SWANA
Pennsylvania Keystone Chapter
SOLID WASTE ASSOCIATION OF NORTH AMERICA

The Keystone Keystone

▸ 2021 SUMMER EDITION

Written For the Solid Waste Professionals of the Keystone Chapter SWANA

Inside this issue

A Message from the Keystone Chapter President: Michele Nestor

"Are we there yet?" That nagging inner child asks in exasperation. The current pandemic has taken us on a journey through a corn maze with conflicting direction and timelines subject to change without notice. Absent tangible mile markers, forecasting the return to normalcy is somewhat like reading tarot cards. Such is the dilemma the Keystone SWANA Board of Directors and the PWIA Steering Committee once again faced in determining whether or not to hold the Annual Joint Fall Conference.

Confidence that the vaccine would eliminate all social distancing constraints was overshadowed by the escalating number of new infections amongst the unvaccinated and the ever-changing barrage of variants that even vaccinated folks could contract. As much as we long to interact with old friends and colleagues, we have a responsibility for the safety of our members and vendors. So, regrettably this year's event has been cancelled. We have rescheduled for September 7 and 8, 2022 .

To compensate for the long span between our annual get together, we arranged for a couple of subject focused one day events that are reminiscent of our technical seminars of the past. The first will target recycling related topics including the DEP's recent waste composition study. A discussion on advanced recycling is planned to include what it means, the processes that qualify, and the anticipated markets. The Recycling Markets Center will provide an update on their ongoing consumer ewaste surveys and how proposed ewaste legislation might impact the remaining devices in the waste stream. We also hope to feature experts on micro plastics and their known impact on the waters of the Great Lakes, and the rivers and streams in Pennsylvania. The Recycling Summit is scheduled for March 15 with set-up on March 14, 2022.

Our second event is a Safety Summit on May 18 with set-up on May 17, 2022. The agenda is still in the developmental stages, but an overriding theme will be lessons learned from COVID.

We will be sending out more information on all three events in the near future. We are confident that these Summits will be an added benefit to our members. Please mark your calendars. We hope to see you there.

Michele Nestor - Chapter President

Common-Sense Solutions to Limit Leachate

Leachate management and disposal can be one of the largest cost line items for an operating landfill in non-arid parts of the country. Additionally, leachate is getting more difficult to dispose of for several reasons, including emerging contaminants such as PFAS and PFOS. So, let's look at some potential leachate generation causes and common-sense solutions to limit leachate production in the first place.

Stormwater management pond location

Many landfills are constructed to base grades that are below the surrounding natural grades. This can create challenges to convey stormwater away from a newly constructed landfill cell. One solution used by many sites is to excavate a stormwater management pond in the bottom of the excavation just outside the landfill cell footprint. While this may seem like a pragmatic solution, there may be longer term consequences that prove to be costly.

Generally, these stormwater ponds are not sized to manage a particular storm event, and the lowest freeboard edge is typically the top of the adjacent cell berm. Additionally, as the cell fills to higher elevations, the area tributary to the pond increases, sometimes substantially. What can result from large storm events is overtopping of the cell berm with the stormwater having an almost direct connection with the leachate drainage layer on the sideslope of the cell.

In the longer term, the stormwater tends to saturate the underlying soils, creating a groundwater mound. When the next cell is constructed where the pond is located, a large over-excavation may be necessary to achieve stable subgrade for landfill construction. The over-excavation and structural backfill can be an unforeseen condition that leads to a large change order for the contractor.

If there is no way to convey the stormwater away from the adjacent cell, an option is to line the stormwater pond and the adjacent landfill sideslope to keep water out of the landfill. It may also be necessary to operate a temporary automated pump station to remove water from the pond.

Limit run-on/run-in

With few exceptions, landfills should be designed with a perimeter drainage swale to convey water around and away from the landfill. The perimeter swales should be designed to intercept surface water that may be flowing toward the landfill that could end up in the leachate collection system. As the landfill extends above grade, the perimeter swale allows the surface water running off the sideslope to maintain velocity until in the swale, which should limit infiltration through daily or intermediate cover.

A perimeter swale may need to be lined to limit infiltration or to prevent erosion, or both. In very permeable soils, perimeter swales that hold water have the potential to cause sideslope instability of the landfill cell sideslope grades before waste is placed up to the surrounding elevation. If perimeter swales have a slope of 5 percent or more, there may need to be some mechanical protection to limit erosion.

Perimeter swales also provide a place to direct runoff from the perimeter road, thereby providing a more stable road surface.

Grade control to promote runoff

Water needs a gradient to runoff from the landfill. Once the landfill reaches and extends above perimeter grades, it is imperative that the landfill operators create and maintain a gradient with the surface grades of the daily and intermediate cover. The recommendation is to work with a minimum of a 4 percent slope on the top deck to promote runoff of incident precipitation and snow melt. The runoff should be directed to lined or armored down chutes on the sideslopes to limit concentrated water flow on unprotected sideslopes, which generally results in deep erosion rills that require repair.

Additionally, landfill roads should be graded to promote runoff, including grading roads with a crown profile to direct water to roadside swales and other stormwater management features.

