Talking... TRASH

The Newsletter of the SWANA Florida Sunshine Chapter

Summer 2022

Learn more about Ocala's new automated trucks with BEV Technology ... page 14

Geosyntec consultants

Support Services for Solid Waste Managers in the Post-Pandemic World

Uncertain Times. Informed Decisions.

We understand the immediate and longer-term impacts of the global COVID-19 pandemic on solid waste operations, not least in terms of looming inflationary pressure, labor shortages, and uncertainty surrounding supply chain issues, which has affected procurement of new equipment and parts and distorted recycling markets. Many services such as curbside recycling remain popular with the public, yet for the majority of our clients are economically marginal. Waste generation has changed during the pandemic, with many haulers reporting sustained increases in residential waste and recycling streams coupled with declines in commercial volumes. No matter the challenges you are facing, Geosyntec can help your operation to be more efficient and resilient for an alternate future.

What We Offer

Our experienced team of engineers and economists can help.

Cost Analyses: Updated rate structures and cost-of-service models are needed to better understand cash flow implications. We can help with:

- Rapid rate studies, audits, and level of service analyses to rebalance rate structures and competing priorities
- Revising input costs, inflation, and volume projections based on updated benchmarks and industry data
- Grant application assistance for critical infrastructure

Contract Reviews: We can help understand the implications of contractual commitments and force majeure clauses by:

- Reviewing existing contracts, including host agreements, franchise agreements, fee reimbursements, long-term maintenance contracts, and capital projects contracting
- Restructuring future contracts in a manner that reduces risk and improves safety and performance

Planning: Revised near/medium term plans under "what if" scenarios will be key to providing necessary flexibility and resilience to maintain services and budget levels through the next several fiscal cycles. We can help with:

- Contingency planning
- Collection, operational, and recycling market assessments

About Geosyntec

With over 1,700 employees in 90 locations in the US, Canada, Europe, the Middle East, and Australia, Geosyntec provides the engineering and science needed to recover from this pandemic.

For additional COVID-19-related services, visit geosyntec.com/COVID-19

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In these times of unprecedented global uncertainty, Geosyntec offers advice on fulfilling service obligations and customer commitments while minimizing costs and risks.

Letter from the President

August 2022

What a fantastic Summer Conference!! Thanks to the planning committee, led by Tammy Hayes and Jason Timmons, for their efforts in putting on a first-class event. This event set the bar for attendance as we have not had this many attendees in quite some time. Guessing everyone wanted to get out and being at the Naples Grande Beach Resort didn't hurt. It was a fun three days filled with networking, a full exhibit hall and a variety of technical sessions. As part of this event, we installed directors for the upcoming two-year term and handed out awards to Lee County and Gene Ginn for Distinguished Service to the chapter and Deb Bush for her long-standing support and involvement with the chapter (Lifetime Achievement Award).

So how to keep this momentum rolling … first off get involved with one of our technical committees. These committees are a conduit to what's happening in the industry and an opportunity to share information with others interested in the same topic. The committee roundtables at our conference we're standing room only (ok the tables were all full). Contact one of the committee chairs to get involved. The chapter looks to these committees to help find abstract authors for conferences and write articles for the newsletter. These are both some of the best ways our chapter can share information for the betterment of our industry.

Wanting to get involved but you're saying to yourself, yeah but I haven't been around long in the industry, how can I help. Well, are you part of our Young Professionals Committee? This is where the next generation of solid waste industry leaders is forged. We have an active, dynamic group that is looking for help. They meet regularly, virtually and in person at our annual events. Reach out to Sarah Gustitus-Graham to get involved.

Don't forget, WasteCon is coming up this fall with the annual event planned for San Diego, CA, in December. More information should be coming out soon on the agenda and accommodations so be on the lookout for an email from the national SWANA team.

Lastly, as a membership organization, we are driven by the needs of you, the members. What would you like to see SWANA doing? How can we get more people in your organization involved? How can we make an impact with operational staff? Please reach out with suggestions. The board is looking for new ways to provide membership value.

It was great seeing everyone in Naples, enjoy the rest of your summer and we'll see everyone soon.

