header.

Meeting the demand of this design causes the blower motor to trip 10 percent more often due to high lube oil temperature and requires lube oil to be replaced two months earlier than specified in the operating manual.

Designing the pumps, strippers and blowers to operate within the 80 to 90 percent efficiency point reduces the number of comments to answer and balances capital cost with operating costs. It allows sustainable remediation practices to be used throughout the remediation process and reduces emissions, waste and run time.

Laura Gimpelson, PE, is president of LG Environmental Engineering in Orlando. She can be reached at lg_environmental@bellsouth.net.

Engineers, Orlando, FL. Call (561) 215-4311 or visit www.fla-asce.org.

JULY 22-23—Expo: Sunshine Food & Fuel Expo, Orlando, FL. Presented by the Florida Petroleum Marketers & Convenience Store Association. Call (850) 877-5178 or visit <http://sunshinefoodandfuelexpo.com/>.

JULY 23-25—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 24-27—Course: Wastewater Class C Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 26-27—Meeting: Florida Section of the America Water Resources Association Annual Meeting, Key Largo, FL. Visit www.awraflorida.org.

JULY 27—Course: Backflow Prevention Recertification Review, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 27-28—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 28—Course: Backflow Prevention Recertification Exam, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

JULY 30—Course: Backflow Prevention Recertification Review, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

August

AUG 2-3—Workshop: ADA/PT Training, Royal Palm Beach, FL. Presented by LDCFL Inc. Call (561) 753-0483.

AUG 3—Course: Backflow Prevention Recertification Review, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 4—Course: Backflow Prevention Recertification Review, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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

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

AUG 6-7—Course: Refresher Training Course for Experienced Solid Waste Operators-16 Hours, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

AUG 6-10—Course: Wastewater Class A Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 6-10—Symposium: 2012 Environmental Measurement Symposium, Washington, DC. Co-sponsored by The NELAC Institute and the U.S. Environmental Protection Agency. Call TNI at (817) 598-1624 or visit www.nelac-institute.org.

AUG 7—Course: Asbestos Refresher: Inspector, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

AUG 7—Course: Asbestos Refresher: Management Planner, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 7-10—Course: Wastewater Class B Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 8—Course: Asbestos Refresher: Contractor/Supervisor, Ft. Walton Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 8-11—Conference: FES/FICE 96th Annual Summer Conference & Exposition, Orlando, FL.

Presented by the Florida Engineering Society and Florida Institute of Consulting Engineers. Call (850) 224-7121 or visit www.fleng.org.

AUG 9—Course: Backflow Prevention Recertification Review, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

AUG 9—Course: Backflow Prevention Recertification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 9-10—Course: LEED-APO+M Overview and Exam Preparation, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 10—Course: Backflow Prevention Recertification Exam, Destin, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

AUG 10—Course: Backflow Prevention Recertification Exam, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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

AUG 11—Course: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

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Northwest Florida airport moves to resolve legal, environmental issues

By DAN MILLOTT

Since opening in 2010, the Northwest Florida Beaches International Airport has been wrestling with both environmental issues and compensation disputes with contractors.

On numerous occasions over the last several months, the airport authority thought they had resolved the environmental issues, only to learn that the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers still had concerns.

In mid-June, John Wheat, executive director of the airport, said the issues with three contractors—Phoenix Construction, Atkins and KBR—had been resolved.

Wheat said the last legal action was settled when a Bay County Circuit Court jury awarded KBR \$300,000 on May 17. Wheat said no appeal was planned.

The legal battles date back to 2010 when James Finch, owner of Phoenix, filed suit claiming he was owed millions for work on the \$325 million airport project. Attorneys for the airport filed a counter suit.

The disputes centered around cover

runs on the airport project.

The airport authority later determined that Phoenix was not at fault and reached a settlement. They joined forces with the contractor and sued the engineers, designers and site managers.

In a settlement, Phoenix was to receive the first \$1 million after legal fees were paid and the airport would receive half of what is left.