Limit size of working face

There are many reasons to limit the size of the working face of an active landfill and limiting leachate production is one of them. The open area of the working face generally allows infiltration of incident precipitation. Therefore, 1-inch of rain on a 1-acre (roughly 200 feet by 200 feet) working face produces about 27,000 gallons of leachate. A 1-acre working face is a very small working face for many landfills, and a 1-inch rain over the course of an 8 or 10-hour day is a common occurrence in many parts of the country.

Cover material selection and application

Daily and intermediate cover materials are a landfill's front-line defense against leachate generation from precipitation. Many landfills are using on-site soils for cover material based on cost considerations. Few sites have on-site soil that is ideal for use as cover material. Ideal or not, it is critical to strip cover soil before placing additional waste. Cover soil left in place beneath additional waste fill will contribute to lateral movement of leachate (and possibly landfill gas) within the landfill, which may cause breakouts on sideslopes.

Regardless of the soil used, rolling the cover soil with a smooth-drum roller dramatically decreases the amount of precipitation that infiltrates into the landfill though the cover. There are several manufacturers that make single smooth drum rollers that can go up and down slopes as steep as 3 horizontal to 1 vertical (3H:1V).

If there is an option to use material other than on-site soils for daily and intermediate cover, consider using tarps, a tarping machine with lightweight single-use plastic tarp, or cementitious spray-on product. These Alternate Daily Cover (ADC) products rely on proper use to be effective.

Exposed geomembrane

If there are portions of the landfill that will not be receiving additional waste for 2 or more years, installation of a temporary exposed geomembrane cover may make sense. The geomembrane may be a thin scrim-reinforced material with sewn seams, or a heavier 20, 40, or 60-mil geomembrane with heat fused seams. These products are typically available in several colors to address aesthetic impacts. Geomembranes provide the advantages of eliminating most infiltration and providing control of fugitive landfill gas. These advantages create challenges with managing the intensity and volume of runoff and managing landfill gas that may accumulate beneath the geomembrane. The challenges may be limited through proper design. Design considerations also need to include prevention of wind uplift.

Swale liners

Anytime there is stormwater in swales, the water is infiltrating. The longer the water stays on the landfill, the more water is infiltrated to become leachate. Consider lining stormwater swales on portions of the landfill that are dormant long enough to warrant construction of stormwater management features. Liners can consist of geomembranes or other impervious materials designed to line ditches such as SmartDitch. It is critically important to prevent undermining of swale linings for them to function properly, so design them appropriately.

Limit stormwater retention time on/above the waste

Stormwater residence time on the landfill needs to be minimized to limit the volume of leachate produced by infiltration. As mentioned above, the longer water is on the landfill, the more water infiltrates to become leachate. Swales should be constructed with as much slope as possible, and as many downchutes as feasible should be constructed to shed water off the waste as quickly as possible into the perimeter swale and detention basins. Areas where stormwater ponding occurs should be regraded as quickly as possible to eliminate the ponding. Even where liners are installed, the water should not be allowed to pond as the liners may have compromises allowing water to penetrate. Get the water off the landfill as quickly as possible!

Vegetative cover maintenance

Vegetative cover on the landfill's interim or final cover will provide additional uptake of moisture from the cover soils

through evapotranspiration, and more importantly keep the soil on the slopes from eroding. If there are areas where vegetation is stressed or otherwise not able to grow, identify the reason for the distress, repair it, and establish vegetative cover. The vegetation will require periodic mowing to limit establishment of woody growth and to limit potential wildfire hazards. Be careful about letting vegetation get too thick or high in swales and other stormwater conveyance features so that it doesn't inhibit flow to get the water off the landfill.

Solidify rather than bulk liquid wastes

Finally, for landfills that process wet waste to solidify it before landfilling, be sure to use reagents mixed with the wet waste that will permanently bind the liquid rather than simply absorb it. Absorbing reagents, such as sawdust or auto shredder residue, may hold water until additional waste is placed over it. The additional overburden pressure can squeeze the water out of the absorbent, creating large volumes of leachate. This can not only create unwanted leachate but has potential to create areas of instability within the landfill and may cause leachate breakouts on the sideslopes.

Summary

Most of the discussion above centers around common-sense solutions related to design and operation of a landfill. Due to the complexity of running a landfill site, sometimes these issues get overlooked or ignored. If you want to limit leachate production, stick to the fundamentals and use common sense in your approach. As always, there will be a balance to be struck between cost, ability to execute, and results

Written By: James A. Chabot,
(Sanborn, Head & Associates, Inc.)

SWANA Mini-Tech Watch

Millfair Compost and Recycling Center

The Keystone SWANA hosted the Millfair Compost and Recycling Center Mini-Tech on Tuesday, August 24, 2021. The Mini-Tech began with a presentation and tour of the facility followed by lunch.

The Millfair Compost and Recycling Center is an inter-municipal effort between Millcreek and Fairview Townships (Erie County) that is located on the border of the two municipalities. The 5-acre composting facility has been open since 2004 and receives approximately 25,000 visitors each year.

Utilizing windrow-style composting methods, this facility accepts 1,500 tons of leaf waste and 5,000 tons of yard waste annually. The organic waste is processed into high quality compost and mulch products, which is then made available for sale back to residents, landscapers, and businesses of the community.

Attendees at the Millfair Compost and Recycling Center Mini-Tech

Photo Credit: Denise Wessels

To be sure you don't miss out on future mini-tech's like this one, check out our website at KeystoneSWANA.org and look for the Events Tab.