Sincerely,

Keith Howard
SWANA FL President

In This Issue

State of Landfill Leachate Management: Challenges and Opportunities

Shrawan Singh, Ph.D., PE

Rainwater percolating through the waste in landfills results in most of the liquid that makes up landfill leachate. A smaller portion of landfill leachate is also generated by the waste liquids released during the waste decomposition process. There are other landfill derived liquids, but this article addresses landfill leachate specifically. Leachate must be removed from the landfill to protect the landfill slopes from failure, avoid seepage, improve gas collection, and keep the landfill compliant. Removed leachate needs to be managed and either disposed of offsite or treated before discharging from the landfill as it usually contains a multitude of chemicals that can adversely impact human health and the environment. Most landfills manage/treat their leachate offsite at wastewater treatment plants (WWTP); however, WWTPs are getting increasingly hesitant to accept leachate due to its dynamic characteristics, high concentration of a few specific compounds, emerging contaminants, and stringent regulations. Proactive landfill operators are aware of existing and upcoming challenge of leachate management and are looking for opportunities and options for leachate management and treatment.

Leachate Chemical Makeup

To identify an appropriate leachate treatment process, we need to know what the leachate contains. Leachate broadly contains organic matter, nutrients, inorganic ions, and some trace chemicals. General leachate chemical makeup is shown in Table 1. The organic matter cumulatively measured as Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) is primarily made up of volatile fatty acids (VFA), and humic and fulvic acid type compounds, which are the primary reason for the darker color in leachate. These humic and fulvic acid-type compounds are refractory and harder to degrade biologically. During initial waste degradation, leachate typically contains high BOD and COD but as the waste degrades more, during the methane forming phase, most of the organic matter is in the form of non-biodegradable COD. Ammonia nitrogen is the primary nutrient in the leachate that can be removed biologically using phased aerobic and anaerobic treatments. Leachate also typically contains common inorganic ions such as chloride, bicarbonates, and heavy metals (arsenic, antimony, chromium, and vanadium), which have several removal options available and are normally managed through dilution, evaporation, or membrane separation. Emerging contaminants such as per and polyfluoroalkyl substances (PFAS) are also an upcoming challenge for landfill leachate operators.

Parameters	Young Leachate (0-5 years)	Intermediate (5-10 years)	Stabilized (10-20 years)	Old (>20 years)
pH	<6.5	6.5-7.5	>7.5	
BOD_5 (mg/L)	10,000-25,000	1,000-4,000	50-100	<50
COD (mg/L)	>10,000	4,000-20,000	<5,000	<1,000
BOD_5/COD	0.5-1.0	0.1-0.5	<0.1	<0.05
Organic matter	80% VFA	30% VFA	Humic and fulvic acids	
TDS (mg/L)	10,000-25,000	5,000-10,000	2,000-5,000	<1,000
Ammonia-N (mg/L)	<400 to 1,500	300-500	50-200	<30

Reference: Mukherjee et al. (2015) DOI: 10.1080/10643389.2013.876524

Table 1 - Typical leachate concentration variation with waste age.

Leachate Treatment Processes

In most cases, the leachate treatment processes are designed to remove nutrients, such as ammonia, and organic matter; however, the major challenge with organic-matter specific treatment processes is the dynamic nature of leachate over time. About 70% of Florida landfills send leachate (hauling or through forcemain) offsite to WWTP; however, WWTPs primarily have biological treatment processes and in most cases, these WWTPs are not designed to treat high non-biodegradable organic matter concentrations in the leachate and leachate treatment at WWTPs is mostly achieved through dilution. The dynamic nature and high concentration of leachate organic matter and ammonia can disrupt a WWTP's treatment efficiency as well. Leachate color and/or the presence of humic and fulvic acids also can negatively affect the UV disinfection process of WWTPs. In several cases, WWTPs have surcharges for BOD, COD, ammonia, and/or total suspended solids, or stop accepting the leachate. WWTPs increasing resistance to

Treatment Method Category	Treatment Processes
Natural Methods	Constructed wetlands, Phytoremediation, Land application
Biological Methods	Aerated ponds, Sequencing batch reactor, Membrane bioreactor , Activated sludge process, Anaerobic digester
Physical Methods	Thermal and climatic evaporation, Reverse osmosis
Physicochemical Methods	Activated carbon, Chemical oxidation
Other Management Methods	Deep well injection, Recirculation

Table 2 - Onsite leachate treatment categories and processes.

accepting leachate and expected regulatory challenges related to PFAS treatment has landfill operators looking to onsite treatment processes to manage their leachate.

