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TRASH

The Newsletter of the SWANA Florida Sunshine Chapter

Fall/Winter 2017

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Letter from the President

December 2017

I just returned from the SWANA International Road-E-O, which was hosted by the Florida Chapter at the Orange County Landfill—thanks to Orange County for providing a great facility where we could see both the truck and heavy equipment competitions at the same time! It was an awesome event with beautiful weather and about 280 attendees from around the country. I want to commend our Road-E-O chair, Ginn Gene, and his committee for another fantastic job. And as always, we couldn't have done it without the financial support of our sponsors—we really appreciate their participation. Congratulations to all the winners, but especially those from Florida!



The board also met the day before the Road-E-O (and some of our board members stayed to serve as judges) where we discussed a wide range of topics to plan for the chapter's future. Please feel free to let us know what's important to you so we can head in the right direction. What do you like? What don't you like? What are we missing? Look for a membership survey in the near future, and be sure to respond so we can best address the needs of our members.

Our next event will be the Joint Summit with RFT, January 28-30, 2018 at the B Resort and Spa in Lake Buena Vista. Registration is open and we're putting together a great program, including a panel on lessons learned from Hurricane Irma, which I'm sure will benefit everyone. I hope your community weathered the storm and that things are now getting back to normal. This one really hit every part of our state and reminded us all of our vulnerability.

Finally, our summer conference has been scheduled for July 15-17, 2018, at the PGA National Resort in Palm Beach Gardens—mark your calendars.

I personally love this time of year when the temperatures cool off a bit and football is in full swing. As we head into the holiday season, I always reflect on the importance of family and friends. Spend time with yours doing the things that make you happy.

Sincerely,

A handwritten signature in blue ink, which appears to read "Tammy L. Hayes".

Tammy L. Hayes
SWANA FL Chapter President

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Recent Experience with Title V Air Operation Permit Renewal for the Indian River County Landfill

Kwasi Badu-Tweneboah, Ph.D., P.E., Samir Ahmed, E.I., Craig Browne, P.E., and Himanshu Mehta

The Indian River County Landfill (IRCL) in Vero Beach, FL recently underwent a Title V Air Operation permit renewal for the year 2017. Title V refers to the 1990 Clean Air Act requiring certain facilities with air pollution sources to obtain an air operating permit. The IRCL facility was issued an initial five-year Title V Air Operation permit in 1998, and had renewed the permit every five years through one of the District offices of the Florida Department of Environmental Protection (FDEP). However, the latest renewal application in 2017 had to be processed by the Division of Air Resource Management (DARM) in Tallahassee, Florida as part of an



Figure 2 - Installation of sample collection probe in the Segment 3, Cell 1 Area.

overall centralized permitting system enacted by FDEP in 2013. This paper presents the authors' experience in going through this process with DARM.

As part of the permit renewal process, an inventory of non-methane organic compound (NMOC) emissions

from the facility must be compiled. NMOC emissions for the IRCL were calculated using the Tier II approach of the New Source Performance Standards (NSPS) where site-specific NMOC concentrations are obtained. NMOC emission calculations are performed to identify whether a given landfill facility must install a gas collection and control system (GCCS) in accordance with NSPS requirements. On August 29, 2016, the U.S. Environmental Protection Agency (EPA) issued two final rules regarding NSPS and Emission Guidelines for municipal solid waste (MSW) landfills. The new rules have reduced the threshold of NMOC emission rate from 50 megagrams per year (Mg/yr) to 34 Mg/yr before requiring the installation, operation and maintenance of a GCCS. MSW landfills are subject to the new NSPS

rules if they have a design capacity of 2.5 million metric tons or 2.5 million cubic meters of waste. The new rules also apply to MSW landfills for which construction, reconstruction, or modification commenced after July 17, 2014. Although Florida has yet to adopt the new regulation of 34 Mg/yr, it is likely this new threshold will soon come into effect and require many landfills that currently do not have a GCCS to have one in place.

The IRCL property covers about 276 acres that includes a Class I (MSW) disposal facility with approximately 4.5 million tons of total waste in place. This facility includes three contiguous landfill units, Segments 1, 2, and 3 with an Infill Area between Segments



Figure 1 - Sampling of landfill gas from header pipe.

1 and 2. Segment 1, Segment 2, and the Infill Area have an existing, voluntarily-installed GCCS that consists of vertical and horizontal gas extraction wells, gas collection lateral and header pipes, blower, and flare. The Segment 3 landfill unit currently consists of one active cell (Cell 1) with waste in place for over two years without an existing GCCS.

Tier I of the NSPS typically yields higher emission estimates due to default parameters used for a facility's NMOC concentration as opposed to Tier II testing requirements where site-specific concentrations are obtained. Because portions of the IRCL contain an existing GCCS while others do not, Tier II testing was performed to estimate a composite NMOC concentration. Therefore, gas samples were collected from the header pipe at the gas flare that services the existing Segment 1, Infill Area, and Segment 2 gas collection network (see Figure 1).

Gas samples were also collected at nine locations distributed spatially

within the Segment 3, Cell 1 area. At each of the nine locations, sampling probes were inserted into the waste at least three feet below ground surface (Figure 2) prior to collecting gas samples.

The resulting weighted average NMOC concentration obtained from an analytical laboratory was subsequently input into the EPA's Landfill Gas Emissions Model (LandGEM) program to estimate emissions rates for NMOC. Results and conclusions regarding emissions for the IRCL facility were calculated to be under the 34 Mg/yr threshold for the next five years (Figure 3) and thereby not requiring the facility to install, operate, and maintain a GCCS in compliance with the NSPS. Nevertheless, the IRCL will continue to operate the existing GCCS and seek opportunities for beneficial use of the collected gas.

The Title V permit renewal application submittal included emissions estimates for key pollutants (e.g., CO, SO₂, etc.) generated from each regulated and unregulated emissions unit onsite. The application was submitted to FDEP in December 2016. Even though installation of the existing flare was permitted through FDEP's solid waste program, DARM required that an Air Construction Permit application be submitted for an already installed flare. Following submittal of an Air Construction permit application for the flare, a final air construction permit was issued on March 24, 2017. DARM also requested sampling and testing of the landfill gas for hydrogen sulfide (H₂S) concentration primarily due to recent concerns with H₂S and associated odor at several landfill disposal facilities in the state that accepted gypsum-based wallboards.

Also, since 2008 the County co-disposes construction and demolition (C&D) debris with MSW into the

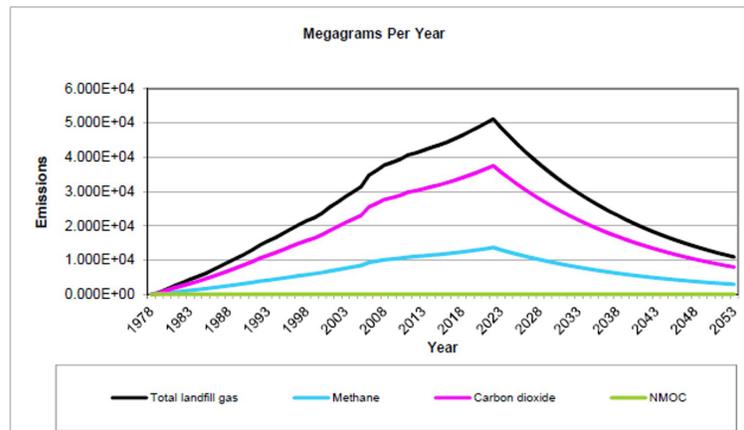


Figure 3 - Emissions Chart from LandGEM.

Class I landfill, and therefore, the concern of H₂S potentially present in the gas was justified. The average H₂S value from three samples was found to be less than the value used for the emission calculations and subsequently confirmed by DARM that the Prevention of Significant Deterioration (PSD) process could be avoided. A final Title V Air Operation Permit Renewal was issued by FDEP on June 1, 2017. The new permit requires annual testing of the landfill gas for total reduced sulfur in lieu of the general visible emissions (i.e., flare opacity) testing that was required in previous permits.

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Florida Recycling Summit at Port Tampa Bay Highlighted Area Recycling Efforts

The Tampa Bay area tops the list of recycling rates in Florida. Participants from the public and private sector gathered at the Florida Recycling Summit at Port Tampa Bay to learn how companies, the City of Tampa and Hillsborough County are making a difference.

The day began with an informative and educational harbor tour aboard the Bay Spirit II where participants learned about Port Tampa Bay, Florida's largest and most diversified seaport.

After the tour, participants move to Terminal 2 where they heard presentations from Port tenants, local government recycling experts, Florida Department of Environmental of Protection recycling specialist and University of Florida IFUS artificial reef expert.

Paul Anderson, CEO and President of Port Tampa Bay, welcomed participants and gave a brief overview of the Port and its economic impact to Florida. Port Tampa Bay has a mix of cargo, ship repair and cruise line tenants and is the largest Port in Florida. Joining Mr. Anderson was Hillsborough County Commissioner Sandra Murman who also serves on the Port Tampa Bay Board and State Representative Jackie Toledo. All complimented the attendees for their interest in recycling and encouraged them to continue to work toward increasing Florida's recycling rate.

Port Tenants Recycle Different Materials

Three of Port Tampa Bay's tenants talked about how their company is recycling. The first speaker was Randy Melton, Senior Environmental Administrator, Environmental Health and Safety for Tampa Electric Company (TECO). TECO produces

quality based oil products instead of letting it go to waste.

