

The Newsletter of the SWANA Florida Sunshine Chapter

Summer 2020



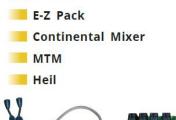
Facility Spotlight: Sarasota Central County Solid Waste Disposal Complex



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Letter from the President

August 2020

It's starting to sound like old news but what crazy times we live in. I can still recall the paradigm shift that occurred right around St Patrick's Day and things have not been the same since. At the time I was on an assignment and the flight there was full. For my return trip a few days later, there were 5 people on the plane and the airport felt like a ghost town. The solid waste industry is no stranger



to paradigm shifts like we have seen since the onset of COVID-19. Often, these come with regulatory changes. Fortunately, these regulatory shifts take time to develop, incorporate industry and public comments, debated, rewritten and ultimately promulgated at a date certain in the near future. The one that sticks out in my mind was Subtitle D. As a young engineer in the Midwest, the permitting and development of landfills seemed like the Wild West. Landfill operators were bemoaning the need to build liners. In the Midwest, that typically meant a 3 foot compacted clay liner overlain by a 60 mil HDPE liner. I recall one client who needed us there to survey his limits of waste up to the day before Subtitle D kicked in. A one foot layer of waste doesn't seem like landfill development but under the rules at the time in that state it was permitted. Fast forward to today and landfill construction with liners and leachate collection systems are the norm and the practices of the past have long been closedlikely with a synthetic cap. It's worth noting that even before Subtitle D, there were facilities that were installing liner systems. With the promulgation of the regulation, everyone was required to adopt the new norm.

As you can guess, the purpose of this story is that our industry has had moments when we needed to pivot and work under a new norm. Subtitle D, NSPS, MACT, 75% recycling, biosolids disposal restrictions ... PFAS? The current situation has forced us to do what we always have done-talk to each other, seek advice and counsel, learn from others' experiences and improve what we do as an industry each day. SWANA has always been a source of information to improve our practices. We are now challenged with a lack of interpersonal activities to a remote scenario. One of SWANA's biggest events, SWANApalooza, went virtual. We are seeing this happen on a local level as well. Our chapter is working on delivering virtual events to continue our role in sharing information between members to improve our industry. Today more than ever, we have the opportunity to use tools that have always been available to us, be that SWANA forums, technical divisions and committees, or simply reaching out to your peers. I am encouraged when I open the daily SWANA Open Forum Digest and see Florida Chapter members engaged in the conversation. Solid waste is an essential service and we as an industry are keen

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Chapter Officers and Directors

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Impacts on Waste Generation Rates in Florida due to COVID-19

Tobin McKnight, PE, BCEE, Jones Edmunds

COVID-19 has impacted nearly every aspect of our everyday lives. Starting in March, the entire nation effectively shut down for 6 weeks. School and work transitioned to home, restaurants went to take-out only, bars shuttered, and tourism all but ceased, while our essential solid waste workers were required to carry on with necessary duties. Much focus in the solid waste industry has appropriately been on how to provide uninterrupted service while keeping its workforce safe, but 300,000 less has been written regarding the secondary 250,000 short- and long-term impacts to the solid

The pandemic's impact on solid waste generation rates (tonnages) are one specific measure of particular interest to local governments, landfill operators, haulers, and the various enterprises that support the industry. With such a significant change to daily activities, the initial expectation was that tonnages collected

waste industry.

and solid waste management facilities would be affected. Local government solid waste programs are typically enterprise funds, and tonnage is the primary revenue source for landfills. Disruptions to tonnage have significant implications on operations, staffing, future capital projects, and, in the case of private landfills, profits.

For some historical context, we can look at the economic impacts of the Great Recession and the impacts on tonnage. The Great Recession officially lasted from December 2007 to June 2009¹ and resulted in tonnages decreasing as much as 30 percent; however, the economic recovery and the impacts to our industry lasted many years after the recession ended. In Florida, tonnages did not return to the 2007 levels until 2015. The impacts resulted in among other things—lost revenues, budget cuts, additional landfill lifespan, deferred capital expenditures, and loss of human capital in the industry. From July 2009 to February 2020, we have experienced the longest period of growth in our history. Now, the questions in the minds of many solid



Figure 1 Year-over-Year Tonnage 2019 and 2020 Year-to-Date.

waste decision-makers during the pandemic are:

- What will the pandemic's impacts be on tonnage and revenues?
- What will the recovery look like?

To begin to answer these questions, we compiled recent tonnage data from several County solid waste programs in Florida to assess the immediate impacts to tonnages. The County solid waste data that were reviewed represented approximately 20 percent of the total waste managed in Florida and ranged from small, rural counties to large urban, coastal counties. Based on local- and state-imposed restrictions and stay-at-home orders, changes in behaviors resulted in shifts in residential, commercial, recycling, and yard waste since March. Some counties reported increases, others reported decreases. Comparing the gross year-over-year total tonnage by month in Figure 1, the first quarter of 2020 started 5% greater than 2019; however, the effects of stay-at-home orders reduced tonnages by 5% in April and May. This is generally to be expected with less economic activity and the decrease in tourism, and it is

> perhaps surprising that it was not a larger decrease. June data were not available at the time of writing, but with phased reopening underway, the tonnage decreases are expected to be erased.

It was widely reported that residential tonnage increased² as a result of stay-at-home orders; however, much of the coverage does not discuss changes in commercial waste. For the Counties that provided data for commercial and residential waste, residential tonnage

clearly increased for March to May, while commercial tonnage decreased, in some cases as much as 20 to 30 percent. This makes sense from the standpoint of less eating out, shopping, and fewer events, while more meals were prepared at home, more online shopping occurred, and the 'spring cleaning' phenomenon accounted for increases in solid waste and yard trash. Figure 2 shows data from Counties that provided data differentiated between residential and commercial.

A subtler result of the shift from less commercial to greater residential waste are the impacts on revenues.

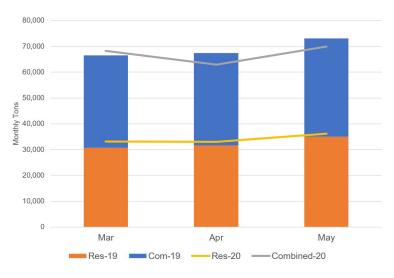


Figure 2 Residential and Commercial 2019 to 2020 Comparison.

Generally, residential collections and disposal are funded by fixed property tax assessments or utility payments, and disposal facilities are paid by the ton for commercial waste. The increase of residential tonnage and decrease in commercial tonnage seems to have yielded nearly the same total amount of waste with less revenue from commercial waste. Pressure will possibly be on haulers who may be incurring additional residential collections with fixed household collection rates and less revenue from commercial accounts. Whether the commercial-residential tonnage shift is temporary or if the shift will be lasting remains to be seen, but a longterm change may strain solid waste programs and haulers.