Several types of onsite treatment and management methods are being used at landfills as shown in Table 2. Considering leachate contains a variety of chemicals, these processes target specific contaminants. Some are natural and biological processes and others are physical and chemical processes. Natural and biological processes are targeted to reduce the organic matter and ammonia leachate load. A larger footprint requirement can be a major limitation of natural and biological processes; for example, a constructed wetland of 65,000 gallons per day (GPD) capacity may cover up to a 3-acre area or larger. The capital cost for such a system can be up to or more than $2.5 million. Membrane bioreactor (MBR) and similar smaller footprint biological processes can remove organic matter as well as ammonia, but the capital and operating cost can be high and require experienced operators. Other biological processes such as Sequencing Batch Reactor produces a higher amount of sludge as compared to an MBR, which needs to be managed separately. Multiple vendors have been providing onsite leachate treatment solutions using such natural and biological processes.

Physical and physicochemical processes have shown treatment effectiveness for leachate containing a significant portion of refractory organic matter. Thermal and climatic evaporation are being used at various landfills, but a concentrated leachate residual is created that is usually recirculated back into the landfill. The major challenges for leachate evaporation include a heat requirement, odor, and if applicable, exhaust vapor treatment.

Membrane treatment such as reverse osmosis (RO) has shown significant promise in removing, through a separation process, many types of contaminants including chlorides and PFAS. The major advantage of membrane processes is relative simplicity of operation; however, it needs significant energy to operate, and a concentrated leachate residual is also created. Again, vendors have supplied RO membrane leachate treatment systems for landfills. Typical RO membrane systems designed for leachate treatment operate at 600 psi to 1,500 psi operating pressure and the capital cost can be significant. An RO system of 65,000 GPD capacity can cost up to $4.5 million or more based on leachate chemical characteristics and treatment level requirements. Lower operating pressure (200 to 250 psi) RO membranes have also shown promise for cost-effective leachate treatment. Disposing of concentrate and or residual is an additional challenge with membrane systems.

Promising Solutions

As discussed above, leachate characteristics are dynamic and can be site-specific. All these treatment processes have shown promise to treat leachate to various permitted discharge criteria; however, site-specific evaluations are needed. Several options are available with varying levels of cost and treatment and leachate operators might consider evaluating alternatives for their leachate management as a Plan B or Plan C to disposing of their leachate in WWTPs to prepare for the possibility of upcoming challenges.

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OSHA: Heat Illness Prevention Campaign and National Emphasis Program

The U.S. Department of Labor's OSHA Heat Illness Prevention campaign, launched in 2011, educates employers and workers on the dangers of working in the heat. Most recently, in April 2022, the U.S. Department of Labor's OSHA has launched a National Emphasis Program to protect millions of workers from heat illness and injuries.

Dangers of Working in the Heat

Hazardous heat exposure can happen indoors or outdoors and can occur during any season if the conditions are right, not only during heat waves. Although illness from exposure to heat is preventable, every year, thousands of workers become sick from occupational heat exposure, and some cases are fatal. Fifty to 70% of outdoor heat fatalities occur in the first few days of working in warm or hot environments because the body needs to acclimate, or build a tolerance to the heat gradually over time. In a warm environment, the human body relies on its ability to get rid of excess heat through sweating and increased blood flow to the skin (i.e., heat dissipation). When the human body is unable to maintain a normal temperature, heat illnesses can occur and may result in death. Heat-related illnesses can have a substantial cost to workers and employers, including decreased performance, lost productivity due to illness and hospitalization, and possibly death.

Risk Factors

eat illnesses can affect anyone, regardless of age or physical condition. New and returning workers need to build tolerance to heat (acclimatize) and take frequent breaks. Occupational factors that may contribute to heat illness include high temperature and humidity, low fluid consumption, direct sun exposure (with no shade), extreme heat indoors, limited air movement (no breeze), physical exertion, and use of bulky protective clothing and equipment. Personal risk factors that may cause some workers to be more susceptible to heat-related illness include medical conditions, lack of physical fitness, previous episodes of heat-related illness, alcohol consumption, drugs, and use of certain medication.

Signs and Symptoms

Heat stroke is the most severe heat-related illness. The signs of heat stroke are abnormal thinking or behavior (e.g., confusion), unconsciousness (i.e., passing out), slurred speech, and seizures. A high a body temperature (>104°F) is also common. Heat stroke is a medical emergency that may result in death. Call 911 immediately, cool the worker with ice or cold water, and stay with the worker until help arrives. Heat exhaustion is the next most serious heat-related health problem. The following signs and symptoms are typical of heat exhaustion: tiredness or weakness, dizziness or lightheadedness, headache, thirst, decreased urine output, nausea or vomiting, heavy sweating, or hot, dry skin. Workers with heat exhaustion may also have an elevated body temperature (>100.4°F). Workers with heat exhaustion should be moved to a cooler area. Remove unnecessary clothing. Cool the worker with ice, a fan, or frequent sips of water. A person with heat illness may not experience all the signs and symptoms listed. If symptoms worsen, do not leave the worker alone, call 911, and get help immediately.