Trademark Metals Recycling LLC (TMR) is Florida's largest scrap metal recycler with 23 locations in Florida. Joe Stalker, EI, CHMM Environmental Manager for Trademark talked about the company's recycling facilities

that includes four automobile shredders, balers, shears, mobile shearing, torch processing, auto crushers, an extensive truck and railcar fleet, landfill services, and railcar dismantling.

TMR recovers scrap metal that would otherwise

go to a landfill. Their ferrous recycling processes uses high efficiency shredders, balers, shears and sorting equipment. TMR's sophisticated sortation system uses state-of-the-art technology to ensure that virtually every ounce of metal is extracted during the recycling process.

Hillsborough County Tied for #1 Recycling Rate

Hillsborough County is the 4th largest county in the State and is tied for the Number 1 spot with Pinellas County for its recycling rate at 82%! Alita Kane, the Recycling Specialist with the City of Tampa and Travis Barnes, the Recycling Coordinator for Hillsborough County discussed recycling efforts in the area and some of the challenges they face.

For example, Alita discussed the how Tampa wants to expand commercial and multifamily recycling and reduce



Karen Moore

an average of 900,000 tons a year of CCRs and recycles approximately 95% of it. This CCRs recycling rate is one of the highest in the country! CCRs is defined by EPA as Slag, Bottom Ash, Fly Ash, and FDG Gypsum.

Slag is used to make roofing materials and gritblasting. Bottom Ash is used to make cement. Fly Ash is also used to make cement but can be found in concrete and flowable fill. Gypsum is found in drywall, fertilizer and cement.

David Tedford, P.E., LEED AP for PURAGLOBE Florida talked about the new plant they are building at Port Tampa Bay. For more than a decade, PURAGLOBE has worked with crude oil companies to extend the lifespan of our natural oil resources. At the new Tampa Plant, PURAGLOBE will transform used oil into new, high-

contamination. Another goal of the City is to increase recycling at events. Tampa holds 20 to 25 major events each year with Gasparilla being the largest. It is a tradition for “Pirates” and other participants to throw beads during the parade and Alita is researching a way to recycle them.

They plan to lead by example and working on recycling programs for all Tampa municipal facilities and reduce the environmental impact of municipal operation. This action will add 50 buildings to the recycling program. The City of Tampa is Florida’s third largest city so by including municipal facilities to the list, recycling rates should continue to increase.

Travis discussed how Hillsborough County’s implementation of a comprehensive public education and outreach campaign helped them reach a high recycling rate. The campaign focused on reducing recycling contamination through different media outlets such as TV and radio interviews and ads; new recycling literature and web page; increasing presentations within the community and billboards, radio, newspaper, and digital advertising. The County also tried to reach both English and Spanish speaking households.

Travis told the group how important it was to partner with haulers and MRF. For example, they distributed “Oops” recycling contamination notification tags on carts to let customers know when they placed the wrong items in the recycling cart.

Alita and Travis explained their Tampa Bay Regional Recycling Campaign, “Keep Recycling Bag Free.” This campaign focused on keeping plastic bags out of the recycling stream. They found by working together they could reach more people especially since their residents live, work, and play across the bay.



Keyna Cory, Executive Director

Florida Has a 75% Recycling Goal by 2020

Karen Moore, Environmental Administrator for the Florida Department of Environmental Protection, gave an overview of Recycling in Florida. In 2008, the Legislature set a 75% statewide recycling goal for municipal solid waste by 2020. They also set interim goals: 40% by 2012; 50% by 2014; 60% by 2016 and 70% by 2018. The goal does not include industrial or manufacturing waste. The Legislature also set that same goal for all counties over 100,000 population and has directed all counties to report their recycling progress to DEP annually.

The statewide overall recycling rate, which includes renewable energy recycling credits, increased from 54% (2015) to 56% (2016) but fell short of the 60% goal set by statute. Therefore, DEP shall provide a report to the legislature identifying additional programs or statutory changes needed to achieve the goals.

Florida statute also states that if a county does not achieve an interim recycling goal, DEP “may direct the county to develop a plan to expand recycling programs to

existing commercial and multifamily dwellings, including, but not limited to, apartment complexes.”

In addition to the above changes, in Chapter 2010-143, Laws of Florida, the Legislature also introduced s. 403.706(2)(b), F.S., directing that counties implement a program for recycling construction and demolition debris as part of their efforts to attain the recycling goals noted above.

In an effort to educate and gather information, DEP hosted a series of Webinars concerning various issues associated with recycling in Florida. The Webinars had more than 20 presenters and over 300 recycling professionals participated. Topics included Contamination issues in single-stream recycling; Electronic waste in MSW; Organics in MSW (three-part series); Education and Construction & Demolition Debris.

DEP also created a LISTSERV to encourage discussion and dialogue of important topics amongst those that drive recycling in the state. It is a closed group for county and city recycling coordinators and can be found at frc@lists.dep.state.fl.us. Another format to gather information was through workshops and strategic planning meetings on organics and construction & demolition debris.

Currently DEP is working on a strategic plan, due to the Legislature in December. The plan will look at strategies and recommendations heading to 2020. Some of the areas being reviewed are single stream recycling; markets; C&D recycling; organics recycling; commercial recycling; education and the 75% recycling goal and Sustainable Materials Management (SMM).

Continued on page 8

Continued from page 7

Karen also introduced DEP's new statewide education campaign—RETHINK, RESET, RECYCLE. The new campaign wants people to RETHINK what we recycle and RESET our behavior to focus on what we RECYCLE. The new Statewide Education Campaign is partnership with the Florida Recycling Partnership, Recycle Florida Today, Waste Management and others with the goal to boost awareness of the top Items which are the cornerstone of a successful recycling program.

Karen also touched on SMM and how should we look at recycling. "EPA, FDEP and Florida's recycling industry have been conducting research and holding discussions about the achievability of weight based goals, such as Florida's 75% Recycling Goal, and the practicality of implementing SMM goals in Florida. The recycling goal has helped propel Florida's recycling rate forward; however, it only accounts for one area of environmental protection. No one single goal can measure the full environmental impact of the materials used from cradle to grave. Multiple goals can be set, depending upon the environmental attribute(s) that are most important to the organization; such as, landfill capacity, toxicity or water," said Karen.

According to Karen, Dr. Tim Townsend, a professor with the University of Florida, has been conducting research on SMM and Florida's recycling goal using grant funding provided by the Hinkley Center for Solid & Hazardous Waste. He is taking a more in depth look into the environmental impacts of the materials that are being recycled

and the effects that these materials have on the environment through the end of life. Below is a summary of Dr. Townsend's research to date. The full report, *The State of the State of Waste Management in Florida*, will be released by the end of the year.

Dr. Townsend's research highlights the need to take a closer look at the current recycling goal and the possibility of refocusing the efforts.



Rep. Jackie Toledo, Paul Anderson and Commissioner Sandy Murman

FDEP recently conducted a meeting with Florida's Recycling Industry that focused on the question of whether we continue on the path to the 75% weight based recycling goal until 2020 or consider the possibility of changing to a SMM goal. Most of the participants agreed that the goal should be refocused—understanding that this type of change will probably not occur quickly. No consensus on what the new goal should be; however, most would like to see a transition toward sustainable materials management.

Artificial Reefs: Creating Marine Habitat from Materials of Opportunity

Tampa Bay and Pinellas County have used a variety of materials to make artificial reefs such as clean concrete

and heavy gauge steel products, discarded pipes and even old sunken boats. Libby Carnahan, Florida Sea Grant Agent for the University of Florida - IFAS Extension discussed how they determine which materials to use and how it is positively affecting the marine habitat in the area. An artificial reef is when one or more objects of natural or human origin intentionally placed on the sea floor for the purpose of enhancing marine life for human use through the creation of new reef habitat.

Libby stressed that instead of recycling, build a reef and create habitat! In another word ... reuse beneficial materials. In the 1960s to 1980s, artificial reefs were used as a solution for waste disposal (tires, cars, toilets). Seeing problems with using these materials, research was done to find appropriate discarded materials that would be environmentally safe. Today's primary goal focuses on providing a marine habitat benefit and do no harm, carefully regulating

the types of material allowable. Acceptable materials include concrete such as culverts, bridge spans and pilings, steel from vessels and towers, and limestone and granite boulders.

Examples shown of using bridge segments and spans included the Pinellas County Bayway Bridge, the Dupont Bridge Span and Hathaway Bridge Span in Panama City.

Libby also explained the benefits of staging areas. There are approximately 10 in the state where it is easy to accept donated materials and there is room to accumulate substantial amounts of materials over time. It is more cost-effective to deploy large volumes of materials at one time.

Libby summarized by saying it is better to reuse reef materials than recycle or dump. A sizable percentage of artificial reef programs rely on donated materials. The program wants to continue to partner, promote, and deploy artificial reefs as an alternative method of disposal that benefit marine life and fisheries.

If you have donated material, or for further information on artificial reefs for your area, contact Christine Kittle, Florida Fish & Wildlife Conservation Commission, Artificial Reef Program, at Christine.kittle@myfwc.com.

The Summit was coordinated by the Florida Recycling Partnership and Port Tampa Bay. Sponsors for the event included Florida Beverage Association, Publix, Waste Management, Mosaic, Rooms-To-Go, IBWA, Keep Florida Beautiful, Florida Ports Council and Action Environmental.