Much has been written speculating about the long-term economic recovery from COVID-19. Economists have described the ultimate recovery in an alphabet soup³ of models (Z, V, U, W, L, and the Nike swoosh) that describe the speed of economic recovery. The consensus seems to be that the economy will rebound quickly once an effective vaccine is widely available. The good news is that tonnages appear to be minimally impacted and the enterprise funds remain mostly insulated from other tax revenue shortfalls that will be seen. However, in the short-term, the potential losses of revenue may require the kinds of adjustments that

some local governments are already making in collections and recycling in expectation of budget shortfalls. Solid waste decision makers should be mindful of the potential revenue shortfalls and be prepared to adjust, while planning for a quick recovery, with what seems to be a relatively small impact to tonnages that will require continued capital project development.

Tobin McKnight, PE, BCEE is the Solid Waste Department Manager at Jones Edmunds. He can be reached at (352) 377-5821 or e-mail <u>tmcknight@jonesedmunds.com</u>.

Acknowledgements: Tonnage data provided by Citrus, Clay, Escambia, Lee, Pasco, and Sarasota Counties and the New River Solid Waste Association and Palm Beach Solid Waste Authority.

Notes:

1. https://www.investopedia. com/terms/g/great-recession. asp#:~:text=The%20Great%20 Recession%20refers%20to,Great%20 Depression%20of%20the%201930s 2. https://www.cnn.com/2020/04/09/ economy/trash-collectioncoronavirus/index.html 3. https://www.brookings.edu/blog/ up-front/2020/05/04/the-abcs-of-thepost-covid-economic-recovery/

Letter from the President Continued from Page 3

to adaptation to keep the trucks on the road and making magic at the curb where everything "disappears" until next week.

It is going to be an odd year. Our plans to get back together aren't until next spring and we hope that things will have changed, but I know that if it hasn't, or is modified, we will make the most out of the situation. Our technical committees will be looking for ways to bring information and members together. I don't see any chapter Zoom happy hours in the near future but am open to the idea, just remember to bring your virtual drink of choice. As mentioned above, we are still planning on the Road-EO in April and our statewide conference in May of 2021. Until then, I hope everyone is staying safe and I look forward to seeing everyone as soon as it is practical.

Sincerely,

Keith Howard SWANA FL President

Growing Demand for Renewable Natural Gas in the Transportation Sector

Ramon Rivera

The demand for renewable natural gas (RNG) for producing electricity may have tapered off, but according to industry experts, there is growing demand for renewable natural gas in the transportation sector, offering new opportunities for RNG producers.

The transportation sector is the biggest contributor of greenhouse gas emissions resulting from the use of petroleum-based fossil fuels. Since RNG is a cleaner source of fuel with low carbon emissions, it also offers benefits in the form of environmental credits. These economic incentives have caught the attention of RNG producers, developers and fleet owners, who have recognized

that renewable natural gas can offer a clean, renewable source of energy for the transportation sector.

California is the Land of Opportunity

According to Bryan Nudelbacher, Director of Renewable Natural Gas with U.S. Gain, California offers the greatest opportunities for renewable natural gas in the transportation sector. "California's Low Carbon Fuel Standard, rewards fleets for using low carbon fuel. Those choosing RNG can leverage existing natural gas vehicle technology and infrastructure, further strengthening their performance," says Nudelbacher.

These sentiments are echoed by Sean Wine, Director of Strategic Development and Operations at Clean Energy Renewables, a natural gas vehicle specialist that distributes 360 million gallons of fuel a year to fleets across North America. According to Wine, demand for renewable natural gas in California is currently around 160 million gallons per year and growing. California has 14,000 trucks spread across various ports in the state that are being pressured to lower their emissions. "We see those 14,000 trucks as a huge opportunity," says Wine.



Other Drivers of Increased RNG Demand

Looking outside of California, another key driver of the increased demand for renewable natural gas as a fuel source in vehicles is for companies to improve their corporate sustainability performance. Fleet owners are increasingly jumping on the RNG bandwagon, toting their clean energy operations as part of their marketing strategy and green image. Added to this is an increase in low-carbon fuel programs in states like New York, which is fueling the growth of the RNG market outside of California.

The Impact of Agricultural RNG

According to Wine, having access to renewable natural gas generated by agricultural sources can enhance its value. "The way the low-carbon fuel standard program works is you generate more credits, the lower carbon the fuel is," Wine explains. "The reason there is so much buzz around agriculture is because you generate a much lower carbon intensity score on your project." U.S. Gain has partnered with the agricultural industry to increase the production of RNG in this sector. According to Nudelbacher, "Dairybased RNG features the lowest carbon-intensity scores awarded by

the California Air Resources Board and as a result, the highest credit values." Due to the economic benefits and growing demand from the transportation sector, the development of RNG production in the agricultural sector will be pursued. This offers a win-win scenario turning farm waste into a clean energy source.

Increasing the volume of RNG outputs from agricultural sources such as

livestock manure could push products with a higher carbon intensity into states outside of California that have less stringent requirements in terms of their carbon content. Wine predicts that this could in effect end up pushing landfill gas out nationally.

Distributing RNG to End Users

To successfully commercialize RNG, it needs to get to the end user. In cases where the end user is also the developer, for instance developers who produce RNG for use in their own vehicle fleets, this is not an issue. It also offers additional benefits in that these companies reap maximum (100%) of the environmental credits awarded and can tweak their rate of supply to meet their demand, improving the rate and efficiency of use. However, getting it to other end users can be more tricky.

"Distribution of RNG can be confusing and in some cases create a 'too good to be true' feeling for companies considering a path forward with RNG, until we have the opportunity to demystify the process," said Nudelbacher.

In order to qualify for clean fuel credits, certified pathways of distribution that map the supply of RNG distributed from source of production through interstate natural gas pipelines to the dispensing point need to be recorded and tallied with each other. "RNG produced in Wisconsin, for example, can be used by fleets in California as long as we can match an amount injected into the natural gas pipeline with an equal amount withdrawn by transportation," explains Nudelbacher. Regulating bodies refer to this process as displacement, noting that for every unit of RNG injected into the pipeline, an equal amount of fossil gas doesn't have to be extracted from the earth.