Prevention

Provide sufficient rest, shade or cool space, and fluids. New and returning workers need to build tolerance (acclimatize) and take frequent breaks. Follow the 20% rule. On the first day, work no more than 20% of the shift's duration at full intensity in the heat. Increase the duration of time at full intensity by no more than 20% a day until workers are used to working in the heat. Engineering controls such as air conditioning with cooled air, and increased air flow, leading to increased evaporative cooling, can make the workplace safer. Other options for keeping body temperatures down in warm environments include making changes to workload and schedules (e.g., work shorter shifts, schedule work earlier or later in the day, limit strenuous work, or take frequent breaks); proper hydration (e.g., drinking 1 cup [8 oz.] of water or sports drink every 15–20 minutes); and wearing a hat and light-colored, loose-fitting, breathable clothing if possible. Monitor yourself and others for signs of heat illness.

Employer Responsibility

Under OSHA law, employers are responsible for providing workplaces free of known safety hazards, including protecting workers from extreme heat. Employers should create a heat illness plan to protect workers

alliance
An OSHA Cooperative Program

from developing heat-related illnesses by:

- Providing workers with water, rest, and a shady or cool space.
- Allowing new or returning workers to gradually increase workloads and take more frequent breaks as they acclimatize, or build a tolerance for working in the heat.
- Planning for heat emergencies.
- Training supervisors and workers to recognize heat hazards and heat illness symptoms.
- Monitoring workers for signs of heat illness and calling 911 when needed.

All symptoms of heat illness should be taken seriously, especially during a worker's first few days. Workers who develop symptoms should be allowed to stop working and should receive evaluation for possible heat-related illness. Management should commit to preventing heat-related illness for all workers regardless of their heat tolerance levels.

For more information, contact the Florida Compliance Assistance Specialists:

Yvis Torres-Gilot - Jacksonville
(904) 562-5459
torres-gilot.yvis@dol.gov

Olja Correa - Tampa
(813) 626-1177
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Leny Chango-Oduber - Ft. Lauderdale
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Resources

- www.osha.gov/heat
- www.osha.gov/dts/osta/otm/otm_iii/otm_iii_4.html03101996
- https://nihhis.cpo.noaa.gov/
- www.osha.gov/heat-exposure
- www.osha.gov/heat-exposure/illness-first-aid
- www.osha.gov/sites/default/files/publications/heat_stress.pdf
- www.osha.gov/heat-exposure/prevention

WTE Energizes Communities

Paul Hauck P.E.

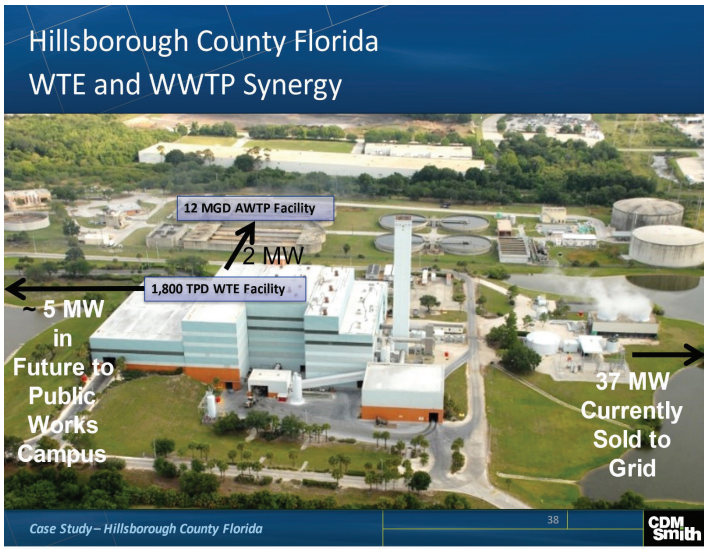
Modern waste-to-energy (WTE) has several benefits, as demonstrated throughout the past 30 years in the U.S.; primarily, it eliminates issues with vermin, birds, odors, and leachate. With more than 2,000 installations worldwide, WTE is a proven system that is universally ranked above landfill disposal in every waste management hierarchy. WTE has shown high facility availability (90 percent) and processing reliability. Many currently operating WTE facilities are more than 30 years old and, with a modest investment, are likely to continue operation for an additional 20 years.