Metals Recovery from MSW Ash

The Mini-Tech will begin with a presentation followed by a walking tour of the facility. A networking lunch will follow the tour.

In April 2016, LCSWMA entered into a long-term contract with Inashco North America, Inc. to site a metals recovery facility (MRF) next to the Frey Farm Landfill. While LCSWMA's WTE facilities currently use in-line metal recovery systems, only larger metals are removed. Inashco offers an advanced metals recovery system to remove pebble-sized metals present in the ash. This includes both ferrous (iron) and non-ferrous (aluminum, copper, brass, zinc, gold, silver, etc.) metals.

In 2018, Inashco constructed the MRG, which processes around 650 tons of ash each day (165,000 annually) and recovers about 22 tons of metals (8,300 tons annually). Not only does this innovative project remove and recycle metals that would have otherwise been landfilled, but it's helping to extend the life of the Frey Farm Landfill.

Where:
Frey Farm Landfill
3049 River Road
Conestoga, PA 17516

When:
TBD - Event is being rescheduled

Additional Information:
Registration is $15 for SWANA members and $25 for non-members. Space is limited and participants are required to bring safety toe boots.

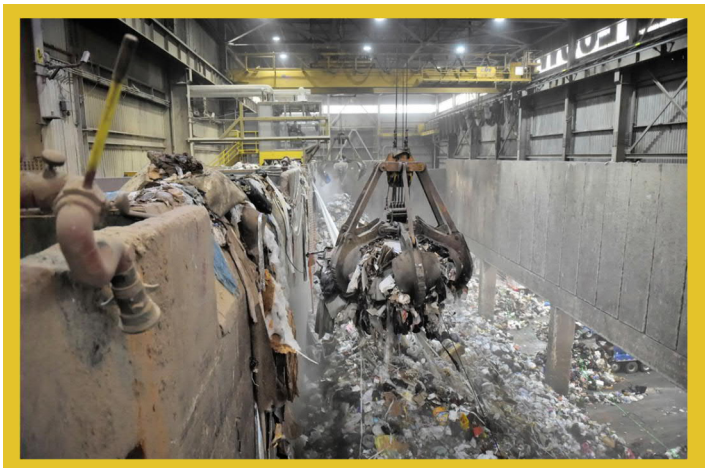
Be sure to check the keystone SWANA website for the most up-to-date information at *keystoneswana.org*

Turning 30 - A Look at the Lancaster County WTE Facility

Piled in thousand-ton heaps, garbage was a putrid mountain, stacked about two stories tall in a concrete pit last month in rural Conoy Township, where the rubbish is seen as more than just discarded trash to be landfilled. Instead, trash piled at Lancaster County's Waste-to-Energy Facility has served as fuel for three decades, feeding a process that generates usable electricity, saves landfill space and reduces related greenhouse gas emissions. That's according to officials at the Lancaster County Solid Waste Management Authority, which is celebrating the plant's 30th year. To date, 10.7 million tons of trash has been combusted at the facility, authority officials said.

"It's the best way to process on a mass scale at this place and time," authority CEO [and former SWANA President] Bob Zorbaugh said, referring to the trash-related needs of the county's more than half a million residents.

That's true, Zorbaugh claims, even though the combustion process is not pollution-free. *"We don't want to pretend that the facility doesn't have any emissions. It does,"* he said before weighing that against the alternative. *"You know, most communities in the United States have just a landfill,"* Zorbaugh said. *"Do you just want to landfill everything, or do you want to do something different with the technology available?"*



Operators control large grappling hooks to move garbage into a chute where the waste falls into the incinerator to burn during a tour of the Lancaster County Solid Waste Management Authority's waste-to-energy facility in Bainbridge, Pa., on Wednesday, June 16, 2021

Photo Credit: (Suzette Wenger/LNP/LancasterOnline via AP)AP

The authority has a landfill, too; the 96-acre Frey Farm site in rural Manor Township that began operating in 1989. However, the county likely would have needed two more landfills of the same size if it wasn't for the waste-to-energy program, said Katie Sandoe, an authority spokeswoman. Space is saved because the process turns trash (mostly the kind of rubbish that's put out for collection at the curb) into ash, reducing its volume by 90 percent before it's sent to the landfill. Over the facility's 30 years, that equates to a reduction of **17.8 million cubic yards** of waste, enough to fill Penn State University's Beaver Stadium 12 times, Sandoe said.

1,800 degrees

Authority officials shared those figures before showing off the process [on June 16th], leading the way into the facility as garbage clattered to the floor from the back of a filled tractor-trailer before being pushed into the pit, where as much as 9,000 tons of rubbish can be piled. Overhead, crane operators used massive, claw-like grapples to scoop trash from the pile before lowering it into chutes that feed the site's three boilers, which burn at a minimum of 1,800 degrees to each incinerate 400 tons of trash a day. The heat warms water-filled tubes surrounding the boilers to create pressurized steam, which drives a turbine to generate electricity.

Running continuously, the process generates 36 megawatts of electricity at a given time. The facility itself consumes six of those megawatts, and the other 30 are sold into the local power grid; enough to power more than 20,000 homes, Sandoe said. Energy-related revenue from the facility's output amounted to about $9 million in 2020, Sandoe said.