However, getting the gas from the source of production to the distribution points (gas pipeline network) has proved notoriously challenging for RNG producers, particularly for RNG projects on sites that are located some distance from the nearest gas pipeline. For small scale producers such as dairy farms, it may be economically viable to transport the RNG to the gas pipeline as long as it is within a five-mile radius. For sites that produce larger volumes of RNG, such as landfills, this would not be viable due to the large number of trailers required to haul it from point A to point B.

Find out More

Monetizing RNG production in the vehicle fuel sector is one of the key themes being covered at US Biogas Virtual 2020 this October 5 and 6. To find out more about this unique event, visit <u>https://events.newenergyupdate.</u> com/biogas/.

Source

Sean Wine and Bryan Nudelbacher. Benefiting from the Growing Market for RNG in Transport. Reuters Events/ NewEnergyUpdate.

Ramon (Ray) Rivera is CEO of Diamond Scientific (Cocoa, FL). He can be reached at (321) 223-7500 or e-mail <u>info@diamondsci.com</u>.

Know Your Leachate and Landfill Gas Levels Anytime, Anywhere



Talking Trash 7

Facility Spotlight: Sarasota Central County Solid Waste Disposal Complex

Tobin McKnight, PE, BCEE, Jones Edmunds

The Facility Spotlight column is presented by the Florida Sunshine Chapter Landfill Management Committee. This column features Chapter facilities and members and discusses issues and challenges with planning, designing, constructing, operating, and closing landfills.

The Sarasota **County Public** Utilities Solid Waste Division has operated the Central **County Solid** Waste Disposal Complex (CCSWDC) since 1998 and maintains various other convenience centers and closed landfills throughout the County.

The CCSWDC is in the center of unincorporated Sarasota County, north of Venice, Florida, on Knights Trail Road and encompasses 550 acres for solid waste operations. It is surrounded by 7,000 acres of County-owned property including the Pinelands Reserve. The landfill includes Phases I and II that cover about 120 acres and can expand to provide capacity beyond 2050. The facility averages about 1,200 tons per day and has support facilities including yard waste processing, C&DD recycling, a convenience center, and a landfill gasto-energy facility.

Q&A with Lois Rose, Landfill Operations Manager

Q: How did your career start in solid waste?

A: I started with the County in the environmental laboratory running nutrient and other wet chemistry analysis. I was too much of an extrovert to work in a lab all day, so I moved into a position with Solid are currently planning for another expansion—Phase III. We are in a process to increase the vertical height of the landfill from a 100-foot elevation to 200 feet. I've been part of the Phase I closure, the installation of the landfill gas collection system, construction and operation of the gasto-energy facility, added a customer convenience center, and resolved a consent order with FDEP that involved

> the "Shadow Effect".

Q. What do you enjoy about working at the landfill?A. Everything. It changes every day.

Q. You have a mix of County operations staff and contract operators. How is work delineated and what are the

advantages and challenges? A. We have good relationships with our contractors, and we set high expectations. The landfill operator is Advanced Disposal, and they bury trash, process yard waste, manage tires and scrap metal. WCA runs the C&DD recycling facility-one of only three in Florida. Aria Energy operates the landfill gas-to-energy facility. Pros-it's more cost effective to contract operations if there are good performance-based contracts in place. The challenges are with contract management-making sure the contractor is doing what they are supposed to.

Q: Sounds like you have a created a high-performing culture. What have you done to cultivate it? *A*. Lead by example. Know what your



Waste and began developing the County's household hazardous waste (HHW) and small quantity generator programs.

Q. You're are currently the Landfill Operations Manager. What other roles have you had with the County?
A. I've done the whole gamut from HHW, biomedical, residential garbage collection, convenience centers, closed and open landfills, solid waste education, vertical construction projects, landfill expansions, contract management, budgeting, and strategic planning. Everything but engineering.

Q: How has the CCSWDC changed from when it opened in 1998?A: I've seen one major expansion with the addition of Phase II and we

expectations are and don't lower those expectations. With all new contracts, we set the expectations at the kickoff meeting, and we continually review and revise our contracts to improve them.

Q. What is your biggest challenge? **A**. Leachate management is a growing concern, with the high nitrogen content and being able to meet discharge requirements and address PFAS. Another challenge is having adequate capacity. Growth is huge in this area and planning and building enough capacity is a concern. Meeting budgetary expectations and providing a high level of service is a challenge.

Q: What project or feature are you most proud of?

A: Honestly, the entire site. We take pride in how clean the facility is, and



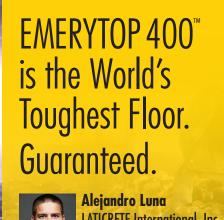
we get lots of compliments on how well managed the site is. People come in expecting a dump and don't realize it's a landfill. We manage 7,000 acres and over 3 miles of inbound roads, and it's rare to see litter.

Q. What new or unexpected challenges has COVID-19 presented?A. Tonnage has been up. Our staff are critical, and our scale house operators and inspectors had to keep

working. We established new procedures and adapted. We moved to more automated transactions to limit interaction with customers and are accepting only credit cards for payment.

Q. What do you do for fun outside of landfills? *A.* I really enjoy traveling and spending time with my family including my two "babies," a black Labrador Retriever and Lab-Weimaraner mix.

Lois Rose has made a career at Sarasota County. Beginning on April 17, 1989 in a County lab, she moved to Solid Waste in 1991. She has worked on every aspect on Sarasota's integrated solid waste management program and has served as the Landfill Operations Manager for 16 years. She can be reached at (941) 861-5000 or e-mail <u>lerose@scgov.net</u>.





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Double-Cased Leachate Force Main and Leak Monitoring System

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

Landfills may add casing pipe around their underground leachate force mains to provide additional environmental protection. In the event a leachate force main leaks, the liquids stay inside the casing pipe, thus preventing leakage into the ground. Routine inspections of leachate sumps and the pumping system typically includes check for leachate inside the casing pipes to determine if there is a force main leak.

For many years, a typical leachate force main monitoring system included a dry manhole inline with the leachate force main. The term "dry" means that the leachate in the force main does not release into the manhole but instead passes through the manhole without any discharge. However, the manhole is open to the casing pipe, so any liquid that seeps into the casing pipe also seeps into the manhole. During routine inspections, any liquids observed inside the manhole could be an indication of a leak from the force main that is releasing into the casing pipe, which, in turn, is releasing into the manhole. Inspectors also need to check that the hatch to the dry



Constructed leak detection systsem using a dry manhole.

manhole is properly sealed and that rainwater cannot enter the manhole.