Recovery

WTE complements local municipal recycling programs by recovering significant amounts of ferrous and nonferrous metals from the ash residue. These recovered metals typically bypass curbside and drop-off recycling programs and would typically be disposed of in a landfill. Additionally, many of the recovered metals are liberated from their original material and are easily recovered. In Europe, where bottom ash is routinely recycled, waste diversion from landfill disposal is approaching 99%. In the U.S., ash-recycling opportunities include use as construction aggregates and minerals for production of Portland cement.

Sustainability

WTE is sustainable—it offers a 90% reduction in volume and a 75% reduction in weight of solid wastes that require disposal; it also recovers embodied energy from wastes that are indigenous and renewable. Mass-burn combustion, a type of WTE, requires no pretreatment other than the occasional removal of bulky items. It results in waste stabilization by producing a chemically benign and biologically inert ash residue that is suitable for numerous beneficial reuses. WTE helps electric utilities reduce reliance on fossil fuels, improves local fuel diversity, and provides reliable baseload renewable electrical power to the local electrical grid. WTE can recover an order of magnitude (7 to 10X) more electricity—from the same mass of waste—than landfill gas-to-energy technology. Combustion of municipal solid waste (MSW) in a WTE facility results in significant reductions in greenhouse gas emissions. More than 1 ton of CO_2-equivalent emissions are avoided for every ton of MSW combusted, owing to avoided methane emissions from disposal of MSW in landfills, avoided CO_2 emissions from generating an equal amount of electricity using fossil fuels, and avoided CO_2 emissions from mining virgin materials for manufacturing of new ferrous and nonferrous metals.



Economic and Community Benefits

WTE stimulates the local economy by providing high-quality jobs and careers during construction of and throughout the 45- to 50-year service life of a WTE facility. WTE also provides economic benefits via increased tax base and purchase of goods and services throughout the facility's service life.

WTE owners and operators provide additional services to a community, including:

1. Co-location with other municipal operations (wastewater treatment facilities, landfills, and public work campuses)

2. Internal use of WTE renewable electricity for powering other municipally owned infrastructure (water and wastewater treatment, transfer stations, recycling facilities, and public works facilities)
3. Use of WWTP reclaimed water and harvested rainwater from the rooftops for use in WTE cooling, process makeup, fire protection, and irrigation
4. Disposal of local and regional special wastes, including:

    a. WWTP biosolids
    b. Residuals and rejects from curbside recycling programs
    c. Used tires and oils
    d. Bulky wastes
    e. Electronic wastes
    f. Medical and hospital wastes
    g. Contraband (drugs and weapons)
    h. Expired and unused pharmaceuticals
    i. Marine wastes
    j. Yard and vegetative wastes
    k. Storm debris
    l. Combustible construction and demolition wastes
    m. Wastes in need of assured destruction
    n. USDA Regulated Garbage (international waste from ships and airplanes)

Future innovation of WTE and uses for its renewable energy may include:

1. Charging stations for use by municipally owned electric vehicles (transit, police, public works fleets).
2. Integration with anaerobic digestion technology for generation of renewable natural gas (RNG) from source-separated organics. Biogas will likely generate higher revenues than currently experienced by selling electricity to the local utility.
3. Integration with a front-end mixed waste processing facility (MWPF) for recovery of additional recyclable materials. The use of an MWPF may also eliminate one of the curbside collections for yard waste and/or source-separated recyclables.

A Valuable Component

WTE is a valuable component within a community's Integrated solid waste management system. WTE can process both routinely collected municipal solid waste and other special and problematic wastes—it enhances rather than competes with a community's curbside recycling program.

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Images courtesy of CDM Smith.

It's an Election Year!
Are You Registered to Vote?

2022 is an election year in Florida. The Governor, Attorney General, Commissioner of Agriculture and Consumer Services, Chief Financial Officer, U.S. Senators, and Congressional candidates are up for election and will appear on the fall ballot along with all 120 State Representatives and 40 Senate seats. There will be three constitutional amendments on the ballot as well.

As a citizen of Florida, it is your duty to vote in the upcoming elections. However, with recent changes in voting laws and new district numbers, it is important for you to make sure your voter registration is up to date.