Atkins reached an out-of-court settlement with the authority in April.

With the agreement and the jury decision, the airport is now out of litigation mode.

Wheat said that environmental concerns center on repairing the airport's stormwater management system. Heavy rains were allegedly carrying silt and dirt into nearby

creeks and wetlands.

"We are continuing to work with both agencies, the DEP and Army Corps of Engineers, and are very close to reaching a consensus on the cause of the issue."

Wheat indicated the airport has to make some improvements for secondary stormwater treatments, which the board signed off on in May.

Airport staff is in the process of designing those treatments, he said. "Hopefully we will be able to move ahead by the end of June and take care of it."

"Any business has to operate as a steward to the community and a steward to the environment," Wheat told the airport board earlier this year.

"We're all here to make sure that the quality of life is maintained."

The EPA has until at least August to make changes to an agreement that has been in place for the last couple of years.

News on urban air. In its annual air quality report, the American Lung Association delivered both good news and bad news.

Los Angeles, the U.S. city with the worst air quality, reported its best air quality data in more than a decade.

Los Angeles was not alone in the urban air quality improvement group. According to the ALA report, 22 of the 25 cities with the worst ozone problems in 2011 improved in the following year as ozone levels declined.

The bad news, according to ALA, is that 40 percent of U.S. residents, 127 million people, are still living in areas where air pollution is a serious health threat.

Ozone and particle pollution are responsible for wheezing and coughing, asthma attacks, heart attacks and premature death according.

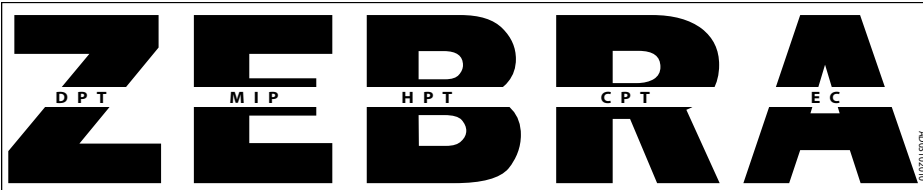
In its discussion of sources of air contaminants, ALA highlighted the role of coal-burning power plants as a major contaminant sources. The association said that it will undertake a major effort in the coming year to encourage an effective shift from coal to other energy sources that release less ozone and fewer particulates to the air.

Melbourne company receives grant.

The EPA selected ThornProducts LLC of Melbourne as a recipient of one of 25 Phase I Small Business Innovative Research grants. The title of the company's proposal is "New Technology for Electricity Monitoring & Reporting Built into Electrical Receptacles and Switches."

This grant was one of four in the EPA's Green Building category. ThornProducts will receive \$79,800 from the EPA to support the investigation.

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FEDFILE From Page 2

Cruise ship industry balks at clean fuels. More than three years ago, Canada and the U.S. worked with the International Maritime Organization to establish an emissions control zone focused within 200 miles of North American coasts.

The goal of the agreement was to reduce air emissions by restricting the use of high sulfur bunker fuel in ocean-going ships. The emissions control area is scheduled to begin in August, 2012, and be fully phased in by 2016.

While cargo shipping interests supported the legislation, cruise ship companies, under the aegis of the Cruise Lines International Association, have proposed an alternative "averaging plan" that will allow continued use of lesser amounts of high sulfur fuel. Low sulfur fuel would be used near populated coasts.

The lobbying group makes the usual claims that saving money on fuel translates into more jobs and economic activity.

Industry profits do not seem to be a significant factor in the push for looser controls by the association. For example, Carnival Corp. of Miami posted \$1.9 billion in profits last year.

So far, the EPA has not yielded to cruise industry requests for a revision that allows sulfur content averaging. According to political journalists, the industry's lobbying group has actively engaged legislators from both parties to pressure the EPA.

Democratic Sen. Bill Nelson, a recipient of \$19,200 of cruise ship industry donations, wrote to the EPA requesting the agency to consider the cruise ship industry's fuel averaging proposal.