This system requires a vertical HDPE manhole with force main connections to the below-surface manhole, as shown in Diagram 1. Photo 1 shows a system constructed with the vertical HDPE dry manhole located inside a concrete structure at a leachate removal sump. With horizontal leachate force mains that extend between several dry manholes located at leachate removal sumps, leachate

leaks that fill the nearest manhole can overflow through the casing pipe to fill adjacent manholes as well. If the problem is discovered and addressed in a timely manner, the leak in the force main can be limited to a single manhole and only the lengths of leachate force main on either side and will not extend to subsequent manholes. Otherwise, the operator must conduct a tedious investigation of all the manholes and piping to find the location of the leak.

A more recent design eliminates the dry manhole and places the

casing pipe above ground. A pressure gauge or valve is attached to the flange at the end of the casing pipe, where the force main line connects to the leachate collection system risers. In this design, the casing pipe is closed and does not discharge to the outside. The leak from the force main gradually fills the casing pipe,

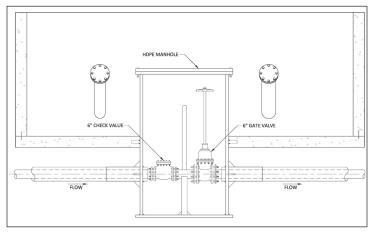


Diagram 1 Leak detection system using a dry manhole.

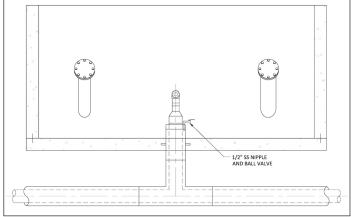


Diagram 2 Leak detection systsem using a valve on casing pipe.

transferring the pressure inside the force main to the liquid inside the casing pipe. Indications of a leak from the leachate force main are if either the pressure gauge shows high pressure inside the casing pipe or if you pipe to prevent liquids from flowing beyond the closed zones. This allows the operator to pinpoint a leak zone by finding the pressure gauge with the high reading. However, note that this design creates the need for pressure



Constructed leak detection systsem using a valve on casing pipe.

observe liquids when a valve is open. Diagram 2 shows the recent design using a valve attached to the flange at the end of the casing pipe. Photo 2 shows the constructed system with a valve on the flange at the end of the casing pipe.

In the more recent design, once the casing pipe is full of liquid, the pressure gauges will display highpressure readings; however, the operator will not be able to determine the exact location of the leak from the force main and will need to conduct a tedious exploration to determine the location of the leak. To narrow down the leak location zone, blind centralizers can be installed at the cell boundary locations (construction limits of cells) inside the casing testing of the casing pipe during construction; each zone will need to be pressure tested individually, which is a tedious endeavor by itself.

Nevertheless, the recent design eliminates several cost items, including the HDPE manhole, the large gate and check valves inside the manhole, and complicated piping below surface. It also provides savings by reducing the size of the structure.

Ali Khatami, Ph.D., P.E. is Vice President of SCS Engineers. He has more than 30 years of experience in design, permitting, and construction of landfills. Dr. Khatami can be reached at <u>akhatami@scsengineers.com</u> or www.scsengineers.com.

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The Florida Waste-To-Energy Project That Was Almost Never Built Part 2: Implementation

Lessons learned from the project implementation team for the Hillsborough Resource Recovery Facility

Marc J. Rogoff and Warren N. Smith

The Spring 2020 issue of *Talking Trash* included a discussion of the trials and tribulations impacting Hillsborough County's (FL) WTE project. We continue this issue with an overview of how the project was implemented and the many decision steps.

Reaffirmation of Project Site Selection

One of the first milestones we needed to accomplish was to again hold the public hearing for the selection of the project site. The major public opposition group lobbied with the Board of County Commissioners (BOCC) to hold another public hearing since they argued. that with three of the previous Commissioners now removed from office,¹ the previous Board's decision was tainted and thus the site selection decision was tainted. This time our hearing lasted eight hours and included the opposition groups arguing again that the WTE facility would eliminate development within the I-75 corridor. The BOCC decided otherwise and voted 5-0 to continue with the development of the WTE project at the selected (Faulkenburg Road) site. They did direct the Project Team to

include representatives of the Brandon Chamber of Commerce to help develop the landscaping requirements for the project in the RFP.

"Kick the Tires" Road Trip At that time, the County's WTE project would be the largest 12 Talking Trash public bond issue ever issued by Hillsborough County government. The County had issued public bonds for more typical projects like parks and recreation programs and water and wastewater utilities, which were the types of public projects that were well understood by the BOCC and the public. For WTE, we would be asking the public to finance a very expensive project with a technology not generally used in the U.S. at that time. While it was true that



One of the many contract negotiations meetings at the end of the project. Photos courtesy of Marc Rogoff.

neighboring Pinellas County had started construction of their new WTE plant, our Commissioners wanted a team of County staff and consultants to "kick the tires" of operating WTE plants in Europe to be certain that the best decisions were being made.

We organized an extensive tour of a dozen WTE plants in six Western European countries (Denmark, Germany, Switzerland, France, Belgium and Holland), which included all the major prospective European suppliers of WTE technology (Volund, Steinmueller, Martin, Von Roll, and Katy Segers) at the time. The participants on the tour included a County Commissioner, the County Attorney, the President of the Brandon Chamber of Commerce, a member of our Bond Underwriter team, project consultants Camp, Dresser and McKee and department staff. Going by private bus, we were able to tour the plants, visit with the technology providers, and interview plant operators and nearby businesses. This allowed our

> team to develop ideas on how the County's plant could be designed to be as compatible as possible with nearby commercial developments. Architectural compatibility was made an important element of the RFP. This resulted in the winning proposer providing such project features as the coloring of the building and stack (blue). enhanced landscaping of the site, and enhancing the exterior skin of the building (with brick accents and translucent siding) to give it the appearance of an office building.

Project Decision Points

With the help of CDM, various Decision Papers were developed over the course of six months

including project recommendations such as technology, facility ownership and operation. The BOCC eventually voted that the WTE plant would use mass burn technology, and would be owned and financed by the County, but operated by a private company, creating a public-private partnership. Another Decision Paper recommended initial development of a 1,200 ton per day plant with three 400 ton per day boiler trains, but with built in expansion features to accommodate a fourth boiler train (tipping floor, pit and cranes large enough for the additional boiler and a fourth flue in the stack). The BOCC accepted this recommendation. At that time, Hillsborough was one of the fastest growing counties in the country and there was a concern that the WTE could be expanded in order to continue to minimize landfilling in the future.

With these major plant sizing and operational issues decided, CDM began work on permitting the proposed WTE facility. Based upon the Decision Paper on Environmental Regulatory Review, it was decided to use the Electrical Power Plant Siting Act (PPSA) to streamline and consolidate the regulatory process and the many legal hurdles that would to be resolved on the local, regional, state and federal levels.