For more information, contact Keyna Cory, Executive Director for Florida Recycling Partnership, at (850) 728-1054 or e-mail keyna@frecycling.org.

JOB OPPORTUNITY
Solid Waste Design Engineer

Atlantic Coast Consulting, Inc. is seeking a highly motivated and achievement-oriented individual to assist in the design of solid waste projects. Typical tasks may include:

- Preparation of design and construction plans for landfill cell or landfill gas extraction systems including grading design, roadway design, site design, utilities and stormwater management design, erosion and sediment control design as well as profiles, details, and volume calculations
- Stormwater hydrology design calculations
- Pumping systems design
- Research local and state regulations and verify compliance
- Customize typical details and standard construction specifications for use in construction documents

Successful candidate will prepare drawings using AutoCAD/Civil 3D as well as other various design software. Candidate must have working knowledge of AutoCAD/Civil 3D and be proficient in Microsoft Office Package, 3-4 years of experience with a BS in Civil/Environmental Engineering, EIT preferred. Candidate should also be able to demonstrate an ability to communicate in both oral and written media and be able to function effectively both independently and on teams.

Successful candidate will be honest, trustworthy, dedicated and have a desire to create quality relationships both inside and outside of work, and a desire to continue learning as well as mentor others. Candidate must be willing to provide quality service, be conscientious and responsive to our clients.

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Transfer Station (TS)	\$550	Day 1, 2 + Exam
Materials Recovery Facility (MRF)	\$550	Day 1, 2 + Exam
Landfill + TS/MRF	\$750 <small>(best value)</small>	Day 1, 2, 3 + Exam
Spotter	\$295	Day 1, 8hr

Refresher		
Landfill	\$495/\$295	Day 1, 2-16 hr or Day 2-8 hr
Transfer Station	\$295	Day 1-8hr or Day 2-8hr
Materials Recovery Facility	\$295	Day 1-8hr or Day 2-8hr
Spotter		Day 1-4hr

*Registration Deadline: 5 working days prior to the date of the course
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Locations/Dates	Other Course of Interest
Plant City ▪ 12/5-7/2017 Gainesville ▪ 1/17-19/2018 Tallahassee ▪ 1/23-25/2018 Daytona ▪ 3/6-8/2018	Fundamentals of Slope Stability & Settlement for Solid Waste Disposal Facilities Spring 2018 Gainesville, FL \$695 CEUs: 2.2 FBPE PDHs 0008637: 22.0; Provider 0004021 Instructor: Robert Bachus, Ph.D., P.E.

Information (352) 294-3880 djenkins@treeo.ufl.edu	Registration Online: www.treeo.ufl.edu Registrar: Sienna Horton (352) 294-3874
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The Impact of Smart Technologies on the Florida Waste Market

Marc J. Rogoff, Ph.D. and Ian Spurlock, E.I.

The solid waste industry has in recent years embarked on a quest to include “smart technologies” in everyday processes and programs. The objective for most municipalities and private haulers in Florida is to provide their services, cheaper and quicker, to their customers. Here are some types of technologies that have been implemented to date and others which are only showing up on the drawing boards of technology designers.

Waste Collection

Automation

Rather than slogging through rain and high temperature environments, operators of automated refuse collection systems spend their shifts in climate controlled comfort. The reduced physical requirement increases the diversity and longevity of the workforce that is able to collect waste. Automated collection has proven to significantly reduce collection worker injuries resulting in reduced workers compensation costs, decreasing disability claims, decreasing the number and cost of light duty assignments, and reducing salary fringe benefit costs in the future.

Driverless Collection

The next phase of automation for solid waste collection appears to be “self-driving trucks”. That is, trucks that can navigate, stay in their lane, and slow or stop in response to traffic conditions completely without human intervention. What seemed futuristic and 30 or 40 years off into the future is now upon us. Currently in Sweden,

collection trucks are driving the streets without drivers. Meanwhile in the U.S. alone, waste collection vehicles are involved in thousands of crashes a year, resulting in many fatalities. Virtually all of these incidents can be traced to human error. The potential savings in lives, property damage and



Figure 1 - SCS eTools landfill gas monitoring equipment.

exposure to liability will eventually become irresistible to both public and private waste haulers.

Customer Accounting Software

Accounting software is currently used by public and private operators to help in logistics, dispatch, manage customer communications and contracts, as well as billing and payments. When these accounting software tools are integrated with some of the smart technologies discussed in the paragraphs above, the

organization can use the “Big Data” generated by these software programs to create efficient workflows and set efficient pricing for waste management services.

Route Optimization

Since its introduction in the early 1990s, innovative route optimization technology has been used throughout the U.S. by both private and municipal operations to streamline solid waste collection and monitor fleet performance. Saving on significant operating expenses like equipment costs, labor and fuel drives the need for waste collection operations to increase efficiency by reducing the number of routes, labor hours and mileage through route optimization technology. The three benefits of solid waste routing include improving efficiency, potentially reducing the number of vehicles out on the road and also future replacements, and improving morale through balancing routes across a solid waste collection system.

Smart Electronics

Collection vehicles are not easy to maneuver and this is in part responsible for the 6,000 or more accidents that they are involved in every year. To solve this driver safety issue, companies like Waste Pro are installing high tech camera systems in all of their vehicles. The 3rd Eye camera technology provided by Alliance Wireless Technologies (AWTI) enable a 360-degree external video system, which Waste Pro has installed on its 1,800-vehicle fleet.

Municipal solid waste departments and private waste management

companies are increasingly buying radio frequency identification (RFID) tags and embedding them in solid waste and recycling bins. An RFID tag is like a barcode that can transmit its identifying numbers as a radio signal. This means that it is not necessary to see an RFID tag or even be close to it to scan it, as opposed to a barcode, which must be scanned with a handheld reader. The data on an RFID tag is a series of numbers that can store the name and address of the trashcan's owner as well as other information.

Material Recovery Facilities

MRF design has evolved over the past several decades due to a number of important drivers, principally changes in governmental policies and expanding recyclables markets. To improve the quality of the products recovered from the recyclables stream, MRFs have become more highly automated as well as increasing in design throughput capacity. Recent surveys of the recycling industry have shown more reported application of optical scanners, drum and eddy current separators, and air classifiers, as well as increasing retrofits of dual-stream systems to handle single-stream recyclables.

Industrial robots have increasingly taken on routine tasks of many operations in a variety of manufacturing situations as well as in surgical settings. More advanced robots are gaining sensors and software, allowing them to perform non-routine manual, repetitive tasks such as welding, cutting and suturing. As previously mentioned in the discussion, most MRFs already use a combination of advanced sorting technologies followed by hand separation.

Landfill Operations

The life of a landfill is dependent on three things: the volume of the permitted landfill, the amount of waste received and the density to which the waste is compacted. The compaction is the variable that is most readily influenced by the landfill operators. For this reason, many landfills have their active area surveyed anywhere from once a year to meet regulator demands to as often as monthly to assess the compaction that is achieved. Before GPS surveying equipment became available, it was prohibitively expensive and time consuming to survey frequently.

However, with GPS survey equipment more readily available and less expensive, having the active area of a landfill monitored on a monthly basis is not out of the question anymore. For landfills that are owned by a municipality and operated by private companies, it is common to require the contracted company to meet a required level of compaction on a monthly or quarterly basis. Once gathered, the GPS data is analyzed to confirm that the requirements were met.

GPS systems are used in many ways at landfills today. Adding GPS to the heavy equipment itself can pay huge dividends, increasing compaction and therefore revenue. In the future, drones will see even more use in the world of landfills, taking progress photos, performing monthly surveys using LIDAR and GPS, flying programmed paths to monitor remote locations of the landfill and much more.

Environmental Monitoring

Automation is not limited to groundwater or compactors; the whole landfill gas collection system can be automated as well. Several

companies offer "well-mounted" wireless sensor and control systems that feature a whole range of options when paired with one of their software applications. These systems work in real time and can show everything from flowrate of each individual well to the gas composition on each well in the collection system. This level of automation can significantly reduce the number of hours and personnel required to monitor and control a landfill gas system.

Automation is going to become more prevalent in the next few years, but one of the new challenges will be in adapting to managing an application aiming to assist facilities with their data management as automation gains ground. SCSeTools and similar applications (Figure 1) assist in collecting, storing, and managing data with the end goal of helping the facility become more efficient. This type of web-based application provides an around-the-clock, nearly real-time view of the systems it monitors and controls.

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Ian Spurlock, E.I., is a project professional with SCS Engineers in their Tampa regional office.

Landfill Leachate Collection Pipe, SDR 11 vs. SDR 17 HDPE

Ali Khatami, Ph.D., P.E., SCS
Engineers

High-density polyethylene (HDPE) pipes have been used for landfill leachate collection and conveyance lines for several decades because of the chemical compatibility of HDPE material with many different types of liquids and chemicals.

Designing a leachate collection system for a landfill disposal cell involves numerous engineering analyses of different components involved in collecting and conveying leachate.