Republican Rep. John Mica, chairman of the House Committee on Transportation and Infrastructure, drafted a letter with a bipartisan group of congressional members to support the cruise association's request for a high sulfur fuel averaging regulation.

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Wetlands restoration project underway at Boca Chica Key NAS

By SUSAN TELFORD

The U.S. Navy has begun work on a \$50 million wetland restoration and runway safety project that will restore salt marsh habitats once the historical footprint around the Naval Air Station at Boca Chica Key.

It took 10 years to gain permitting approval from the Florida Department of En-

vironmental Protection and U.S. Army Corps of Engineers to remove the mangrove and buttonwood trees near the runways after they were deemed to be a flight hazard around the Boca Chica Airfield.

Naval Air Station Key West Environmental Director Ed Barham has been coordinating the project, working to ensure they stay in compliance with Federal Aviation Administration guidelines while also

maintaining compliance with the National Environmental Policy Act and directives from the U.S. Fish Wildlife Service and the National Oceanic and Atmospheric Administration.

"The work began to restore the flight lines to ensure the airfield was in compliance with both the FAA and Navy requirements necessary to operate a safe airport," said Barham. "Over the years, mangrove and other vegetation had grown up to a point that it became a safety hazard for pilots and for air traffic controllers who must be able to see all areas of the runway. The trees were interfering with their line of sight."

The Navy maintains there will be no net loss of wetlands and the work will actually restore wetlands in what Barham calls "the biggest wetland restoration project in the Keys."

"What residents, particularly those on Geiger Key, are seeing right now is the work to restore those sites to their historic wetland condition," said Barham. "Years ago when subdivisions were built on Geiger Key, many of those areas were filled in with coral rock."

Workers are now removing the scrap fill. Marsh plants and grasses that are native to the area will be installed with the hope that eventually the wetlands will con-

nect.

The restoration project consists of trimming and removal of vegetation in order to restore unobstructed airspace and to provide safe ground movement of aircraft to meet airfield safety criteria, while preserving and protecting the environment.

The project also includes improvements to the stormwater drainage system at Boca Chica Field as well as the proposed planting of high salt marsh vegetation in select areas to provide habitat for the state and federally endangered Lower Keys marsh rabbit. Shoreline impacts to the endangered smalltooth sawfish and marsh rabbit were researched for this sensitive environmental project.

Approximately 900 acres of wetlands and surface waters will be restored across seven sites located on Boca Chica Field, Geiger Key, Rockland Key and Big Coppitt Key, all within NAS Key West property lines.

Enhancing and restoring the wetlands and surface waters of these properties also includes the removal of invasive species and individual mangrove removal to foster a healthier mangrove environment.

NAS Key West estimates the project costs for airfield environmental restoration and mitigation to be \$50 million with an expected completion by 2014.

Alliance Dairy to produce electricity from dairy manure biogas

By ROY LAUGHLIN

Alliance Dairies is embarking on a new course to exploit cow manure from its intensive management dairy facility in Trenton in Gilchrist County.

The dairy is building a large fermenter that will produce methane from manure. The methane will power a one-megawatt electrical generator.

The structure will feature a plug flow generator designed specifically for the dairy plant. When the digester is completed in October, it will take about a month to fill completely. The residence time for a batch of manure and other biosolids is about three weeks, said Ron St. John, owner of Alliance Dairies.

The methane gas will be used at the dairy to produce electricity in a one-megawatt generator. Most of the electricity produced will be used by the dairy, but when the power production exceeds the dairy's needs, the local electrical cooperative will buy it and send it to other customers.

"The advantage we have is that we have it (gas production for electricity generation) 24 hours a day, seven days a week," said St. Johns.

NOTES From Page 3

CBD comes to St. Pete. The Center for Biological Diversity, based in Tucson, AZ, said its new office in St. Petersburg will help expand the group's role in fighting to conserve biodiversity in the Southeastern U.S.

The center, founded in 1989, has spearheaded petitions and lawsuits in Florida in recent years. It helped secure federal Endangered Species Act protection for two species of corals in 2006.