Public Education and Involvement

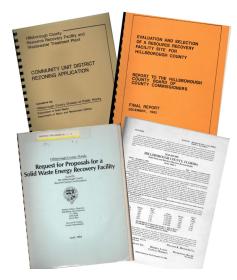
While we were providing status reports on the project to the BOCC from the very beginning, our efforts ramped up as soon as we returned from our European tour. A project fact sheet was developed, along with a master slide (photo) set. More than 100 presentations on the project were made to civic, social, environmental and homeowner's associations. We invited our opposition group to send representatives to sit on a landscaping committee to help prepare

specifications to be included in our RFP. This active citizen involvement with the project helped minimize opposition, although there remained a small group that opposed the project even after facility construction began.

RFP and Construction

Issuing the RFP was one of the major final steps remaining to achieve project success. The BOCC had concurred at the outset that the project would be designed, constructed and operated by a private vendor. The RFP was crafted in a way that minimized ambiguities that might result in some proposers adding a risk factor to their ultimate bid price for the WTE facility. Additionally, the RFP contained minimum technical

and financial qualifications that each proposer had to meet in order to prevent an unqualified contractor submitting a very low price in order to be selected.



Collage of key project reports. Image courtesy of Geosyntec Consultants, 2020.

At the same time, the Project Team was proceeding to secure a signed electrical sales agreement with the local utility (Tampa Electric Company), a project site with all the regulatory approvals, and nearly all of the air emissions and environmental approvals by the State and the Cabinet under their Electrical Power Plant



Project groundbreaking in January 1984.

Siting Act (PPSA). We also began the process of the financing for the project by hiring a financial advisor, bond counsel, and team of investment bankers who were able to secure a major portion of the State's pool of industrial development bonds (IDBs). The RFP included the following major aspects:

• An overview of the County's team and implementation process

• General information about the County

• Detailed instructions for proposal preparation and submission

• Technical requirement for the facility

• Proposal forms for pricing, performance guarantees, equipment specification and utility use

• Draft design and construction agreement, and draft operation and management agreement

• Evaluation, selection and negotiation process

What differentiated our RFP from other similar WTE procurements was that the site was owned and properly zoned, the major environmental permits were in the process of being obtained, and the supply of waste had been secured. Additionally, the need for the County to issue the bonds to finance the project prior to January 1985 (which was four months after proposals were to be received) was that new tax laws would go into effect restricting the arbitrage rules for IDBs. The financial advisor calculated that under the new rules it would cost the County an additional 20 million dollars. As such, our time for contract

> negotiation was limited so we included a scoring of the contract changes proposed by the proposers in terms of the time we thought it would take to come to a final negotiation.

On August 28, 1984, we received six proposals, four of which were deemed complete. Based on the scoring criteria established in the RFP, the Project Team ranked Ogden Martin (now Covanta) as the first ranked proposal and began active contract negotiations. After a detailed negotiation

process, the BOCC selected Ogden Martin as the County's vendor for the WTE project, and contracts were signed on November 7, 1984.

Permitting Approval

To expedite the overall project, permitting was initiated once the site was secured. Like other large power plants in the State, as mentioned above we used the PPSA to help streamline permitting approvals on local, regional, state and federal levels. A comprehensive permit document, much like an environmental impact statement, was submitted to the Florida Department of Environmental Protection, which served as the coordinating agency under the PPSA. Our permitting attorney was able to secure consent agreements with most agencies, and the Governor and the State Cabinet approved the facility permit on December 18, 1984.

Financing

Once the agreements were signed with Ogden Martin, CDM was engaged to develop an Engineer's Feasibility Statement for the eventual bond issue for the project. The Project Team worked with CDM in developing a compelling story of the project to our eventual bond investors and bond insurance companies. Presentations were made in New York to the bond rating agencies and favorable bond ratings of AAA (Standard & Poor's) and Aaa (Moody's) were obtained. The project went to market on December 1, 1984 and \$144 million of project bonds were sold within 15 minutes!

Groundbreaking

With all the major project components now in place, a groundbreaking was scheduled on January 8, 1985. Plant construction went uneventfully over the next two years, with commercial plant startup achieved on April 1987. Increasing residential and commercial growth in the County required a 600 ton per day expansion, giving the expanded plant a design capacity of 1,800 tons per day, which became operational in September 2009.

In conclusion, the County's WTE plant having been in operation now for 33 years, provides the following major assets to the County:

• Combusts up to 1,800 tons of solid waste per day

• Reduces the amount of material that is landfilled by 80 percent

• Saves \$500,000 per year in utility costs by providing electricity to County-owned buildings

• Produces \$450,000 in revenue per year by recovering and recycling metals

• Generates up to 45.5 megawatts of electricity to the grid, equivalent to \$16 million per year

Marc Rogoff was the Resource Recovery Administrator for Hillsborough County, FL. Marc is now a Senior Consultant with Geosyntec Consultants with their Solid Waste Advisory Practice. Marc can be reached at (813) 810-5547 or <u>mrogoff@geosyntec.com</u>.

Warren Smith was the County's Solid Waste Director. Warren is retired after having served as Director of Pinellas County's Department of Solid Waste Operations and Solid Waste Manager for HDR Engineering, Inc. He can be reached at (727) 515-0006 or wsmithc10@aol.com.

**The authors want to thank Paul Stoller for his review and comments on the content of this article. Paul served as CDM's Project Manager on Hillsborough County's WTE project and is now retired. The authors would also like to thank Kimberly Byer, Solid Waste Director, Hillsborough County, FL, for access to historic project documents.

Note:

1. During the WTE site selection process, in early 1983, three out of the five County Commissioners were arrested and indicted for bribery and removed from office. In accordance with Florida law, the Governor of Florida appointed three people to fill out the remainder of those Commissioner's terms of office. Those appointed all resided in Hillsborough County, had impressive backgrounds, were well respected in the community and had no political ambitions to continue as County Commissioners, and they were guided by making decisions that were in the best interest of the County.

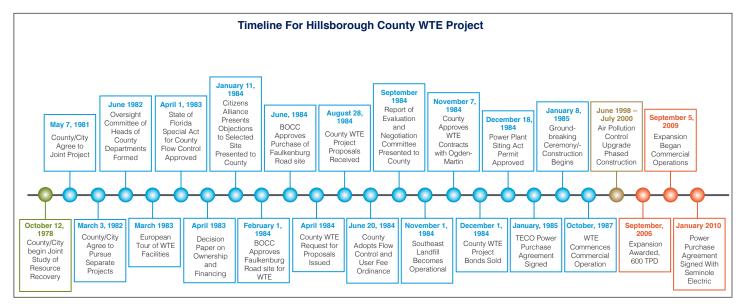


Image courtesy of Geosyntec Consultants, 2020.