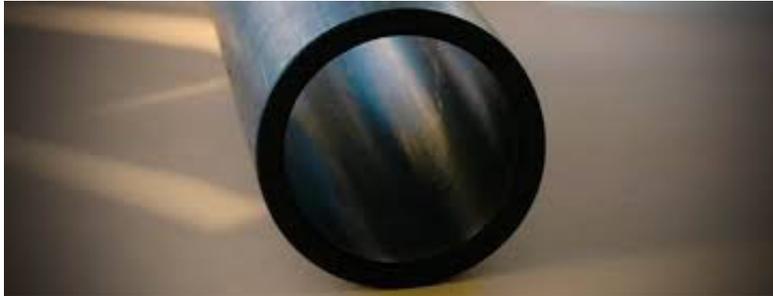
One of the important engineering evaluations is a determination of structural stability of HDPE leachate collection pipes at the bottom of the landfill.

Structural Stability of HDPE Pipe

Modern landfills are gradually becoming larger and deeper; deeper landfills will naturally impose a higher surcharge loading on the HDPE leachate collection pipes below the waste column. Engineering methodologies for the structural stability evaluation of HDPE pipes with significant surcharge loading have been around as long as HDPE pipes have been in production.

There are three criteria used when evaluating the structural stability of HDPE pipes; wall crushing, wall buckling, and ring deflection. Wall crushing can occur when the stress in the pipe wall, due to external vertical pressure, exceeds the compressive strength of the pipe material. Wall buckling, a longitudinal wrinkling in the pipe wall, can occur when the external vertical pressure exceeds the critical buckling pressure of the

pipe. Ring deflection is the change in vertical diameter of the pipe as the pipe deforms under the external vertical pressure. Empirical formulas by HDPE pipe manufacturers or other researchers are available to check each criterion.



SDR 11 vs. SDR 17 HDPE Pipe

One of the parameters that HDPE pipes are identified by in the market is the standard diameter ratio (SDR). SDR is the ratio of the outside diameter to the wall thickness. For a specific outside diameter pipe, the thicker the wall thickness, the lower the SDR value, which means a SDR 11 pipe has a higher wall thickness than a SDR 17 pipe of the similar outside diameters. When a structural stability evaluation involves high surcharge loading on the pipe, an engineer may automatically select SDR 11 HDPE pipe without going through an evaluation process. The engineer's reasoning is that the higher wall thickness of SDR 11 pipe, as compared to SDR 17 pipe, is the logical choice because it provides a higher level of structural stability to the pipe. In the case of wall buckling and wall crushing, where the pipe strength in these two criteria is inversely proportional to the SDR value, the engineer is making the right choice. The strength is greater for

the lower SDR value that represents thicker pipe wall thickness; making SDR 11 stronger than SDR 17.

However, in the case of ring deflection, the pipe strength is not a function of SDR, but a function of another parameter called allowable ring deflection. The allowable ring

deflection value varies from one SDR to another and is generally reported by pipe manufacturers. The allowable ring deflection for SDR 17 pipe is generally greater than all other SDR pipes, which makes SDR 17 pipe stronger when considering ring

deflection. SDR 17 pipe is also the most commonly used HDPE pipe in the landfill industry, being lighter in weight per unit length of the pipe than SDR 11, thus making it less expensive than SDR 11 pipe.

Which is Best for My Landfill?

It is recommended that landfill engineers consider SDR 17 pipe as the first choice for use as a leachate collection pipe below the waste column, and then other SDRs if SDR 17 does not pass the three structural stability criteria mentioned above.

For more information, call (561) 441-1473 or e-mail akhatami@scsengineers.com.

Thermal Mass Flow Meter for Gas Projects



*Ramon Rivera,
Diamond
Scientific*

Biogas is natural gas that is produced as organic matter naturally decomposes. Biogas is comprised largely of methane (around

50%) and to a lesser degree carbon dioxide, but may also have traces of other gases such as nitrogen and hydrogen sulfide present. However, the composition can vary from 35 to 70% methane and 30 to 65% carbon dioxide, both of which are greenhouse gases.

Because of its rich methane content, biogas is recognized as a valuable source of natural energy which can be extracted as a byproduct from landfill operations, wastewater treatment facilities, anaerobic digesters, and waste-to-energy plants that use biodigesters to convert animal and plant waste into energy.

Whether operations managers wish to recover the gas produced on site and use it as an energy source, or record atmospheric emissions of flared gas for environmental reporting purposes, biogas flow rates need to be accurately measured and recorded. Thermal mass flow meters offer a reliable and cost-effective method of achieving this.

Monitoring, recovering and flaring landfill gas, a landfill gas recovery system consists of a network of pipes and wells that serve as extraction points from where landfill gas can

be recovered and used as a source of energy, or for safety reasons it may be flared to prevent gas buildup on site or gas migration offsite. While it is a good idea to monitor flow rates at each individual well, this can be prohibitively expensive. But it doesn't necessarily have to be. By using a thermal mass flow meter to monitor flow rates, operators can collect accurate information that is comparable to that collected by using personnel and portable flow meters.

When selecting a flow meter to measure the flow rate of gas, there



are several standards that need to be considered, as outlined below:

- The flow meter selected needs to be calibrated according to the composition of gas—i.e., calibrated for a mixture of methane and carbon dioxide
- There is no need for temperature

and pressure control, only accurate measurement of thermal mass flow.

- Look for a flow meter that has no moving parts as this reduces maintenance requirements.
- To ensure accurate, repeatably consistent readings across a wide range of fluctuating ambient temperatures, the flow meter should allow temperature compensation.
- The flow meter should be capable of measuring both high and low flow rates accurately, and should be highly sensitive to low flow scenarios.
- It should have a graphical interface that displays the flow rate, total flow measurement, as well as temperature.
- To ensure the data collected complies with environmental regulations for measuring atmospheric emissions, the flow meter should have a built-in calibration mechanism to confirm the sensor and transmitter are accurate and functioning correctly. This is particularly important when measuring biogas, which is often wet and dirty, as sensors can malfunction if they get clogged up with dirt and moisture.

In conclusion, thermal mass flow meters assist in achieving combustion efficiency and energy management through accurate and repeatable measurement of gases. Therefore, reducing energy consumption to optimize the combustion control on furnaces, industrial boilers, steam generators, ovens, smelters and process heaters.

Ramon (Ray) Rivera is CEO of Diamond Scientific. He can be reached at (321) 223-7500 or e-mail info@diamondsci.com.

Fueling Florida's Landfill Industry: Converting Landfill Gas to Energy to Reduce O&M Landfill Facility Costs

Mark Hadlock, PE, Tobin McKnight, PE, BCEE, and Joel Woolsey, Jones Edmunds & Associates, Inc.

Converting landfill gas (LFG) to compressed natural gas (CNG) vehicle fuel has been technically viable for many years, with some of the original conversion projects dating back to over 25 years. Since that time, the interest in and commercial marketing of generating CNG from LFG have increased dramatically, yet the number for projects in the U.S. remains small, with just a handful of projects across the country.

These projects are also normally small, typically using 50 to 200 scfm of LFG, which is a fraction of the LFG potentially available at modern landfills. With Title V Air Operations Permits that require landfill facilities to collect and destroy LFG, the LFG delivery system is in place to feed the conversion plant without the expense of installing LFG collection and control system; this reduces the initial investment in the conversion to a minimum. This approach has been used with great success in developing many LFG-to-electricity plants across the country. Electrical conversion has been successful largely because landfills have electrical service and can typically be modified with minimal expense to receive the energy back from the plant. For CNG conversion, however, typically no immediate use for the energy is apparent, and the end use needs to be developed in parallel with the CNG plant.

The amount of diesel or gasoline of gallon equivalent (DGE or GGE) that can potentially be generated from CNG plant may far exceed local market use or the need for the CNG. The LFG-to-CNG conversion rate is approximately 500 DGE per day for every 100 scfm of LFG. For example,



Sideview of the Landfill Gas to CNG Conversion System (BioCNG, LLC)

a modern landfill that accepts 750 TPD of MSW could be reasonably expected to collect 1,500 scfm of LFG, which has the energy potential to produce approximately 8,000 DGE per day or 2.5 million DGE per year. As a result, many CNG projects use only a small amount of the total available LFG, resulting in the need for an additional utilization project to use the remainder of the LFG. Multiuse LFG utilization projects require large capital investment and are typically only used at very large landfills. A utilization option that is able to consume the entire amount of LFG is a high-BTU conversion plant where most of the CNG produced is added to a natural gas pipeline with the ability to draw off CNG for vehicle fuel as needed; however, this option includes a unique set of complexities.

The time and expense needed to develop a market for the CNG may exceed the complexity and cost of the CNG plant itself. Conversion of heavy equipment, transfer trucks, and other commercial hauling vehicles to CNG fuel is the most common use of CNG and requires considerable initial investment. Vehicles powered by CNG may range from \$20,000 to \$40,000 above the cost of traditional diesel-powered vehicles. Although changing to CNG-powered vehicles offers many tangible benefits, and possibly rebates, to help offset the initial cost, in most cases it requires several years to fully modify a fleet to CNG. This need to balance production to meet demand creates the need for the initial development of a small CNG project that can be scaled up as demand increases. If these difficulties were not enough to limit the interest in CNG

produced from LFG, the reduced cost of diesel further diminishes potential revenue from fuel sales and the low cost of natural gas encourages CNG vehicle fuel projects directly from natural gas pipelines rather than from LFG. Many of the most critical variables needed for a successful CNG utilization project are beyond the control of the landfill owner and result in too much uncertainty and risk for local governments to develop a CNG project.