Discarded metal items, not burned up in the process, can be recovered from the ash and sold into recycling

markets, Zorbaugh said. He showed off piles of the reclaimed metal during the tour, pointing out dumbbells, lugnuts, tin cans, gears and mattress springs. *"We are able to extract and recycle thousands of tons of metal a year,"* he said, noting that those materials would have been landfilled without the combustion process. Annually, metals recovered at the facility generate an average of about $700,000 in revenue, Sandoe said.

Environmental impacts, tradeoffs

But for all of those reported benefits, Sandoe acknowledged that there are environmental drawbacks of running a 24/7 waste-to-energy facility, including emissions of harmful gases, mostly carbon dioxide, which causes climate change, and poisonous nitrogen oxides that contribute to air pollution. In an average year, those nitrogen oxides emissions total about 530 metric tons, and carbon dioxide equivalent emissions total about 161,198 metric tons, Sandoe said.

She cited U.S. Environmental Protection Agency data to compare the facility to the nearby Brunner Island power plant in York County, which in 2019 produced 2,158,706 metric tons of carbon dioxide equivalent emissions, or about 13 times more than the Waste-to-Energy Facility. [For reference], the average passenger vehicle emits about 4.6 metric tons of carbon dioxide per year, according to the EPA.

Plans were controversial

Critics have long expressed fears about the potential release of other toxic pollutants, including dioxins, toxic chemical compounds that can negatively impact human health. Those concerns have existed locally since even before the $115 million facility was formally dedicated in June 1991, according to LNP/LancasterOnline archives. *"Let us not leave to our children and our children's children an inheritance of bad air, contaminated water,"* one letter writer wrote, opposing combustion at the site ahead of its opening.

Steven Mohr, chairman of the Conoy Township Board of Supervisors, recalled that opposition. He was on the board when the facility site, between River Road and the Susquehanna River, near Bainbridge, was first announced as a potential location. *"They just wanted to*

The south side exterior of the Lancaster County Solid Waste Management Authority, Waste to Energy facility in Bainbridge, Pa., is shown Wednesday, June 16, 2021.

Photo Credit: (Suzette Wenger/LNP/LancasterOnline via AP)AP

come up with anything they could to stop it," Mohr said, adding that police were asked to attend at least one related township meeting so *"it didn't get out of hand."* Currently, there are no active local opposition groups to the waste-to-energy facility, Sandoe said.

To Mohr, it's the ideal location, tucked away from most developed areas on a rural road that can handle the hundreds of trash trucks that drop off waste at the facility. The thousands of tons of smelly trash inside are barely detectable outside of the building's footprint, he said, an assurance authority officials gave him prior to the build. *"It lived up to the sales pitch,"* he said. *"There isn't any negative."*

Mohr said the per-ton host fee the authority pays to be sited in the township has been a major benefit to Conoy. Amounting to about $60,000 to $70,000 in revenue a month, the fee has allowed the township to eliminate local taxes, he said. *"Now all of those people that were against it, they want to help spend the money,"* he said with a laugh. Still, the potential for pollution problems exists, according to the EPA, which notes a number of related regulations, standards and controls that were implemented to combat harmful emissions during the 1970s to 1990s.

Emissions monitored in real time

As he led a tour of the facility [on June 16, 2021], Zorbaugh moved outside to the back of the plant, where he pointed toward a collection of structures and stacks, all designed, he said, to control pollutants and ensure compliance with federally mandated standards. Readings from those control systems are transmitted live to state regulators, and any interruption or violation of that process comes with consequences, Sandoe said.

"Some of the misunderstanding around modern waste-to-energy facilities comes back to this public memory of old incinerators of the '60s and '70s that did have a negative impact on the environment," she said. *"That's not exactly what we are doing here."*

Sandoe also touted the process as an environmental benefit, pointing out that burning trash for electricity eliminates the amount of raw waste left to rot in traditional landfills. Decomposing waste releases methane gas, a significant contributor to climate change. While officials could not provide methane-specific numbers, it's been reported that every ton of waste processed in a waste-to-energy facility offsets a ton of carbon dioxide equivalent emissions, Sandoe said.

Zorbaugh said he hopes the authority will remain innovative, especially when it comes to new opportunities for recycling and reuse in the waste stream. *"But until that happens, we need to do something with this waste,"* Zorbaugh said, guessing that waste-to-energy will remain a viable option. In fact, the facility was designed with the future in mind, built with extra space to allow for population growth. *"Thirty years later, we still have capacity,"* Zorbaugh said.

Written By: Sean Sauro, LNP newspaper
Published: July 10, 2021
Source: https://www.pennlive.com/news/2021/07/this-central-pa-plant-has-turned-millions-of-pounds-of-trash-into-electricity.html

Bob Zorbaugh, CEO of the Lancaster County Solid Waste Management Authority, speals between two sections of the waste -to-energy production facility in Bainbridge, Pa., on Wednesday, June 16, 2021.

Photo Credit: (Suzette Wenger/LNP/LancasterOnline via AP)AP

CCSWA Kicks Off Zero Waste Plan

Officials in Chester and Lancaster counties have begun exploring ways to reduce waste for the 450,000 people it serves in 49 municipalities, with the local landfill having just 15 years left of permitted capacity, reports the Daily Local News. As part of this initiative, the Chester County Solid Waste Authority (CCSWA) has launched its Zero Waste Plan, which plans to reduce waste at the source through an information campaign targeted to consumers and municipalities, as well as by establishing a permanent household hazardous waste collection facility.