Issues

- Significant new and ongoing regulatory issues
- Higher labor, energy, fuel, equipment, and insurance costs
- Uncertain and changing market for recyclables
- · Political pressure to do more with less
- Perception that private sector can provide better service at reduced cost and with less governmental risk
- Increasingly-engaged public calling for more recycling and implementation of zero waste goals

Challenges

- Numerous competing priorities
- Effective change requires comprehensive evaluation of current organizational, financial, and operational activities
- Public and elected officials may lack knowledge of costs, risks, or sustainability of implementing new programs
- Well-intentioned new activities can have unintended consequences upon existing systems and finances

No matter what pressures your organization is facing, becoming more efficient in every facet of your operation - from collection routing, solid waste and recyclables collection, manpower allocation, vehicle maintenance, billing, to better use of municipal resources - improves operational and financial performance.

How Can Geosyntec Help?

Our team of solid waste advisors includes seasoned experts that can help with:

- Rates Structure and Level of Service Analysis
- Long-Term Planning and Optimization
- Annual Budgeting and Financial Modeling
- Closure/Post-Closure Accounting (GASB #18) and Financial Assurance
- Review of Franchise Agreements and Fee Reimbursements
- · Leasing or Purchasing Equipment
- Bidding Out Municipal Operations
- Collection Routing Assessment Studies
- Recycling Markets
- Emerging Waste Conversion Technologies such as Composting, Anaerobic Digestion, and Gasification
- Grant Application Assistance
- Public Outreach, Engagement, and Education
 Programs
- Communications Materials and Infographics

We offer unrivaled expertise in objectively reviewing, analyzing, and measuring operational outcomes and key performance indicators and comparing them to industry benchmarks using custom models.

For More Information, Contact: Marc Rogoff, Ph.D. (813) 810-5547 mrogoff@geosyntec.com Geosyntec Consultants 12802 Tampa Oaks Blvd., Suite 151 Tampa FL 33637

Providing Essential Support Services During a Global Pandemic

Daniel Lopez, Department Safety Supervisor (DSWM)

Amidst a global pandemic, as an essential service provider, the Miami-Dade County Department of Solid Waste Management (DSWM) had to act fast in order to continue providing a variety of solid waste collections

and disposal services without interruption to over 330,000 homes, while keeping its employees as safe as possible.

Using the Centers for Disease Control and Prevention (CDC) guidelines as well as key information provided by the Solid Waste Association of North America (SWANA), such as working from home ergonomics, PPE alerts, etc., the Safety

Section has provided guidance and effectively communicated safety information throughout the organization amidst the State of Emergency.

One of our many success stories, is how the DSWM Human Resources (HR) Division has had to quickly innovate to continue supporting the Department's internal customers (more than 1,000 employees). The HR Division has continued to hire and promote employees into new positions, prompting the need to provide timely training and safety orientation. The HR Division's Training and Development and Safety Section's innovative usage of distance learning using virtual platforms, smaller class sizes (10 or less), and strict adherence to social distancing and personal protective equipment guidelines has allowed the DSWM to continue pertinent support services to both internal and external customers without skipping a beat.

Hands-on training during this time has been very challenging. However, with the skillful and patient guidance of



Technical Equipment Instructor Casey Adams (L) and trainee Damion Glenn review pre-trip inspections.

the Training and Development Section staff, newly promoted drivers and operators have been able to get the same level of training as before the pandemic, albeit with social distancing and more sanitizing than ever. The Section has mastered virtual learning platforms such as Microsoft Teams, Zoom, and WebEx to deliver and facilitate classroom instruction and to provide pertinent information such as policies and procedures, and virtual instruction of the vehicles such as pretrip/post-trip inspections. The virtual classroom has also provided continuity of guest speaker presentations on health and wellness, drug and alcohol awareness, as well as the Department's in-house Professional Truck Driver training series.

These innovative methods have kept new hire trainees and existing employees engaged and excited to keep working safely more than ever. Since the pandemic, the Training and Development Section has successfully completed training for trash truck, tractor-trailer, and waste truck drivers using both virtual and hands-on meth-

ods. The Section has also provided guidance to the Landfill **Operations** Division for heavy equipment training (i.e., loaders, compactors, bulldozers) for Waste Equipment Operators. As we move into the "new normal," the flexibility that the new training methods provide to both the Trainees and Instructors cannot be overstated.

Despite the pandemic,

the DSWM HR Division remains dedicated to delivering excellence to the employees and residents of Miami-Dade County. Although creating new ways of conducting business has always been a wise strategy, it has now become a necessity. We are excited to see what additional improvements can be made in these trying times!

Daniel Lopez is Department Safety Supervisor for the Miami-Dade County Department of Solid Waste Management. He can be reached at (305) 514-6629 or <u>Daniel.Lopez3@miamidade.</u> gov.

Industry News

MSW Management Magazine Honors Marc Rogoff as One of 30 Professionals Impacting the Waste Industry Legacy Over the Past 30 Years

Dr. Rogoff, a Senior Consultant with Geosyntec Consultants who works out of their Columbia, MD, and Tampa, FL offices, has more than 40 years of experience as a public agency manager and consultant. He has managed more than 350 consulting assignments across the U.S. on literally all facets of solid waste management. Marc has directed engineer feasibility reports for nearly two dozen public works projects including landfills, transfer stations, and waste-toenergy facilities totaling more than \$1.2 billion in project financing. His efforts have included the



development of more than 100 detailed spreadsheet rate models establishing the financial feasibility of each project, long-term economic forecasts, and projected rate impact upon project users and customers. During his governmental and consulting career, Dr. Rogoff has directed or conducted more than 50 solid waste system rate analyses and delivered testimony before city councils and county commissions regarding their impact on customers. He is a noted author of over 200 articles on various subjects in solid waste management and sustainability as well as eight major textbooks.

Marc has been a SWANA member (back from the GRCDA days) since 1981 and has been an active SWANA FL member serving on the state chapter board and nationally on the Executive Committee. He was awarded a Life Membership with SWANA in 2019.



Member News

The Florida Recycling Partnership Foundation Releases Composition Study

The Florida Recycling Partnership Foundation commissioned its first study to more accurately determine the amount of contamination in the recycled materials being collected. Dr. Tim Townsend and the Department of Environmental Engineering Sciences at the University of Florida (UF) conducted the research on the current and historic composition of recycled materials at Materials Recovery Facilities (MRFs) and amount of contamination.