However, all necessary events for making CNG from an LFG project viable can occur, as may be the case for the New River Regional Landfill (NRRL). Because of a series of planned and unexpected events, the conditions for the development of a CNG project at NRRL are currently

favorable. Over the past years, several LFG utilization projects have been attempted at NRRL including a high-Btu pipeline and several electrical generation plants. In all cases, economic and regulatory changes resulted in the third-party vendor withdrawing their offers for financing or virtually eliminated revenue sharing with NRRL.

The limitations in the energy markets and traditional dependence on third-party-developer financing was effectively eliminating the options for the development of an LFG utilization project that would meet the high expectations set by NRRL both in value and progressing innovation. As a result of the lack of a suitable traditional commercial project, an out-of-the-box solution was needed to advance the project that has been in limbo for more than 10 years. With the availability of over 1,500 scfm of LFG at NRRL and viable CNG conversion technology, the remaining pieces to the puzzle were the need for a reliable CNG market, economic viability, and capital cost financing, all items that the Owner typically has limited control over.

In evaluating the potential CNG market, it became obvious that two major consumers existed at NRRL's doorstep. Although NRRL is in a very rural part of the state, it is on a regionally-important east-west corridor that serves the City of Jacksonville and a considerable amount of industrial facilities. Major trucking companies have a large quantity of daily deliveries that directly pass NRRL with a round-trip distance within the range of CNG-powered trucks. NRRL also has road frontage property that can be developed into a large CNG fueling facility. The trucking companies have been very receptive to the prospect of a 24-hour, fast-fill CNG fueling station at NRRL. This market offers the possibility of the need for immediate,

small-to-moderate quantities of CNG fuel and long-term growth as the trucking fleets are converted to CNG.

In addition, NRRL and Alachua County have been evaluating the possibility of NRRL developing a CNG plant in partnership with



Overview of the Landfill Gas to CNG Conversion System (BioCNG, LLC)

Alachua County. The County transfers approximately 600 TPD to NRRL for disposal, which requires 40 truck trips per day and 190,000 gallons of diesel per year. The possibility of using CNG-powered transfer trucks presents several advantages to Alachua County and NRRL. For Alachua County, benefits include reduced fuel cost, a 10-fold reduction in Greenhouse Gas Emissions, reduced O&M costs, and a secure source of fuel. The reduction in Greenhouse Gas Emissions from this project alone exceeds Alachua County's goal for reduced emissions from County vehicles. The benefits to NRRL are also numerous, including the longtime goal of the development of an LFG beneficial reuse project, reduced fuel costs, revenue from the sale of CNG, a strengthened relationship with Alachua County, the potential for additional commercial sales of CNG, and fuel independence.

The economics of the CNG project are significantly improved by the availability of the USEPA Renewable Fuel Standard program that provides incentives for using renewable transportation fuels. Renewable fuels are assigned an USEPA Renewable Identification Number (RIN) that is similar to carbon credits that are bought and sold as commodities. The value of RIN credits have been relatively stable and are currently valued at approximately \$1 per DGE, which is approximately 50% of the cost to create CNG fuel and offers a significant incentive. The estimated cost to produce a DGE of CNG varies from \$1.75 to \$2.20 per DGE, largely depending on the size of the project. The current cost of bulk diesel used by NRRL and Alachua County is approximately \$2.50 per gallon.

The economics of the project have been developed using conservatively low RIN credit values and low revenue for the sale of CNG and conservatively high production costs. Even with this conservative approach, the financial model predicts an economically successful project; however, until the market for the CNG is developed, the economics of the early years of the program will be tight. The typical private developer requirements for early return on investment would tip this balance into the negative and as a result make a poor capital venture. The expected initial capital cost of the 200-scfm CNG plant, storage, and fast-fill fueling station is approximately \$3 million. To solve this final piece of the puzzle, NRRL is in the unique position to be able to self-finance the project and does not need to rely on third-party developers. This independence gives NRRL unmatched flexibility to implement and modify the project as needed to provide the best value and service to itself and CNG customers.

Continued on page 16

An additional benefit of a CNG project that was discussed but never really considered tangible was the concept of reduced reliance of commercial fuel sources. The value of fuel independence was dramatically demonstrated before, during, and after Hurricane Irma. Fuel shortages in North Florida started a week before the storm and continued for a week or more after. Hurricane Irma's unprecedented destructive power resulted in never-before-anticipated demands on critical resources by the general public and local governments. Emergency services for the NRRL county members—Union, Baker, Bradford, and surrounding counties—all experienced fuel shortages that threatened to undermine emergency operations. NRRL has a sizeable fuel storage facility that was used as the fueling source for many emergency providers in the local area, but this resource is limited and depends on commercial sources. An NRRL CNG plant could provide ongoing fuel production with essentially no limitations in duration; this has become apparent to NRRL and is consistent with the Governor's initiative of developing strategically-located fuel reserves throughout Florida. Commercial trucking companies also recognize this value and the business advantage it allows them to offer their customers.

Although much work remains to reach fruition, the project has cleared the initial hurdles that eliminate 99% of CNG projects. If successful, this will serve as a model for future CNG projects in Florida.

For more information, contact Mark Hadlock, PE, Senior Engineer at Jones Edmunds & Associates, Inc., at (352) 377-5821 or e-mail mhadlock@jonesedmunds.com.

Making the Push to 75%: Low-Tech Composting Solutions

Darren Midlane, Harvest Quest

The deadline for Florida's 75% recycling goal is rapidly approaching. Cities and counties need to make significant strides to divert additional material from landfills, and especially focus on untapped materials like organics (food waste, yard waste, and non-recyclable paper). Also, the 2017 hurricane season is a powerful reminder that we need new recovery alternatives for storm debris.

Now is the time for our materials management systems to get on the organics recovery bandwagon! Three factors highlight why this is such a great opportunity and how best to capture it.

1. First, organics account for 30% to 40% of MSW disposed by Florida communities and, for many, food waste alone is over 20% of the MSW. In 2016, only 8% of that food waste was recovered!

2. Second, Florida regulations facilitate composting. They provide the opportunity to compost source-separated food waste from commercial sources (like grocery stores, food

manufacturers, restaurants, hospitals, etc.) with nothing more than an annual registration and commitment to follow basic environmental and public health procedures.

3. Third, the statewide average tip fee is approximately \$45 per ton. Avoided disposal costs are an important benchmark for assessing the economic

viability of organics recovery.

These three factors mean that low-tech and cost-effective composting methods—like windrow composting—can be implemented throughout Florida. Florida's yard waste and storm debris typically need to be combined with wet, putrescible materials to optimize the composting process. In addition to food waste, biosolids are a great feedstock that can be paired with yard waste.



For proof that composting is right for Florida, consider existing private sector composters. They naturally seek cost-effective, financially-sustainable solutions. Florida has great examples of food waste, biosolids and yard waste windrow composting. Bay Mulch in Plant City, with capacity to compost 100 tons per day of food waste. Waste Management's Okeechobee facility uses yard waste

results with a large-scale pilot project, Hillsborough County is now developing a full-scale windrow composting facility due to start-up in late 2018. Pinellas County recently started a pilot project composting food waste and yard waste seeing a major opportunity to increase recovery, produce valuable compost, and improve the operations at its waste-to-energy facility.



to compost both food waste and biosolids. CompostUSA operates a 60-acre windrow facility in Sumter County producing many custom compost blends for special agricultural and horticultural markets.

On the public-sector side, there are numerous examples as well. Emerald Coast Utilities Authority (ECUA) is doubling its composting capacity in order to lower its biosolids and yard waste management costs and meet growing demand for its Bloom® compost. Based on very positive

To summarize, we live in exciting times! Cost-effective composting methods are right at hand that can dramatically increase recovery rates. And composting has even broader, positive effects on our communities—including potential to reduce greenhouse gas emissions, sequester carbon, and recycle nutrients to support sustainable agriculture. If you really want to hit 75%, composting is an essential piece of the solution.

For more information, e-mail dmidlane@harvest-quest.com.



Advertising Opportunities Available

It's not too late to reserve a space in the Spring issue of Talking Trash.

Job Openings

Post an employment notice on the SWANA FL website for just \$100!

Email info@swanafl.org or visit www.swanafl.org for more information.

New Technology Can Reduce Operating Costs in the Waste Industry

Leslie A. Rubin

In today's connected world it shouldn't be a surprise that the Internet of Things and other technologies are beginning to make big impacts in the way we manage solid waste collection and recycling. This is about more than empowering customers to manage their accounts and make payments online. It includes using smart technology to improve efficiency in human resources, consolidating purchasing, optimizing operations, and managing environmental concerns. Some of these changes result in cost savings while others simply help

meet community service level and sustainability goals.

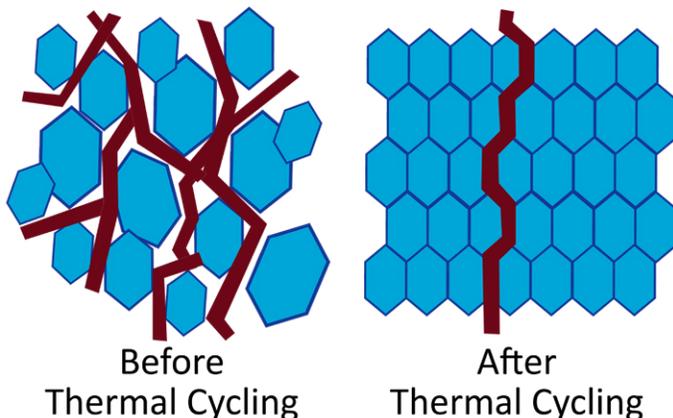
A new technology, thermal cycling, is proving to reduce costs in fleet management and landfill operations with an additional benefit of improving safety. The application of this patented process on high wear brake components like rotors, drums, shoes, and pads has extended the serviceable life of these parts up to six times longer than untreated ones for a small Florida municipal waste collection department, which has been using it for several years now. "We save money on parts and service, since brake components that previously

needed replacing every 4 months now last 24 months or longer," according to the municipality's waste division manager. This process can also be used to extend life of costly, high wear parts on equipment in landfill operations.