The group also petitioned the U.S. Fish and Wildlife Service in 2009 to have critical habitat designated for the Florida panther and petitioned in 2011 for the species' reintroduction to the Okefenokee Swamp in south Georgia.

Companies on the move. The Bradenton office of Lewis, Longman & Walker

The U.S. Department of Energy paid for about a third of the fermenter's construction cost. In addition, the local electrical cooperative, the Central Florida Electric Cooperative, partnered on facility development and utilization.

Natural gas prices have declined markedly over the past few years as fracking has brought prodigious quantities to market. St. John noted that the price of natural gas will not directly affect the economics of his fermenter because its gas generates electricity on site, displacing the electricity purchase from the grid to power the dairy.

The fermenter will also produce a liquid that is about 10 percent biosolids. Initially, that will be used as a pasture fertilizer. However, as the economy improves, the biosolids may have value as a soil amendment for landscapers.

St. John noted with some satisfaction that this new fermenter allows the dairy to recycle both water and manure as useful resources on the dairy farm.

He noted that economical recycling like this is essential to successful farming—in this case from dung to watts in about three weeks.

P.A. relocated to 101 Riverfront Boulevard, Suite 620, Bradenton, FL 34205. The phone and fax numbers remain the same. The Bradenton office has been serving the community for over eight years. LLW has additional offices in Jacksonville, Tallahassee and West Palm Beach.

HSA Engineers and Scientists moved their Fort Myers office to 9110 College Pointe Court, Fort Myers, FL 33919. They can be reached at (239) 936-4003. HSA's corporate office is in Tampa. They have additional Florida offices in Orlando, Pensacola and West Palm Beach and offices throughout the Southeastern U.S.

Gimpelson honored. The board of directors of the American Institute of Chemical Engineers has conferred the rank of Fellow to Laura Gimpelson, PE, president of Orlando-based LG Environmental Engineering.

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ADENA

From Page 1

2000 that severed the relationship between cumulative annual rainfall and cumulative annual flows for Silver Springs, Knight said since flow declines started in the 1980s, the cause is more complicated.

"They are looking for an explanation other than pumping, but the population increase was about 10-fold during that time with many wells and permits," he said. "What we are seeing is a long-term continuing decline in groundwater levels in northern Florida and changing boundaries and regional draw-downs with less contributing flow to Silver Springs."

Knight points to evidence of a migrating springshed boundary between the

springs as early as the 1990s, which he said is most likely due to a combination of excessive groundwater pumping and reduced groundwater recharge.

While drought conditions are contributing to low flows in the springs and general aquifer levels, there seems to be more contributing factors that include pumpage, said retired environmental engineer Gary Kuhl, PE, formerly with the Southwest Florida Water Management District and several Southwest Florida county public works departments. "We have seen droughts in the past, but we haven't seen levels (this low) before."

However, Florida's great variability makes it irrational to stop issuing permits during drought conditions in the same way

as issuing more permits during a flood, said Ed de la Parte, managing partner of de la Parte & Gilbert PA and the water use permitting attorney for the ranching operation.

"When you look at specific facts of the project, the impacts will be immeasurable to minimal. We have racked our brains to be as efficient as possible," said de la Parte.

The application is for a total groundwater withdrawal of 13.267 mgd, with 12.56 mgd for agriculture to grow food for the cattle, 0.48 mgd for watering the cattle, 0.16 mgd for power plant cooling, 0.06 for plant processing, 0.005 mgd for potable water for employees and 0.004 mgd for pesticide use.

According to groundwater modeling conducted for the ranch's permit, summarized in white papers on the ranch's website, the requested withdrawal will "slightly lower water pressure in the Floridan Aquifer and minimally reduce water levels in the surficial aquifer in the vicinity of the ranch."

More specifically, the projected decline in surficial aquifer levels ranges from 2.5 inches to five-eighths of an inch. The projected reduction in the aquifer water level near Silver Springs is about three-fourths of an inch.