Materials from curbside bins and commercial businesses taken to MRFs are sorted to separate valuable recyclable materials from



contamination. Recyclable materials are sent to processers to become new materials. Contaminated materials are sent to a landfill for disposal.

Contamination occurs when garbage or non-recyclable items are mixed in with valuable recyclables in the bin or cart. The contamination can cause an entire load of recyclable material to go to the landfill instead of being recycled.

The UF research focused on studying the types and weights of valuable materials and contamination handled at the facilities. The data was used to quantify historic contamination rates, which is defined in the study as the percent of total inbound weight that was ultimately landfilled. The study found that on a historic average weight basis, the overall contamination rate is 25% for all MRFs, 27% for single stream MRFs, and 18% for dual stream MRFs. "In the last few years we have seen a gradual increase in the contamination rate and anticipate that more attention

> will be needed to maintain the cleanest recyclables stream," said Dr. Townsend.

"Increasing the collection of more valuable recyclable materials is the top priority," said Kim Brunson, Publix Super Markets Facility Services Business Relationship Manager and Foundation Chair. "Our goal, as a Foundation, is to increase participation in

recycling the right things and reducing the use of recycling bins for things that belong in a garbage can. The UF study has developed a baseline of how much non-recyclable materials are going to the MRFs. Hopefully, with education and positive messaging, we can change consumer habits so that only proper recyclables are placed in recycle bins in order to reduce the



amount of contamination going to MRFs."

This Florida Recycling Partnership Foundation's mission includes improving recycling of valuable recyclable materials, reducing the amount of raw materials used and the reuse of materials whenever possible. The Foundation will use the information provided in the study to demonstrate how important it is to place the correct items in the recycling bin.

To review the study, visit <u>https://</u> flrecycling.org/wp-content/ uploads/2020/06/UF-MRF-Contamination-Report-Final.pdf

Keyna Cory is the Executive Director for the Florida Recycling Partnership Foundation, a 501(c)(3) organization created to educate policy makers, business leaders, and the general public on the benefits of recycling and for the advancement of recycling education and science. She can be reached at keyna@flrecycling.org.

The Miami-Dade County Department of Solid Waste Management Continues to Provide Full Service Throughout the Coronavirus Pandemic Michael Fernandez

While the Coronavirus (COVID-19) has affected the lives of people around the world, the country, and the State of Florida, the far-reaching effects of this disease haven't stopped the



Vincent McPherson aligns waste carts for Dion Hill, both of Waste Collection, to service.

Miami-Dade County Department of Solid Waste Management (DSWM) from completing its day-to-day operations. "We've had to make a few adjustments due to the Coronavirus but our disposal sites remain open, we're picking up residential garbage and bulky waste requests all week long, and our recycling contractors



Home Chemical Collection Center employees David Suchinsky and Gerald Simms sort through cans of paint.

also continue to provide collection and processing services," said Michael Fernandez, DSWM Director. "Basically, we haven't skipped a beat."

DSWM's operations, which are considered an essential service, continue despite the declaration of a state of emergency. They are ensuring that customers' garbage and trash are collected, disposal facilities accept deliveries of waste, and mosquito control operations remain ongoing (Miami-Dade's mosquito control operations are managed by DSWM).

That being said, certain protective measures have been enacted to promote the safety and welfare of department employees and the public during the pandemic. Personal protective equipment (PPE) such as gloves, masks, disinfectants, hand sanitizers, and handwashing supplies have been distributed to work sites to ensure that staff are protected as much as possible while on the job. Additional cleaning operations at work sites have also taken place so that essential staff have a clean environment to work in. Employees who have the ability to work from home have been working remotely while completing their normal duties in their respective roles. Disposal sites have enacted protocols for visitors,



Shantinique Willis cleans up some debris at a transfer station.



Marta Ortega of Waste Enforcement searches for evidence in a pile of illegally dumped trash.

including requiring that identification cards be displayed for scanning through vehicle windows, rather than opening vehicle windows and handing the cards to an attendant; requiring the use of facial coverings; and following social distancing standards.

"I think what has helped us manage this situation is the fact that we've had to deal with a variety of emergencies in recent years," Mr. Fernandez said. "Our mosquito control had the Zika outbreak in 2016 and our solid waste management team and operations pitched in to help. Then we had Hurricane Irma in 2017, so our team is experienced in dealing with crisis situations."

Despite the many challenges the COVID-19 pandemic presents to everyone in Miami-Dade County, the resilience, perseverance, reliability and professionalism of DSWM staff has been essential in continuing to provide the high-quality, effective and timely services that Miami-Dade solid waste customers have become accustomed to.

Michael Fernandez is Director of the Miami-Dade County Department of Solid Waste Management. He can be reached at (305) 514-6626 or e-mail <u>mfern@miamidade.gov</u>.

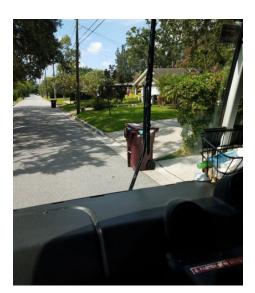
Member News

Recycling Participation/Set-Out Rate Study in City of Orlando Neighborhoods: Relationship Between Sociodemographic Factors and Recycling Participation

Digna M. Rivera, Residential Recycling Project Assistant, Solid Waste Division, City of Orlando

Residents' recycling behavior can be studied from multiple different levels: individual, neighborhood, and city, all of which are subject to diverse variables. According to research from 2008, Lauf notes that some studies have been able to associate neighborhood recycling behavior with certain sociodemographic characteristics, such as income, education, and age among others, in order to find a representative profile generalizable across participating recyclers. Yet, as stated by Rojas and team, in 2008, very few studies have included nationality/ethnic origin as a sociodemographic characteristic.

The City of Orlando is attempting to fill this dearth of understanding by studying whether there is a relationship, at the neighborhood level, between recycling participation/ set-out rate and income level and



ethnic origin. The sample selected in each of the City's six commissioner districts is about 23% to 29% of the total single-family households within, while representing 24 different neighborhoods throughout Orlando.

According to the firm Burns & McDonnell, "set-out rate" is the percentage of households that place their recycling container at the curb during a single collection opportunity, while "participation rate" is the percentage of households that took part at least once over three consecutive collection opportunities. Using these definitions as a frame, the City of Orlando established a data collection methodology as follows: On day of collection, the City's study team samples the selected neighborhood by counting recycling carts at the curb. That same procedure is performed three times in a row in the same neighborhood.
 Sociodemographic information for each neighborhood is then overlaid using data from the national Census, at the block group level.