The thermal cycling process involves a series of cooling cycles—carefully computer-regulated for specific materials and products being treated to optimize their granular structure. It takes approximately 40 hours for the entire treatment cycle to run on most materials. Multiple similar items can be run simultaneously for efficiency. The process makes permanent changes

New Technology Can Significantly Reduce Operating Costs and Improve Safety

Treated high-wear brake components on a Florida municipal waste collection department's trucks are lasting up to **6 times longer**



Computer-regulated cooling cycles align the granular structure more tightly

- Less rust and contaminant incursion for longer life
- Faster heat dissipation for cooler operation and less fading



For Information, contact SWANA member
Les Rubin at 727.460.6872
info@bettermetaltch.com
BetterMetalTech.com

in the materials but does not affect the appearance or size of the product being treated. It is not an application that wears off with use.

Thermal cycling works because the granular structure of materials post-treatment is more uniform and dense, making them stronger and more resistant to corrosion and wear. Treated materials also vibrate less and are better able to dissipate heat, which means brake components experience less fading for safer operation.

The process is environmentally friendly. The application of liquid nitrogen, which has been 'borrowed' from the air we breathe, returns it back into the air at the end of the 'green' process. And since parts and equipment last longer, you'll be reducing waste.

Several third-party laboratory tests have been conducted to validate the effects of thermal cycling specifically on brake components. They separately concluded that thermal cycling:

- Changes the microstructure of treated materials, resulting in enhanced wear properties and increased strength¹
- Improves strength and elongation of brake rotor material²
- Reduces loss of brake drum mass and wall thickness³

The application of Thermal Cycling on brake components (rotors, drums, shoes, pads) helps waste collection companies' save on fleet management operating expenses and deliver ROI of an estimated 500% by lengthening the time between service and replacement cycles. Improved safety is a direct

2017 SWANA International Road-E-O Winners

TRUCKS	HEAVY EQUIPMENT
Tractor Trailor 1st – Juan Aybar, FL 2nd – Roberto Ortega, AZ 3rd – Raul Perez, TX	Compactor *1st - Jessie Larsen, UT 2nd - Cody Alexander, PA 3rd - Shane Holm, UT
Front Loader 1st – Rodney Reffitt, KY 2nd – Gabriel Pauda, GA 3rd – Steve Phillips, NC	Dozer 1st - David Kessler, PA 2nd - Brandon Carithers, GA 3rd - James Yount, NC
Side Loader 1st – Tim Jones, FL 2nd – Trey Troxell, KY 3rd – Frank Saavedra, AZ	Loader 1st - Cole Alexander, PA 2nd - Alex Gonzalez, TX 3rd - Brett Korince, FL
Rear Loader *1st – Lorenzo Edwards, FL 2nd – James Deluca, FL 3rd – James Perez, TX	MECHANICS *1st - Steve Roberts, TX 2nd - Michael Taft, GA 3rd - Jeffrey Robinson, FL
Roll Off 1st – Ryan English, NC 2nd – Daryl Matthews, GA 3rd – Shauwn Clark, FL	<i>*Top Gun</i>

result of reduction in fading on treated brakes that operate cooler and more efficiently through better dissipation of heat. Similar cost-saving results should be achieved when Thermal Cycling is used on landfill equipment high wear part.

For more information, contact Principal, TTS Thermal Cycling (Clearwater, FL) at (727) 460-4872.

Notes

¹ Fort Bruce Testing, Inc., Ingersol, ON, Canada, 2013

² Fort Bruce Testing, Inc., Ingersol, ON, Canada, 2013

³ Greening Testing Laboratories, Detroit, MI, 2014

Reflections of a Solid Waste Professional

Periodic recounting of events and happenings – some humorous, some not – during the 30+ year career of Warren Smith, SWANA Florida member since 1980.

A (very) short history of solid waste collection in Hillsborough County, FL.

In the early 1980s, Hillsborough County had made a key decision on the future of its solid waste system. Landfilling would be replaced by waste-to-energy as the primary disposal method. And, it would be expensive. Nearly \$140,000,000 and, at that time, Hillsborough County's largest municipal bond issue. To secure these municipal bonds, the county needed to take actions to "guarantee" payment. One such action was to guarantee the new system's revenues from residential garbage disposal by putting the disposal cost as a fee on the annual tax bill.

Like many counties in West-Central Florida, Hillsborough's solid waste collection had been established by private haulers just "setting up shop" in a geographic area of the county. These geographic areas varied greatly in size and number of customers. To avoid conflict and overlap, the county eventually established a "franchise" for each hauler, and began oversight to assure basic quality of service. Payment for this service was between the hauler and the customer. There was no county mandate for residents to have collection service. (Much of unincorporated Pinellas County still uses an open-market, free enterprise system for residential collection, with some neighborhoods served by two or more providers).

With the advent of capital intensive waste-to-energy, a means to require service and guarantee disposal revenue

became necessary. Other Florida counties (notably Brevard and Palm Beach) had successfully established collection franchises, including mandatory service and payment provisions, and with funds collected via property tax bills. And that was the system eventually implemented by Hillsborough County. Today, the county maintains set franchise areas, with specified levels of service, which are bid every 7 to 10 years.

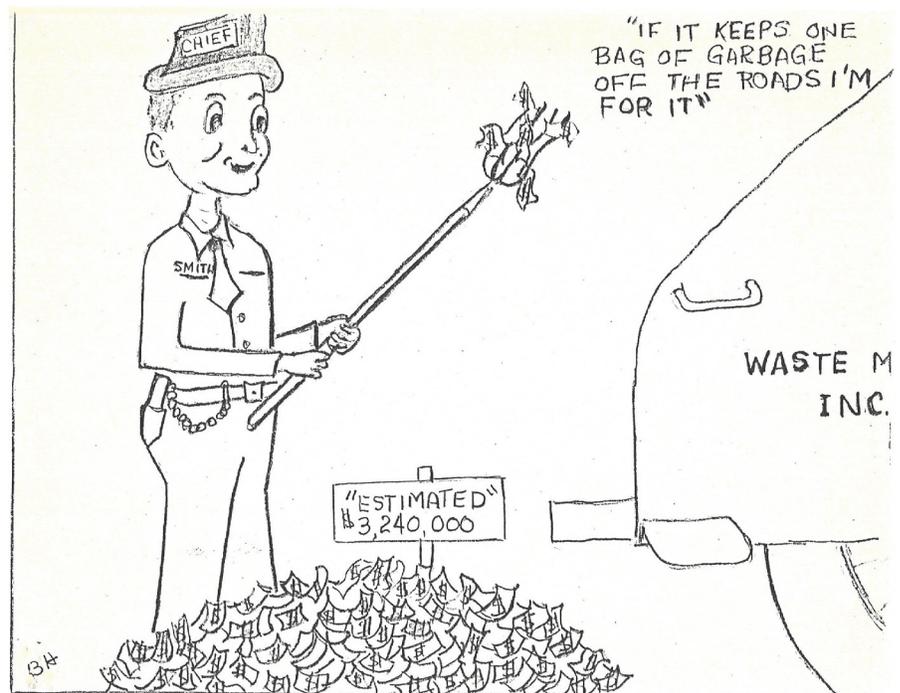
But, getting there was not always easy. Change often isn't. As this new payment concept was rolled out to the elected officials and the public, there were differing opinions. One particular resident aimed his opinions, in some cases, squarely at me! It started with receipt of an unsigned letter, but composed of words cut out from other publications and pasted onto a page (I wish I had saved that for this article). Then came other unsigned letters, and even cartoons. Wow, this was fun! Eventually, the Brandon resident revealed himself, and would sign his

letters, which he sent to many others, including the County Administrator, County Commissioners, and Solid Waste staff. While this Hillsborough County resident's efforts were notable, the county eventually instituted the mandatory disposal fee to provide the required financial security for the bond issue.

One evening at a public meeting, I finally met the letters' author. He really wasn't such a bad guy. He just had a strong opinion about government forcing him to pay for garbage disposal. He sure made the process much more interesting, and exciting, though.

Warren Smith can be reached at (727) 515-0006, or by email wsmithc10@aol.com.

**Thank you to Kim Byer, Hillsborough County Solid Waste Division Director, for reviewing this article.



-ELIMINATION OF HOMESTEAD EXEMPTION-

COUNTY SOLID WASTE DIRECTOR WARREN SMITH PROPOSES PLAN TO BY-PASS CONSTITUTION. HOMESTEAD IS YOUR RIGHT AS A FLA. RESIDENT. LESS THAN ONE MONTH AFTER SALES TAX INCREASE FOR PROPERTY TAX RELIEF YOUR EMPLOY PROPOSES EQUIVALENT OF 1 MIL INCREASE ON \$30,000 (ELIMINATE 1ST \$1500 EXEMPTION IS WHAT IT AMOUNTS TO FOR THE SMALL HOME OWNER). THIS HE CALLS A GARBAGE DUMP FEE. \$30 FEE PER HOUSEHOLD TO BE PLACED ON TAX BILL TO ELIMINATE FEE AT THE DUMP SO PEOPLE WILL NOT DUMP ILLEGALLY! 108,000 HOUSEHOLDS x \$30 = \$3,240,000. IS ILLEGAL DUMPING **RECEIVED** A PROBLEM?