Check with your local supervisor of elections office. Each county has a supervisor of election's office with a website to help you learn more about election dates, candidates, and if you need to apply for another registration card. Alternatively, you can do so online at: https://registration.elections.myflorida.com/en/CheckVoterStatus/Index

First, check the information on your current card. Did you move? If yes, make sure to update your address.

Do you want to change your political party? Again, you can make that change through the supervisor of elections' office. Another item you will need to check is your signature. If it has changed, make sure to go to the supervisor of elections' office and update your signature.

Primary elections will be held on August 23. The primary election is for registered Republicans and Democrats only. If you are an Independent or No Party Affiliate (NPA), you are not allowed to vote in the primary election.

General elections are scheduled for November 8. If you missed the deadline for the primary election, then you must be registered by October 11.

Before you vote, get to know the candidates. If elected, they will be making decisions on a variety of issues that may affect your life such as business regulations, health care, education, the environment, and taxation. To get more information about a candidate's position on an issue, go to their website. Every candidate has one!

If you find a candidate that you would like to support, you can contribute to their campaign (maximum contribution is $1,000) or work on the campaign in other ways like delivering signs, walk door-to-door or wave signs on the street corner.

The most important thing for you to do is VOTE!

Keyna Cory is President of Public Affairs Consultants, a governmental consulting firm based in Tallahassee, FL. She can be reached at keynacory@paconsultants.com.

A Good Time Was Had by All!

Tammy Hayes

The FL SWANA Summer Conference wrapped up last week to rave reviews and outstanding attendance with more than 200 people pre-registered and an unprecedented number of new attendees! The Naples Grande Beach Resort was a lovely venue and many took the opportunity to bring their families and enjoy a little extra time there in the sun and sand.

Then there was the solid waste portion of the conference. A tour of the Anthrex orthopedic device manufacturing facility kicked things off on Monday, followed by the Board of Directors meeting, and a welcome reception in the Exhibit Hall. The technical sessions on Tuesday and Wednesday were varied and informative including traditional presentations, panel discussions, online polls, YP interviews, and round tables on topics from transfer stations to leachate, planning to new technologies, and hiring to recycling. What else could a garbage guy or gal want?

The casino night dinner, thanks again to Autocar, provided good food, great fun, and even better fellowship! It was so nice to see everyone enjoying themselves while winning prizes and networking with their peers. Please consider getting more involved to keep these conferences interesting and fun for all of us - join a committee, submit an abstract, or become a sponsor. Most of all, complete the online follow-up survey to let us know what you liked and what you didn't, and feel free to offer any suggestions. We look forward to seeing all of you at our Winter Meeting, February 20-22, 2023, at the brand new Drury Plaza in Orlando!

Hillsborough County Addresses Covid-19 Collection Issues

Damien Tramel, Marc Rogoff, and Jill Gaffigan

Hillsborough County, FL currently provides residential automated collection services to residential units in its unincorporated area. Residential customers receive twice per week automated curbside garbage services, once per week automated curbside recycling services, and once per week manual curbside yard waste service. In 2013, Hillsborough County awarded franchise agreements to Waste Connections, Inc., Republic Services of Florida, and Waste Management of Tampa. The term of the franchise agreement was for seven years, with a three-year renewal option. The end of the initial seven-year term was September 30, 2020.

From 2013 to 2020, the County recognized a substantial growth surge of approximately 20 percent. As a result, modifications to the franchise agreements were issued in June 2020 to align with the growth rate. In June 2021, the County awarded new franchise agreements to three franchise collectors—FCC Environmental Services, Republic Services of Florida, and Waste Management of Tampa. Under the new franchise agreements, residential collection services commenced on January 31, 2022.

Pandemic Collection Issues

Since the outbreak of COVID-19 and until the middle of June 2020, franchise collectors provided continuous and uninterrupted collection services for garbage, yard waste, and recycling. However, that changed on June 16, 2020, when Waste Connections, Inc. (WCI) notified the County that they had employees who could not perform their collection duties due to COVID-19. At that time, WCI experienced a significant reduction in staff, which greatly impacted their ability to provide collections to residential customers on their designated pick-up day (**Figure 1**).

Figure 1 - Uncollected roll carts.

Due to the nature of the situation and the number of employees who were unable to report to work, WCI declared a Force Majeure condition (events outside of their control) and advised the County that collection services would be impacted. Hillsborough County staff worked with WCI to prioritize garbage collection services to maintain public health and safety. A modified collection plan was developed, and the County allowed recycling to be commingled with garbage for pickup. Additionally, Hillsborough County worked with its Communications & Digital Department to develop a communications plan for residents impacted by the changes. The messaging channels used included the social media platforms of Facebook and Nextdoor, media releases distributed to all local news outlets, and direct communication, which included placing stickers on carts.