Patti Lynn, recycling resources manager for the CCSWA, says that the Zero Waste initiatives are *"long term,"* with goals extending into 2022 and 2023 including outreach on zero waste strategies to businesses, business associations, chambers of commerce and institutions. "*People have a sense of being able to control garbage over the last 30 years through recycling mandates. Thirty years ago, nobody wanted to do it, but it has evolved into a habit,"* Lynn said. *"But recycling can only take us so far. It's time to rethink solid waste from beginning to end."*

At West Chester University, sustainability efforts are well underway, according to Bradley Flamm, director of West Chester University's Office of Sustainability. He described a variety of campus zero waste initiatives, many initiated by students in collaboration with faculty and staff on the university's Sustainability Council. "*Many people understand the importance of diverting materials that leave our campus for reuse, repurposing or recycling rather than going to a landfill or incinerator,"* he said. *"But such diversion rates are rather complicated and don't fully capture the fact that we strive to be more efficient in the materials we bring on campus and use in the first place."* Flamm adds that WCU prioritizes working with a hauling company that can offer a comprehensive recycling education program; effective collection, sorting, bundling and marketing of recyclable materials; and waste disposal in a landfill with effective environmental management practices that capture landfill gases for productive uses, such as heating or electricity generation.

In terms of effective sustainability efforts for businesses, Kimberton Whole Foods' Pat Brett, who founded the company with her husband Terry, said they created a Climate Committee with volunteer team members from each of Kimberton Whole Foods' stores. The six stores began by focusing on packaging and food waste at food service areas. Brett notes that employees are a key to success, with ongoing education efforts to ensure effective recycling practices. Kimberton Whole Foods continues a multitude of waste reduction programs including partnering with farmers to provide food waste for animal feed.

Written By: Haley Rischar, Waste Today Magazine

Published: February 15, 2021

Source: https://www.wastetodaymagazine.com/artilce/pennsylvania-county-zero-waste-plan-landfill-capacity-limit/

Edward "Ed" Rawski Loses Battle with Cancer at 57

Edward "Ed" D. Rawski, 57, of Camp Hill Pennsylvania passed away at home on April 16, 2021 after a brave battle with cancer. Ed was born in Somerset, PA to the late Edward and Nellie Rawski. He is survived by his sister Kathleen Brindza and her husband Larry, his niece Christine Foster and her husband Anthony. He is also survived by his long-time girlfriend Wendy Lloyd.

Ed worked for 34 years as an Environmental Engineer for the Pennsylvania Department of Environmental Protection in the Central Office Air Quality and Safe Drinking Water Programs, as well as the Southcentral Regional Office Waste Management Program. He graduated from the University of Pittsburgh with an undergraduate degree in chemical engineering and from Penn State Harrisburg with a master's in environmental engineering. In 1991 he obtained a P.E. in chemical engineering.

He loved the outdoors and was a whitewater kayaker, a SCUBA Divemaster, a downhill skier, cross-country skier, and snowboarder. He also enjoyed time at the shooting range and was an avid Steeler's fan who used to take vacation time and go to Steeler training camps. He was a Commissioner for a state softball league as well as coach for his team "Gang Green."

Ed went through life with an optimistic spring in his step and a smile on his face. He enjoyed a good political debate. He was a devoted Catholic and a lifelong member of St. Benedict church in Johnstown PA.

YCSWA Removes Nearly 35,000 Pounds of HHW in Single Day Event

The York County Solid Waste Authority's free residential household hazardous waste (HHW) collection program held on Saturday, May 1 2021, removed 34,932 pounds of household hazardous waste. [The wastes were] delivered by 303 people.

Residents who were unable to make it to the May 1 event may dispose of their HHW in their regular garbage. For transportation safety reasons, [YCSWA] recommends [residents] contact [their] waste hauler to confirm what materials they will accept in trash collected at the curb. If residents have a household hazardous waste their hauler will not collect at the curb, residents may deliver it themselves to the York County Resource Recovery Center. A disposal fee will apply.

York County uses waste-to-energy technology to manage municipal solid waste, waste is combusted at a high temperature in enclosed, environmentally controlled combustion units and emissions are managed via advanced emissions technology.

Household hazardous waste includes any products from the home that are corrosive (drain cleaners or bleach), flammable (gasoline), reactive (chemistry kits) or toxic (pesticides).

The York County Solid Waste Authority facilitates responsible solid waste management through an integrated strategy that emphasizes waste reduction, education, recycling and resource recovery. The Authority is the owner of the York County Resource Recovery Center, an Ash Recycling and Processing Facility and owns and operates a Recyclable Materials Drop-off Center, a Residential Electronics Recycling Program, a Yard Waste Transfer Facility and an Education Center.

Publisher: York County Solid Waste Authority
Published: May 2021
Source: https://www.ycswa.com/

Keystone SWANA Announces 2021 Scholarship Winners

The Keystone Chapter has awarded their Annual 2021 Scholarships. And the Winners are...