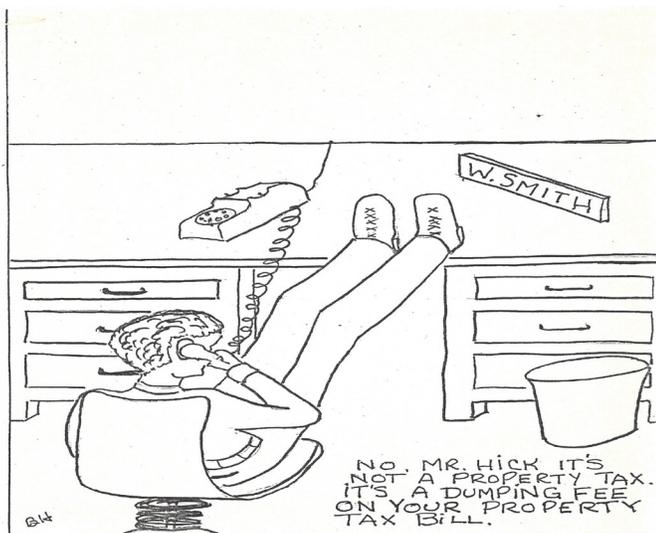
MAY 25 1982

IF YOU ALLOW YOU TAXES TO BE INCREASED UNDER THIS GUISE YOU ARE LOST. HOMESTEAD ALLOWS A SMALL HOME TAX FREE TO THE OLD OR POOR.

WARREN SMITH OPPOSES THAT PRINCIPLE. HE SHOULD BE FIRED!

SEE THAT YOUR COMMISSIONER SUPPORTS HOMESTEAD OR DUMP HIM OR HER!!

BOB



Cartoons received with a resident's letter objecting to the implementation of a mandatory waste disposal fee, by Warren Smith while serving as Solid Waste Director for Hillsborough County, Florida, in 1982.

**UNBELIEVABLE TYRANNY!
COUNTY EMPLOYEES WANT
YOUR PROPERTY RIGHTS.**

HILLSBOROUGH RESIDENT:

Imagine a Public Utility which you cannot disconnect or even conserve on! One which must be PAID no matter what energy cost or inflation does to prices. A utility that must be paid even when you are laid off, sick, or retired on a small pension. A utility that a widow who is forced to go back to work for minimum wage must pay the same price for as administrator Hickey, who makes \$57,325. A utility that is charged for on your tax bill. Pay or lose your property!!!

County officials are at this time pushing for MANDATORY GARBAGE PICKUP. You will be told to do business with a specific private firm. Franchises granted and prices controlled by the County Commission. These charges will be placed on your tax bill.

Please understand this is a new tyranny. You are not now required to use any private firm. No, not TECO! You can turn power off or conserve! Of course, your mother in the mobile home next door will have to pay too! A huge bureaucracy to keep up with everyone!

The proposed rate increase, if passed, would make the new fee \$10.55 per month. \$126.60 on every tax bill. The fee in Polk County is \$5.75 per month. \$4.80 less! NOT MANDATORY!

There is no way to estimate how high this could go. The more inefficient collectors become, the more they make! You well know the evils of the regulated franchise.

1. Large executive salaries.
2. Fine buildings--price no object.
3. Equipment and supply purchases from subsidiaries, no bids.
4. All new equipment--why make do?
5. Lobbies and political action for favorable regulation. Some say bribes!
6. The more their cost, the more their 10% or whatever.
7. High salaries with little work. Why be efficient?

The list could go on and on!!! Any fee on a tax bill is bound to increase. Homestead Exemption was passed during the 1930's to keep people from losing their homes. Shall we now make it impossible for a low income person to own a small home? Shall we forbid a homeowner from hauling his own if need be? Scientists agree that recycling will soon be necessary. Shall we forbid this?

Public Works Director BRUCE DOWNS and Solid Waste Director, WARREN SMITH are pushing for passage of such a law. As long as they work for the County, your home is in danger. Millions are involved! The reason put forth is that illegal dumping would be stopped. Tampa uses helicopters to catch dumpers. A city policeman was just attacked by dumpers! These men can't believe mandatory pickup would eliminate dumping.

Haven't you had enough bad Government? This is an extremely costly answer to a problem that cannot be solved in this way. This will mean windfall profits to collectors and more employees for DOWNS and SMITH. It will mean that you can cut off electricity and phone if you are laid off, but you must pay the garbage bill. You can sell the car and walk, but you must pay the garbage bill.

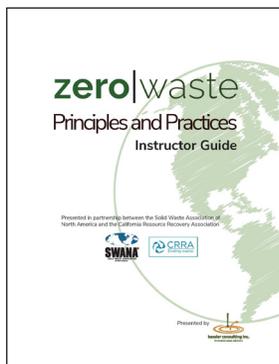
The charges of a private enterprise on your TAX BILL! WHAT NEXT?

Member News

3...2...1...Zero (Waste)

Mitch Kessler, Kessler Consulting, Inc.

The Solid Waste Association of North America (SWANA) and the California Resource Recovery Association (CRRA) recently announced the launch of their new Zero Waste Principles & Practices certification course. The 3-day course explains



the principles on which Zero Waste is based, and covers the various policies, programs, and infrastructure options available to help establish a community- or business-specific Zero Waste system.

The collaborative effort between SWANA, CRRA, and Kessler Consulting, Inc. (KCI), the authors of the course materials, reflects a wide array of expertise and passion for this topic that is reflected in the course materials. The 10-course modules cover upstream, midstream, and downstream strategies for achieving

Zero Waste. This includes policy options, such as extended producer responsibility (EPR), sustainable purchasing practices, mandates, and bans. End-of-life materials management topics include collection options, processing technologies, organics management, contracting and financing.

According to David Biderman, Executive Director of SWANA, the project team “took a complex topic and developed a program that is clear, informative, and provocative.” In July, SWANA hosted a “Train the Trainer Course” taught by KCI staff, which was followed by a beta course taught by the newly-trained instructors. This course sets the standard for Zero Waste planning, and will be used throughout North America to train industry professionals in implementing Zero Waste programs. The Zero Waste Principles & Practices course will be offered during SWANApalooza, as part of the Road to Zero Waste Conference, March 5-7, 2018 in Denver, CO (<https://swana.org/Events/SWANApalooza.aspx>). Additional information about the course and upcoming classes can be found on the SWANA website: <https://swana.org/Training/CourseCatalog/PlanningManagement/ZeroWastePrinciplesandPractices>

For more information, contact Mitch Kessler at (813) 971-8333, or mk@kesconsult.com.

MSW Consultants Adds New Hires

MSW Consultants made three new additions to its consulting and marketing team this last year. Gisele Papadakis joins the Orlando office as the Director of Marketing, bringing 14+ years of experience from the Marketing and Design fields. She will be responsible for MSW Consultants’ Marketing efforts, including web-design, social media marketing, graphic design, and proposal assemble. Charlie Pioli, a recent economics graduate from Northeastern University in Boston, MA, will assist in the operational fieldwork and data analysis for the firm’s various projects. He is passionate about waste reduction, and hopes to immerse himself in the resource management industry. Francesco Canepa is a recent economics graduate of the University of Central Florida with a passion for creating a positive impact on the environment. He previously spent nine months working as a research intern for WasteInsight™, MSW Consultants’ proprietary waste market database. In addition to supporting the firm’s consulting projects, he continues to lead the WasteInsight™ research team where he specializes in analyzing collection and disposal markets and contracts.

For more information, visit <http://www.mswconsultants.com>.

Project Aims to Foster Sustainable Economic Development for Businesses and Communities

The U.S. Chamber of Commerce Foundation and its partners announces that the City of Orlando will serve as the location for its multi-stakeholder pilot project, Beyond 34: Recycling and Recovery for A New Economy. The project aims to increase the current 34 percent recycling rate in the U.S. by providing a scalable model for improving recycling and

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recovery rates. The goal of the project is to help communities, cities, and businesses across the country create a more sustainable future. “Orlando is an ideal city to begin the Beyond 34 project,” said Marc DeCoursey, senior vice president of the U.S. Chamber of Commerce Foundation. “Its strong private sector engagement, innovative culture, and robust sustainability goals were all factors that contributed to its selection. We look forward to engaging with local leaders throughout the project, and we are confident that Beyond 34 will help support the Orlando area’s mission to advance sustainability and economic growth.”

Factors contributing to the selection of the City of Orlando as the pilot



Hunt Briggs, Senior Consultant at Resource Recycling Systems (RRS) discusses opportunities for optimizing recycling programs from across the US and how these can apply to the greater Orlando region.

city location included its high degree of readiness for recycling and reuse system development, community engagement, project partners, and key relationships. “Orlando is committed to reducing our environmental impact and as a result, we have a goal to become a zero-waste community by 2040,” said Orlando Mayor Buddy Dyer. “We’re making significant strides toward that commitment by providing our residents and businesses with the tools and strategies necessary to divert more waste from our



Breakout groups report out to the group of 65 local and regional stakeholders at the Beyond 34 Recycling Optimization Workshop, Sept 19 at the Regional Chamber of Commerce.

landfills, including offering weekly recycling collection, quarterly e-waste drives, free backyard composters to residents, and a commercial food waste collection program that is diverting millions of pounds of organic waste per year.”