In terms of the springs' discharge reduction resulting from the proposed groundwater withdrawal, the effect for the period after 2001 is estimated to be roughly 9.6 cfs or 1.8 percent. The summary also states that there will be no adverse environmental impacts to the Silver River, Lake Kerr, the Lake Orange-Lake Lochloosa system and several significant wet prairie systems along the western side of the property.

The project website also emphasized that the ranch would not be pumping the maximum 13.267 mgd every day, adding that this amount would be used only two of the 10 years and that irrigation could halt during particularly rainy periods.

When asked if the ranch's usage could be the proverbial straw that broke the camel's back, de la Parte dismissed the notion saying the unusual changes in Silver Springs do not appear to be caused by groundwater withdrawals.

He also said that citing other groundwater withdrawals in the district isn't a fair tact to take. The district covers a huge area and groundwater withdrawals in one area do not necessarily impact the springs systems in another.

"I understand what he (de la Parte) is saying about the changes in the aquifer and spring systems being just theories and that their use would be just a drop in the bucket in an area that is smaller than the entire aquifer," said Kuhl. "But, when you have an amount that is about the same as the city of Ocala is pumping, there is going to be an impact. Then, when you factor in the generation of nitrates and nutrients by the cattle—it seems caution should be the prevailing approach."

Many of the water bodies in the area already have long-standing nutrient issues including the Santa Fe and Crystal rivers, and Silver Springs, where nitrate levels are greater than 1.0 mg/L, Kuhl said.

The estimated 15,000-30,000 head of cattle will generate a lot of waste full of nutrients such as nitrogen. "It will be hard to control those nutrients and make sure they don't get into the groundwater."

Ranch officials point to updated farming and best management practices for fertilizer application along with a nutrient management plan that will utilize criteria from the USDA Natural Resources and Conservation Service and the University of Florida's Institute of Food and Agricultural Sciences.

For instance, cattle will be rotated between grazing areas planted with different forage food crops that have varying growing and maturity cycles. When the cattle leave a grazing area, manure is spread over that area and tests on soil and leaf tissue are performed every 10-14 days to determine if the plants need more nutrients and what amount and type of nutrients should be added.

"Overall applied nitrogen amounts will be coordinated with naturally occurring

manure deposits to field areas, ensuring that no more nitrogen will be available at any one time than can be utilized by healthy growing plants," said a paper on farm practices and nutrient control on the ranch's website.

The nutrient management plan will be submitted to the district for review by their engineers and agricultural specialists, said de la Parte. He stressed that IFAS is not a consultant for the ranch but has developed a lot of the best information to improve efficiency and reduce impacts to the environment.

Following the request for additional information from the SJRWMD, ranch officials asked for an extension until late August to respond.

The RAI asked for more information about the ranch's nutrient management plan, the area's aquifer characteristics, and on how the demand amounts were calculated for the crops.

Ranch consultants are working on a test to better model the effect on the surrounding area, according to Mike Register, director of the Division of Regulatory Services for the SJRWMD.

More specifically, the district is trying to tie down the ranch's exact plans so the details can be put into its irrigation plan model.

"We haven't had any operations of this type within the district, or state, where they are trying this type of cattle with strictly irrigated forage and of this magnitude," Register said. "It is a big project with a lot of issues in an area with minimum flow and level impacts and the potential for total maximum daily loading."

Although the MFLs for Silver Springs will not be finished until 2013, Register said the science is complete and will be used to determine potential impacts that the withdrawal will have on the resources and area ecology. The district will ensure it won't have any harmful repercussions in regards to the spring levels and nutrient loading, Register said.

If there are no more time extensions, the district will have 90 days to determine if the revised permit application meets the criteria of being a responsible, beneficial use that doesn't impact existing legal users and doesn't have an unacceptable adverse impact to the environment.

Register also said that the district is asking ranch officials to examine alternative sources such as reclaimed water.