- **Mason Casey**, son of Andrew Casey of Eagle Disposals of PA. Mason will be attending Messiah College.
- **Jacob Martino**, son of Chanda Martino of Keystone Chapter of SWANA. Jacob will be attending Drexel University.
- **Victoria Tafuto**, daughter of William Tafuto of ARM Group. Victoria will be attending Pennsylvania State University.
- **Nicholas Wigle**, son of Shawn Wigle of the City of Pittsburgh. Nicholas will be attending Pennsylvania State University. New Kensington.

Be sure to check out the next Edition of *The Keystone* where we will meet the recipients and have the opportunity to read the essays that earned them an award.

If you want to support the Scholarship Program advertise with us! Scholarships are funded by advertisers of this newsletter, the Road-E-O, and the Annual Fall Conference.

Trash Collectors Reveal 21 Most Hated Habits

The people who deal with societies trash are unsung hero's, keeping the world tidy for not a lot of praise or appreciation. A recent BuzzFeed Article has been making the rounds responding to the Reddit question, *"Garbage Collectors of Reddit, what do people do with their trash that frustrates you the most?"* As professionals within the industry, let's hope that we are not doing the things on this list.

1. Liquids: Redditor u/andsendunits says, "people need to realize that liquids do not belong in a trash bag. Liquid always finds a way, either inside the basket or mush worse, the floor. Liquids always find a way."

2. Cat Litter: u/benormal comments, "I don't really know a good way to dispose of it, but it is so heavy and rips trash bags so easily. One house always bagged theirs in several grocery bags, which I greatly preferred to the house that put a hundred pounds worth in one trash bag every. single. week."

3. Needles: Both u/ImNoSheeple and u/SaabinDeep agree that when it comes to needles, "...yeah, don't do that." "Put your used needles….into a coffee or Pringles can", suggests a user, "If we get stuck with a dirty needle, we're in for a bad day."

4. Bleach: u/ikwatchua recalls, "My dad was a garbage man and a dog catcher for our small town when I was really young. He said people putting bleach on top of the bags in their trash cans to stop opossums and other wildlife from getting in them was the worst."

5. Rainwater: "As far as I know, garbage cans come with lids." laments u/ErikaCD. "So why is it people don't use them, especially when it is raining? Nothing says you're an a-hole like a can filled to the brim with water."

6. Rotting Fish: u/djrimshorts recollects, "I worked as a garbage collector when I was in high school. The number one annoyance was fish that had been left out to rot in the summer heat. I guess what I'm trying to say is if you have to dispose of fish and other marine animals, put them in several layers of bags or whatever, especially in the summer months."

7. Impatient Drivers: 17 year NYC Sanitation Worker u/98FordContour pleads, "The biggest problem isn't the garbage, it's with the people trying to pass me in their cars doing 40 mph and coming within inches of ending my life because they can't wait five minutes for me and my partner to finish up and get out truck out of the way."

8. Loose Diapers: u/Vamproko states, "People who put diapers in the trash but don't bother to tie or bag them: I hate these people."

9. Loose/Unbaged Poop: In the same vein as loose diapers, u/SabbinDeep also adds, "People will wait 'til trash morning to scoop up all their dog's poop and dump it right on top of the trash can. Not in a bag...not in the woods...right on top of the bags in the can. There's nothing worse than taking a lid off and finding a man-sized pile of dog poop waiting for you."

10. Household Garbage: u/Aggregate Melons said, "Number-one annoying things is people's garbage in a public receptacle." complaining that it fills up the cans quickly, makes the bag extra heavy, and is illegal. He also adds, "and for some reason I find lots of sand."

11. Animals: In the worst entry on the list, u/bongklute submitted, "It was genuinely incredible, the things that

people think are recyclable." The Redditor sited passed pitbulls in a black plastic bag and live kittens that were adopted out.

12. Chemicals/Hazardous Waste: One user, u/LadyFajra, told a chilling story. "My eyesight was 20/20 in both eyes when I was younger. One fateful day, someone had disposed of a product called 'Therm-Tec' in a loose bag. My coworker ripped the bag open, and this stuff went everywhere. It was like someone had set off a smoke bomb. This stuff was horrible, tiny particles get in your eyes, nose, throat, and lungs, and they burn.

My eyes became infected within an hour, and despite attempts to clean my eyes with boric acid solution, the damage had been done. By the time I got to the eye surgeon two hours later, my vision had been permanently damaged. I am now 20/80 in my right eye, and 20/100 in my left. I am not the only one. All my coworkers on that shift had to see an eye doctor. All of us suffered permanent vision loss. The effect on my eyes was not as severe as some of the others'."

The user pleas, "If you have any hazardous wastes, especially particulate matter, which creates a fine dust, or anything which generates strong fumes, please read up on how to responsibly dispose of it, and then take appropriate action".

13. No Bags: "Going Commando" as user u/ErikaCD referred to it. "People who don't use garbage bags. Yeah, they exist" they ensure.

14. Untied Bags: u/Ataraxias simply states, "Tie. Your. Bags."

15. Bricks: u/Monotonegent describes one incident: "Not a garbage man, but I do take out the trash and manage dumpsters at work. Following an incident where someone decided to line the cardboard/paper dumpster with bricks, we needed to lock them."

16. Trash Outside the Trash Can: User u/shArkh commented, "Seriously the amount of people that would drop their [trash] on the floor within feet to a few inches of the trash cans was insane. We'd periodically try adding more general disposal bins to more populated areas. Know what happened? You just ended up with more [trash] strewn about the floor rather than in one or two corners."