The most significant impacts were felt in late June 2020 when routes were not completed (Figure 1) and the garbage was not picked up. Recognizing that WCI did not have the drivers needed for all pickup services and knowing that public health and safety were a priority, the decision was made to suspend recycling pickup and focus on collecting garbage and yard waste. The strategy proved successful, and all garbage routes resumed their regular collection schedule.

This was a dynamic situation and one that Hillsborough County and WCI worked through using all available resources. Although we were optimistic that WCI would be fully staffed soon, the uncertainty of COVID-19 exposure could not be guaranteed. As a result, and in an effort to further address the impact the pandemic had on our collection system, WCI applied the following mitigating solutions: job fairs, bringing in employees from affiliated companies, $5,000 retention bonuses, immediate $2 an hour wage increases, and $125 weekly bonuses for supervisory employees. WCI employees eventually returned to work, and regular collection schedules resumed.

Many private and municipal haulers have also initiated similar campaigns to increase their employee retention rate. For example, Casella held a lottery in which it awarded five $1,000 prizes to workers who registered that they had been vaccinated. Amid

staffing shortfalls, cities like Atlanta recently started a program that includes a $500 signing bonus. Others have increased pay and launched in-house, paid commercial driver license training programs to help retain employees. Other communities, including Boston, San Francisco, Tampa, and Tucson, implemented regulations requiring vaccinations or frequent testing for city employees. Given the controversy over masking policies and vaccine hesitancy, it is hard to say how this will impact collection staffing woes.

Solid Waste Collection Contingency Plan

The Hillsborough County Solid Waste Management Department (SWMD) had a contingency plan to respond to service interruptions related to hurricanes or other national disasters, including a pandemic. The plan includes prioritizing garbage collection, as it represents a health and sanitary concern. There are five phases to the plan that can be activated when needed:

1. Direct the franchise collector to commingle recycling with the garbage.
2. Discontinue either recycling and/or yard waste collection.
3. Discontinue twice-a-week garbage collection.
4. Use the current franchise collectors to provide collection services in the impacted zone.
5. Activate emergency debris contractors to complete solid waste collection services.

Additionally, the emergency debris contractor was on standby in the event collection services were further impacted by the pandemic.

Emergency Collection Request for Proposal

To prepare for continued and future service interruptions, the County employed multiple strategies including asking Geosyntec to develop an RFP for an emergency solid waste collection contract to employ independent collection contractors to assist with routes in the event of future collection failures. Geosyntec was charged with developing an emergency RFP under a short timeframe of five days to support the recovery from these unacceptable service conditions. Services included leading the overall strategy, developing a geographic and operational plan, drafting the RFP scope, creating a pricing strategy, identifying and including necessary exhibits, and aligning our efforts with the County's procurement system. The scope of the items that were developed included terms, general obligations of successful bidders, definitions, collection service and equipment specifications, communication, and reporting protocols, among many others.

The Wrap Up

Hillsborough County SWMD monitored the three franchise collectors' daily absenteeism and other potential solid waste impacts from COVID-19. WCI was the only franchise collector in Hillsborough County that experienced significant service impacts due to the pandemic. WCI's employees returned from quarantine, and all collection services resumed on schedule. Additionally, Hillsborough County Attorney's Office worked with WCI to determine an equitable reduction in payment due to loss of services during the period when service was interrupted due to COVID-19.

Lessons Learned

The COVID-19 pandemic has impacted more than 180 solid waste collection programs throughout the nation. Many solid waste collection programs have reduced or altered collection schedules.

Hillsborough County's inability to quickly and effectively communicate with customers was a challenge. Communication to residents of the rapidly evolving service interruptions was coordinated using the County website, social media channels, and local news outlets. However, based on feedback from residents and route observations conducted by staff, it appeared that many residents did not receive the message. In response, SWMD worked with their Communications & Digital Media Department to develop a plan to be able to provide immediate customer notification by requiring the franchise collectors to place cart stickers on each uncollected cart. The stickers directed residents to Hillsborough County's website and phone number to get more information on the service interruption. Additionally, SWMD is in the process of incorporating a digital application for residents to receive instant updates regarding the solid waste collection and disposal service. This is anticipated to be available to residents by October 2022. We are still developing this project; it should be live in October 2022.