While this study is still in ongoing, the City's early findings show that, neighborhoods with lower income level will have a lower participation/set-out rate. In addition, neighborhoods with higher percentages of Hispanic populations will participate less in the City's curbside recycling program. The findings from this type of analysis have the potential to assist the City's Solid Waste Division with planning effective educational campaigns with customized messaging based on neighborhood characteristics. These tailored campaigns will use less resources and maximize efficiency. Furthermore, finalized results will be important in identifying social inequalities that are potentially acting as barriers to increasing recycling participation and lowering contamination in the City Beautiful.

For more information or questions regarding this study, e-mail Digna M. Rivera at <u>digna.rivera@cityoforlando.</u> <u>net</u>.



Florida Chapter Webinar Program New Code & Registration Instructions

SWANA has switched over to a new system for its online store and the **Chapter Webinar Program** process has changed. The Florida Sunshine Chapter purchased credits that allow members to participate in webinars with no out-of-pocket cost. Instructions on how to register using the new promo code are below.

The Florida Sunshine Chapter's promo code is: FLORIDA

How Do I Register?

- 1. For a live webinar, go to the webinar event page you would like to attend and click "Register." For recorded webinars, skip to Step 2.
- 2. Click "Add to Cart".
- 3. Click "View Cart".
- 4. Enter Debit Card Code in the box labelled "Promo Code" and click "Apply"

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- 5. Cost for the webinar will now be \$0.00.
- 6. Click "Pay Now" and complete order process.
- 7. An email containing the login link will be sent to your email automatically at time of purchase.



During this special week of celebration for waste and recycling workers, we joined together to thank the women and men who work daily to keep our neighborhoods and streets safe and clean! Congratulations to our winners. We appreciate all that you do!



Congratulations Marc Bex – Operations Manager, Waste Management Inc. of Florida

"Marc Bex has done a phenomenal job at not compromising safety, problem solving customer inquiries to find the right balance between policy and service, honoring commitments, and providing constructive input into program changes or implementations. Marc Bex provides a level of security and confidence to my role on the public side overseeing curbside collection programs for Sarasota County and reflects well on Waste Management as a corporate partner. He works countless hours to make things happen and was a key component in our recent transition to automated recycling carts. Corporately, the local Waste Management district office was recognized as having the 8th best customer service score in North America and best safety record in the State of Florida for 2019. While it takes an entire team to obtain that level of success, I contribute a large part of that success to the efforts of Marc Bex."

Nominated by Brian Usher, Sarasota County Public Utilities



Congratulations Sherrickia King – Refuse Equipment Operator, City of Sarasota

"As a swing driver, Sherrickia has acquired the training, knowledge and experience needed to operate the majority of our equipment. At times the swing driver position can be demanding with changing circumstances on a daily basis. Sherrickia is always ready for what comes her way! No matter the assignment, she is always prepared with a smile. She works hard to care for our residents and customers. In August, Sherrickia will celebrate her 3-year anniversary with the City of Sarasota."

Nominated by Jonathan Williamson



Congratulations Michael Mathews – Senior Customer Service Representative, City of Sarasota

"Michael is a veteran team member with over 24 years of service with the City of Sarasota. He has worked in various areas within the city and also as a solid waste equipment operator. He now works hard to educate and take care of any matters with regard to the city's customers and residents. He has a professional, fun and courteous demeanor!"

Nominated by Jonathan Williamson



Congratulations Lee County Solid Waste – Household Chemical Waste Team – Earnest Outlaw, Carlos Pizzaro, Eric Gutierrez, Patricia Lizzio, Charles Rizzo

"In response to the COVID-19 pandemic, Lee County's household chemical waste team closed the drop-off facility to the public on March 24, 2020. And, in true team spirit, they immediately volunteered to help the crew at the county's very busy C&D recycling facility. This hardworking group jumped right in—accepting incoming loads, directing traffic, running the water truck—whatever needed to be done. They took to these new roles with humor and grace and didn't miss a beat when it was time to reopen the HCW facility on May 11. That first day, they served 327 customers—a 181% increase over their previous record. We truly appreciate them and their service to our department and the people of Lee County."



Congratulations Charles Lovely – Division Chief 3, Transfer Division, Miami-Dade Department of Solid Waste Management

"Mr. Lovely has 36 years of experience in the solid waste industry. He started his career as a tractor-trailer driver. His hard work and skills enabled him to be promoted within the organization. Mr. Lovely's wealth of knowledge has made a positive contribution to the department. During this pandemic, he continues to be on the frontlines with his employees. Mr. Lovely is an asset to the department, as well as the industry."

Nominated by Olga Espinosa-Anderson, Assistant Director

Nominated by Paul Flores, Public Utilities Operating Manager

Congratulations Nominees – Thank You for Your Service!

Achaya Kelapanda Adalberto Ortega Anthony Hardy Barbara DellAmico Beverly Michaud Byron Mitchell Carlos Salcido Christi Lackey Damion Williams Daniel Hooks David Louis **Dontavious Howard** Dunta Peterson Dwight Gordon Eric Mayo Earl Berry Eddy Quiala Erick Swinton **Eugene Williams** Felix Garcia Frank Gomez Gerardo Suarez

Harrison Crenshaw Howard Young James Cooper Jorge Soriano Jaime Graves Javier Torres Jean-Daniel Lazare Jeremiah Reed Jeremy Brown Jill Brown Joe Durn Joel Jones Josh Mulholland Jovante Thomas Leon Pitts Matthew Rosebaro Mike Dinsmore Moises Barahona **Quincy Stanley Richard Amador** Richard Campbell Robert Washington

Ron Klazon Ruben Talamantes Rudolph Ponder Sarasota County Landfill Infrastructure Maintenance Team (Jeff Edwards, Frank Bennett, Chris Warren, Gary Bujnowski & Bryan Hauteman) Sharon Smith Sherra Durham-Camp Tallahassee Collection Drivers Terry Taylor Todd Asbacher Tommy Watts Tony Riccio Travis Mathews Wilfre Estevez William Haynes Yvette Washington Yanael Rodriguez Yusniel Yumar

Talking Trash Newsletter

Editor in Chief Angelina Ruiz Waste Advantage Magazine angelina@wasteadvantagemag.com

Managing Editor Molly Schweers Lee County Solid Waste Department MSchweers@leegov.com



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Upcoming Events

2021 SWANA FL Chapter Road-E-O April 9-10, 2021 Holiday Inn Fort Myers Airport @ Town Center Fort Myers, FL

2021 SWANA FL Spring Conference May 10-12, 2021 Naples Grande Beach Resort Naples, FL

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