"My dad is a trash man," adds u/PiNKCaNDYxOxO, "and I used to go in the truck with him on his shifts. The thing that used to annoy me, just watching, was the people that threw huge trash bags on the floor instead of the dumpster. He had to get out of his truck, throw in so many trash bags, then go in the truck to lift up the dumpster and throw everything away."

17. Overflowing Dumpsters: "Next time you see a dumpster filled 12' over the top, just think about the guy who has to climb up and throw all the [garbage] off that people just piled to the sky." u/Silverdice54 points out, "Seriously, you pour a drink and stop when it gets full...you don't keep pouring and letting it all overflow."

18. Wrong Materials in the Wrong Container: "I'm a dispatcher for a garbage company, and the drivers get so pissed when the customer puts the wrong materials in each container. Trash in the yard waste, concrete in the trash. I had a driver call in one time that a customer has poured liquid paint into their recycling toter and it had solidified." User u/LadyFajra even offers, "If you aren't sure whether something can be disposed curbside just call us; we can tell you how to get rid of it or schedule a special pickup for some items."

19. Yard Waste: u/DontPanic40Too rants, "People fill up their huge yard-waste cans with dirt, sod, grass, and leaves and then they top the whole thing off by jamming sticks in there. All they've done is create a

wooden, makeshift net to trap everything in the can. So then I'm swearing and bang the can on the side of the truck to try and break the wooden net! And then a resident calls and complains because their garbage man was cursing in the street while staring into a bunch of [trash]. And then my boss calls me the next day because the [expletive] can is broken and the wheels fell off because I was banging it on the truck trying to get the wooden net to break so I could move on with my [expletive] day. So please, place your sticks next to your cans and bags or break them into smaller pieces."

20. Remodeling Type Stuff: "If you're throwing away something heavy or doing some remodeling type wok, please use heavy-duty trash bags. Nothing like having to pick up a ton of dry wall, wood, glass, whatever out of the street because the tiny kitchen bag is was stuffed into ripped open." u/benormal adds, "if you're doing a really big job inside the house, you're probably better off renting a dumpster anyway."

21. Printer Toner: u/MisfitSkull simply requests, "please stop putting [them] in there. I'd like to keep my lungs for a bit longer."

So how many of these are you, or someone you know, guilty of?

Be sure to check the comments section on the original page for additional stories and to see the love and support at least some of the community is giving.

Written By: CT Seale
Edited By: Alison D'Airo
Published: May 7, 2021
Source: www.buzzfeed.xom/cassandrats/garbage-collectors-are-sharing-things-people-do-that-they

Save the Date!

...for the return of some SWANA Favorites, and some new events, in 2022!

The Recycling Summit (NEW!)
A day-long event centered around recycling. Topics include DEP's waste composition study, advanced recycling, and ewaste.

When: March 14, 2022

Where: Harrisburg Hilton
1 North Second Street, Harrisburg, PA 17101

SWANA Regional Road-E-O
The Regional Road-E-O is returning in 2022! Thank you to our hosts at the Cecil County Department of Public Works, Waste Management Division.

When: Thursday and Friday - May 12 and 13, 2022

Where: Cecil County Central Landfill
758 E. Old Philadelphia Road, Elkton, MD 21921

Safety Summit (NEW!)
Although still in the planning stages, SWANA is looking forward to a day-long safety summit day.

When: Wednesday May 18, 2022

Where: Harrisburg Hilton
1 North Second Street, Harrisburg, PA 17101

SWANA Fall Conference
That's right, the Annual Fall Conference is coming back in 2022!

When: Wednesday and Thursday - September 7 and 8, 2022

Where: Harrisburg Hilton - 1 North Second Street, Harrisburg, PA 17101

The Public Challenge For WTE Facilities

The U.S. debate over the merit of waste-to-energy (WTE) technologies has been stagnant for years, with no confirmed projects on the horizon as landfills continue to expand in many parts of the country. Backers of WTE facilities recognize it will be a difficult task, but they are renewing efforts to reframe the scientific discussion around how communities handle their waste that can't be easily recycled.

Construction on a new wave of mass burn combustion plants, the type of facility most commonly cited in the category of waste to energy, is underway in the U.K. and other countries that are seeking to move away from landfills. While the U.S. EPA has long listed *"energy recovery"* technologies above disposal on its waste hierarchy, that trend is heading in the opposite direction domestically.

Aside from a Florida project in 2015, no new construction has occurred in years, and the list of active U.S. WTE sites continues to shrink – it's now down to just over 70 after multiple facility closures in recent years. Community opposition is a common factor in many cases, often centering around concerns about cost, emissions and environmental justice. At the same time, WTE supporters believe growing attention to the climate effects of landfill methane emissions could create an opening.

"Waste is not going to evaporate, it's not going to go away," said Marco Castaldi, a professor of chemical engineering at the City College of New York, who recently released a report gathering the latest scientific data on technologies commonly placed in the WTE category. *"That's the goal of this document, make sure that holistic look of all possible solutions is brought in as rigorously as possible. Then whatever you value in the municipality, make that decision."*

According to Castaldi's review of existing research, when WTE is coupled with metal recovery, it can offset one ton of carbon dioxide (CO2) for every ton of waste processed. The paper highlights additional research on how WTE facilities have lower greenhouse gas (GHG) emissions than landfills from a life cycle inventory standpoint, including scenarios with landfill gas capture factored in via the U.S. EPA's Municipal Solid Waste Decision Support Tool. It also notes how the Intergovernmental Panel on Climate Change recognizes WTE as more positive from a GHG standpoint, and it makes numerous arguments about how the sites can be less burdensome on communities.