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Figure courtesy of Marc J. Rogoff

Member News

FL SWANA Collection and Transfer Committee Road Trip to Ocala
Marc J. Rogoff

Several members of the Committee (Gene Ginn, Earl Gloster, Sarah Gustivus-Graham, and Marc Rogoff) attended a tour of new electric vehicle (EV) garbage trucks in Ocala on May 17. The Committee was able to be provided a briefing on their operations by Dwayne Drake, Ocala's sanitation division head, and also a drive along!

One of Ocala's automated trucks with BEV Technology.

The city of Ocala is among the first municipalities to adopt battery electric (BEV) refuse technology in the country. Ocala received an EPA grant to replace heavy-duty diesel-fueled trucks with zero-emission BEVs and chose to partner with New Way and BYD, which has U.S. headquarters in Los Angeles.

Impressions were:

- It was very quiet and handled well. It reminded me of my Tesla 3.
- The driver was able to gain access to the cans even with customer obstructions. The truck maneuvered well.
- Great packing.
- It was able to complete a route of 1,200 homes on a single charge—roughly 70+ miles.
- Maintenance costs are low except for wear of tires—almost no wear on the brakes and no oil changes or belts to worry about for the engine.
- Lots of startup software issues at the beginning but a Chinese company (they are the world's bus EV manufacturer) figured it out.
- Issues with charging (three phase) on time of day—the ability to program is an additional cost.

The City of Ocala has almost six months' worth of data. They will be

View of the city's charging station.

receiving a fully electric Mack EV truck in June and we are invited back for another tour at that time. These were shown in Las Vegas at Waste Expo in May and are being driven back to the Mack Lake City Center to complete the software and hardware upgrades. FYI: Miami-Dade County is getting a few of those soon! Their goal is to charge these units with power from their WTE.

Marc J. Rogoff is Senior Consultant at Geosyntec Consultants and Co-Chair of SWANA FL Collection and Transfer Committee. He can be reached at MRogoff@geosyntec.com.

Miami-Dade County Expands Used Oil Disposal Program
Frank Calderon

If you have ever changed your car's oil, then you know one of the more challenging aspects of the task is what to do with the four to six (or even more) quarts of dirty, icky, nasty motor oil you now have on your hands (and your shirt, and your face, etc.).

Customers of the Miami-Dade County Department of Solid Waste Management (DSWM) who take care of their own cars now have it a little easier. DSWM has recently added a number of additional sites that will accept used motor oil from customers—with more expected to come in the future. "We went from five sites that accept used motor oil at the start of this year, to now eight, with more to come," said Mike Fernandez, DSWM Director.

At the start of 2022, DSWM accepted used motor oil at its two Home Chemical Collection Centers

(household hazardous waste drop off) and three of its 13 Neighborhood Trash and Recycling Centers (trash drop-off sites known as TRCs). Used oil collection was added to three TRCs earlier this year, bringing the total number of these centers accepting used oil to six, and the overall total number of sites under DSWM control to eight.

The objective is to get residents who do their own mechanic work to properly dispose of used motor oil, rather than pouring it onto the ground or into storm drains. Miami-Dade County's sole drinking water source is the Biscayne Aquifer, a unique, shallow groundwater source that underlies most of Miami-Dade and Broward counties, and part of Palm Beach County. Improper disposal of used motor oil could contaminate the source of drinking water for millions of south Floridians.

"Part of our mission is to protect our environment and having these additional locations will make disposal more convenient for do-it-yourselfers, and will help us further this goal," said Mr. Fernandez.

Frank Calderon is Communications Manager for the Miami-Dade County Department of Solid Waste Management. He can be reached at (305) 514-6034 or visit www.miamidade.gov/solidwaste.

DSWM Director Mike Fernandez (black shirt, center) and Miami-Dade County Chief Operations Officer Jimmy Morales (light-colored shirt, right) cut the ribbon commemorating the opening of the used oil collection facility at the South Miami Heights TRC. They are joined by representatives of Miami-Dade County District 9 Commissioner Kionne L. McGhee, as well as DSWM staff and contractors.

DSWM Director Mike Fernandez (left) and Miami-Dade County Chief Operations Officer Jimmy Morales pour the first ceremonial quarts of oil at the Palm Springs North TRC used oil collection facility. Present at the ceremony, but not depicted, were a representative for Miami-Dade County District 13 Commissioner René Garcia, as well as DSWM staff and contractors.

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February 20-22
Lake Buena Vista, FL

2023 Road-E-O
April 28-29
Tampa, FL

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