Seriously considering alternative water resources such as reclaimed water, recirculating surface water and reservoirs, perhaps in some type of scaled-down combination, is the responsible course of action despite the additional expense, Kuhl said.

"The applicant (Stronach) seems like a businessman interested in being a role model and doing the right thing," Kohl said. "This may be an opportunity to look at options that are different and outside the box."

Maybe the withdrawal amount can be reduced and other means can be found in a certain amount of time to offset the groundwater pumping, which will be accomplished by drilling an estimated 130 additional wells into to the aquifer, speculated Kohl.

He added that the taxpayer often has to foot the bill to resolve poor decisions in the long run and that it would be nearly impossible to reverse any damage done.

Right now reclaimed water is not seen as a viable option since the nearest supplier is Ocala, de la Parte said. In addition to being 10 miles away, the time of their lowest supply would be when the ranch needs the most water.

In the meantime, the ranch will continue to examine ways to reduce the allocation and will consider suggestions other than dropping the permit request during public meetings it is sponsoring in the area.

However, none of these suggestions will placate Knight who has urged the district to consider a moratorium on new CUPs throughout the historic groundwater basins of Silver and Rainbow springs

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Stormwater pilot provides education on impacts

Staff report

Officials with the University of Florida are conducting a pilot study at Lakewood Ranch and the neighborhood next door, River Club, in Southwest Florida on the effects that fertilizer and grass clippings have on ponds. They are hoping that homeowners there get a better idea of the impact of landscape fertilizer and lawn debris on stormwater ponds.

About 900 homes in River Club and more than 4,000 in the Country Club Village of Lakewood Ranch are the focus of the study.

Michelle Atkinson, Florida Friendly Landscaping coordinator with the county's agriculture and extension service, said homeowners are being educated on fertilizer best management practices and how to create programs that encourage replanting shorelines with natural vegetation and aquatic plants.

"We have been trying to educate homeowners about the effect of nutrient runoff on stormwater ponds," Atkinson said. "Lakewood Ranch has some 300 stormwater ponds and some homeowners are not happy because there is a lot of algae in the ponds."

Officials want to determine if outreach and education efforts can change residents' behavior.

Atkinson said that in July, officials will explain to homeowners and others the functions of the stormwater ponds and why lake bank planting is helpful.

The total cost for the study is \$17,000 of which \$10,000 is provided by a grant from UF's Center for Landscape Conservation and Ecology and \$1,500 from the Southwest Florida Water Management District.

"I think the biggest accomplishment of this study has been getting everybody in the room together to talk about these issues and communicating the issues with residents," Atkinson said.

ADENA
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until a sustainable groundwater yield for human needs is reached.

Knight and Kuhl were among individuals who met with district officials recently to voice their concerns about the springs' flow levels and groundwater declines. These declines, said Knight, are resulting in unintended regional groundwater transfers between districts and significant harm to surface water resources.

In addition to the moratorium, Knight suggested that the SJRWMD work with the state Department of Environmental Protection and the SWFWMD to characterize the changing springshed boundaries within the area of overlap between the Silver Springs and Rainbow Springs groundwater basins, finalize MFLs that will fully protect the two Outstanding Florida Waters, and prepare empirical water balances for these two springsheds that explicitly document all inflows and outflows to allow better management of groundwater resources in both districts.

Knight suggested that if this study indicated regional groundwater pumping as the culprit behind the drastic flow declines, then steps should be taken to reduce pumping enough to reverse the declines.

"It is clear to me that we are past that point of harm to these water bodies and continuing down the road of creating more harm," Knight said. While he said the ranch didn't create the problems, they are arriving late to the party and shouldn't be given a chair at the table because the springs simply can't bear it.

His suggestion for ranch officials was for the cattle to be put in a long-term stand of long leaf pine, which would not use groundwater or add nitrate to water resources. The idea, he said, wasn't embraced.

"No one has a problem with cow ranching, but we have to find ways to do projects such as this with a reasonable approach that takes care of our resources," said Kuhl.