The project will be implemented as a private-public partnership between the U.S. Chamber Foundation, RRS (www.recycle.com), the Orlando Regional Chamber of Commerce, and the City of Orlando. RRS will facilitate development of a recycling business plan for the Orlando region and its stakeholders that keeps high-value recyclable material out of landfills. The plan will also identify greater economic reuse opportunities material generated in from commercial, industrial, and residential sources.



Beyond 34 Round Table: Mayor buddy Dyer address stakeholders.

“As the fastest growing region in the country, Orlando has a unique opportunity to show the world how large-scale sustainable growth can be achieved,” said Jim Thomas, executive director of Orlando Regional Chamber of Commerce. “Orlando is already paving the way in sustainability initiatives on a number of fronts including infrastructure, neighborhoods, recreation, transportation, and energy. Business and community leaders here are committed to planning for a sustainable future; we are excited to support the Beyond 34 project in order to equip these business leaders with the tools and resources they need to achieve their sustainability goals.”

The project is made possible through support from the Dow Chemical Company, Republic Services, Target, Walgreens Boots Alliance, and the Walmart Foundation.

More information on “Beyond 34: Recycling and Recovery for A New Economy,” is available at <https://www.uschamberfoundation.org/beyond-34-recycling-and-recovery-new-economy>.

The U.S. Chamber of Commerce Foundation is dedicated to strengthening America’s long-term competitiveness. We educate the public on the conditions necessary for business and communities to thrive, how business positively impacts communities, and emerging issues and creative solutions that will shape the future. The U.S. Chamber of Commerce is the world’s largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations.

For more information, e-mail mtodd@recycle.com.

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We invite you to become a sponsor of Joint Summit 2018. As a conference sponsor, your organization will be recognized as a valued supporter. All general and exclusive sponsors will receive recognition as follows:

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- * On conference signage and in program
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- * On screen prior to the conference general sessions and during all breaks

By actively supporting this event, your organization will benefit by strengthening its prominence as a leader in the solid waste and recycling industries and by increasing your network of contacts and established partners within SWANA FL and Recycle Florida Today.

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- Sunday Welcome Reception - \$3,000 - includes sole recognition at the reception and one full-conference registration
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- Conference Bags - \$1,500 - includes logo on bags that will be distributed to all attendees
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EXHIBITOR OPPORTUNITIES

Enhance your product awareness and brand recognition! Increase your sales and outreach capabilities!

Don't miss this opportunity to showcase your products and services during the 2018 Joint Summit. The program will take place at the B Resort and Spa in Lake Buena Vista, Florida, January 28-30, 2018.

- **Act quickly!** There are limited table-top exhibit spaces available.
- Table-tops will be located in Grand Ballroom II-V, which is adjacent to the general session room.
- Welcome reception, continental breakfasts, lunch and all morning and afternoon breaks will take place in Grand Ballroom II-V.
- Table number/location will be assigned based on registration date. Register early for placement in high traffic areas!
- All display materials must fit on top of 6' table. Exhibitors may not move tables to make room for large displays.
- If you register by December 29, table-tops are only \$550 for members and \$750 for non members.
- Each exhibitor registration includes one full-conference registration. Each additional person at the table/booth must register for the conference separately.

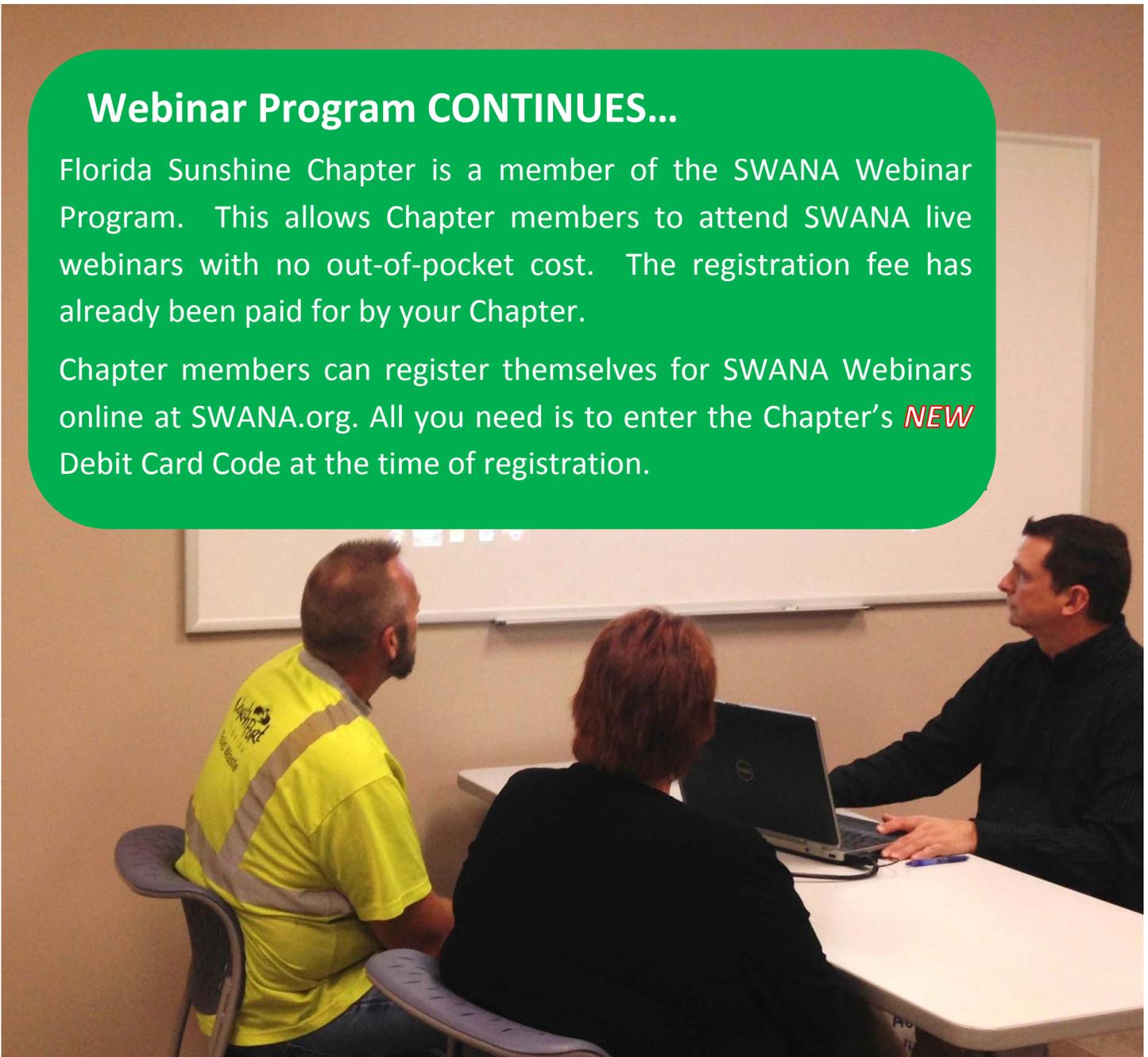
To become a sponsor or exhibitor, please register online at www.regonline.com/2018jointsummit.

Registration deadline for sponsors and exhibitors to be included in participant materials and on signage is January 5, 2018.

Webinar Program CONTINUES...

Florida Sunshine Chapter is a member of the SWANA Webinar Program. This allows Chapter members to attend SWANA live webinars with no out-of-pocket cost. The registration fee has already been paid for by your Chapter.

Chapter members can register themselves for SWANA Webinars online at SWANA.org. All you need is to enter the Chapter's **NEW** Debit Card Code at the time of registration.



Visit <http://www.swanafl.org>.
Webinar Program information
is under "Committees/Training."

*Limited number of registrations
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SWANA Florida Sunshine Chapter has purchased credits/registrations in the SWANA Webinar Program for member use. To use, members need only:

- Select live webinar from SWANA's offerings.
- Register and enter Florida Chapter code listed below.

Visit

<https://swana.org/Education/eLearning/ChapterWebinarProgram.aspx> for more information.

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To allow as many members to benefit as possible:

- View the webinar in a large room and invite others from your agency to attend.
- Coordinate with other smaller agencies to host a webinar viewing. Dorothy Couch, Bridges BTC, will help with coordination: dcouch@mybridges.org, 321-494-6848.



educate

When a group views a SWANA Webinar through the Chapter Webinar Program, all attendees can receive Continuing Education Units (CEU's). To apply for CEU's:

- Provide a sign-in sheet to certification@swana.org.
- Include the webinar title and date, name of the person who registered to receive the logins, and the name and SWANA ID Number of each of the participants.

SWANA's Training Department will allocate CEU credits for SWANA Certified professionals who attended the webinar and are verified Chapter members.

NEW Florida Chapter Webinar Program

Debit Card Code is: **FL150617**

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Upcoming Events

2018 SWANA/RFT

Joint Summit

January 28-30, 2018

B Resort and Spa
Lake Buena Vista, FL

2018 SWANA FL

Summer Conference

July 15-17, 2018

PGA National Resort and Spa
Palm Beach Gardens, FL

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