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EDs

From Page 1

economy and environment.”

He said another of his main goals is to make sure there are adequate water resources.

“I want to ensure sufficient water resource levels to sustain our unique natural systems and develop complimentary water quantities to strengthen Northwest Florida’s stance in pursuit of economic development,” he said.

Another priority will be to make sure the district operates more efficiently.

“I want to ensure that we improve customer satisfaction,” he said. “It will come down to our practices here and how we are functioning. We are doing a thorough

evaluation of our processes.”

He said there needs to be more regulatory certainty with district activities.

“I think the regulated community needs to know exactly what it takes to get a permit,” Steverson said. “We are not going to lower the regulatory bar. But we are going to do our best to tell (the regulated community) ‘yes’ or ‘no’ quickly. I don’t want these permit applications dragging on for years.”

He said there are a lot of great people working at the district. “We are fiscally



Steverson



Shortelle

restrained so we have to do a lot more with less. We have to be more creative in our approaches to solving problems.”

Steverson said he wants to make sure that the district is working closely with DEP, the governor’s office and the other water management districts.

“We have been blessed that we have not faced the pressures the other districts have faced with water supply and water resources,” he said. “There’s a lot that we can learn from them.”

Steverson said he has worked hard to establish good relationships with the governor’s office, DEP and the Northwest Florida legislative delegation. “I feel our district is well poised to participate in the executive and legislative decision-making processes,” he said.

Meanwhile, the Suwannee River Water Management District has named DEP’s Ann Shortelle, PhD, as its new executive director.

She replaces David Still, who served as executive director through February.

Shortelle most recently served as director of DEP’s Office of Water Policy. She joined DEP last year after working in the

NNC

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schel T. Vinyard Jr.

“Florida has made a significant investment, spanning more than a decade, studying and collecting data regarding nutrients in Florida’s unique aquatic ecosystems,” he said. “We have used this science to develop a set of rules for the state of Florida that are the most comprehensive nutrient standards in the nation.”

If approved by the U.S Environmental Protection Agency, the state NNC will replace federal rules that most of the regulated community opposed as too generic and lacking the scientific foundation of the state version.

“This is a state issue and should continue to be regulated by the state based on sound science,” said Tom Feeney, president and CEO of Associated Industries of Florida, in a statement supporting the recent ruling and the state’s proposed rules.

EPA has 60 days to evaluate the state’s NNC. Clearly, DEP officials expect a favorable review.

“EPA scientists have already confirmed that DEP’s rules are accurate, correct and will continue to improve our state’s water quality,” said Vinyard.

“It’s time to turn our focus on improving water quality, put our plan in action and end needless litigation that delays Florida’s rules,” he said.

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private sector for years as a water quality consultant.

She said that the district will be focusing heavily on the North Florida Regional Water Supply Partnership with the St. Johns River Water Management District.

“In addition, because of the concern for the stream flows and springs, we are very focused on our efforts at looking at the schedule for minimum flows and levels,” Shortelle said. “These are the two big pieces of the puzzle: (ensuring that we have) the water that we need and protecting our natural systems.”

Shortelle said the way she likes to operate is action-oriented. “We are going to move forward,” she said. “We are going to use our science to solve problems.

“We have super people working here. And we have great technical resources. Hopefully, a lot of things we can do with water conservation can help us with water quality.”

She said the time she spent working at the department was brief but invaluable. “That time was irreplaceable for me in terms of rounding out my experience,” she said.

Shortelle has more than 25 years of professional experience in lake, riverine and reservoir management for water quantity and quality, surface water/wetlands restoration enhancing water quality and source water protection, surface water modeling, permitting and environmental assessments.

She worked in the private sector until recently as a consultant, serving as MACTEC Engineering and Consulting Inc.’s chief scientist in Florida and water practice leader.

She joined MACTEC in 1988 and served as a chief scientist, senior principal and senior project manager.

She has managed numerous projects related to restoration, mitigation planning and natural resource damage assessment and has conducted training related to water quality and quantity.

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