This list of potential benefits mirrors stances that large WTE companies such as Covanta and WIN Waste Innovations are featuring with greater prominence in their messaging. It also tracks with the opinion of certain large cities that view WTE as a better option than landfills in order to meet their climate or zero waste goals. But so far none of it has quelled vocal opposition to the technology.

Within recent months, local officials, activists and community members have protested existing facilities in states including Massachusetts, Pennsylvania and Maryland, and national environmental groups have doubled down on their opposition. In the view of many groups, the only path forward is to avoid the need for any new disposal capacity by maximizing waste reduction, reuse and recovery.

"Incinerators and landfills are kind of duking it out for last place as far as what we should be doing around waste management... Those are the two worst things to do with waste," said Neil Tangri, science and policy director at the Global Alliance for Incinerator Alternatives (GAIA), adding that to achieve net zero emissions by 2050, *"we need landfills to stop emitting and we need incinerators to stop emitting."*

Companies in the latter category maintain they can play a role in mitigating climate change, especially if carbon capture technology advances, and they point to landfills as the main issue. At the same time, landfill operators

state they can mitigate these emissions with gas capture systems that will produce energy or fuel.

In response to the current state of play, a new group is forming to bring what it views as needed perspective to the U.S. discussion around *"advanced thermal treatment"* — the terminology it prefers for modern facilities — rather than *"incineration."*

"Landfills are more polluting than waste-to-energy facilities," said Philipp Schmidt-Pathmann, founder and CEO of the new Institute for Energy and Resource Management (IeRM). *"Landfills will have an impact on society pretty much forever. It's a cost that will never stop."*

IeRM recently launched with what it says will be a growing board of U.S. and international waste management professionals. That list currently includes Castaldi, as well as top environmental policy experts from Germany and others. The group's goal is to raise awareness about integrated waste management systems that prioritize reduction and recycling. After that, they believe the remaining material should go to a properly scaled WTE facility that can destroy any pathogens, similar to setups in some European countries.

"We want to present the scientific facts and clear the air about some old misconceptions about waste to energy," said Steve Gerritson — IeRM board member and treasurer, and former vice president of the Economic Development Council of Seattle and King County in Washington — adding that initial projects will be focused on *"reducing greenhouse gas emissions and a better use of our resources to both improve environmental quality and improve economic performance on the municipal and state level."*

The landfill comparison

The current U.S. materials management landscape – in which an estimated 50% of MSW goes to landfills, 12% goes to WTE and the remainder is recycled, composted or handled through other food management pathways – has been relatively static for years. Within the disposal categories, WTE is often compared with landfilling on three measures: energy generation and material recovery, health effects and GHG emissions.

Some WTE facilities were built in response to concerns about landfill capacity in prior decades, and they remain key elements of waste disposal infrastructure in denser population centers along the East Coast. Another driver was favorable energy markets, hence the sector's preferred branding of *"waste-to-energy"* or *"energy-from-waste,"* but the emergence of cheaper power alternatives has greatly affected energy revenues in the years since.

Covanta Chief Operating Officer Derek Veenhof called the latter point out in a June panel at WasteExpo's investor summit, saying *"the big hurdle for us here has been natural gas pricing; energy pricing has been a killer."* He estimated this shift affected free cash flow by $120 million or more, and that trend is being seen across the board.

"While the energy has value, it's not going to have near the economic value it had 20 or 25 years ago," said Steve Simmons, president of consulting firm Gershman, Brickner & Bratton (GBB). *"I think the industry does have to pivot, it does have to be supported on tip fees and other value-added activities like metals recovery."*

Simmons, who started his career at a WTE facility in the 1980s, said technology has evolved notably beyond just recovering ferrous metals from ash to also focus on recovering nonferrous metals, including precious metals such as gold, silver and palladium. *"While that may not have a big revenue impact, it can have a huge cost-reduction impact because you're not putting it in the landfill,"* he said, referencing the need to dispose of residual ash from WTE facilities. Castaldi also sees potential for facility operators to use the energy they generate to power processes that may enhance value, such as changing the oxidation state of certain metals.

The potential to recover more metals from WTE was also highlighted by the federal Advanced Research Projects Agency–Energy last year via research funding and a supportive blog post, but energy generation was not the lead argument. The Clean FUTURE Act, introduced in Congress this year, labels WTE as a renewable energy

source – similar to existing policies in some states – but groups such as GAIA strongly oppose such a designation. Tangri published a paper earlier this year making the case that WTE is more polluting than any other form of renewable energy (including landfill gas) and should be excluded from such policy designations.

Beyond the energy comparison, another key concern opponents often raise is health effects. GAIA and other regional environmental or community groups commonly bring this up in campaigns, linking potential respiratory illness and cancer among area residents to specific WTE facilities and comparing their emissions profiles to that of coal-fired power plants.

Facility operators commonly say such claims don't have merit. Castaldi's paper states multiple international studies found *"human health effects cannot be directly connected to properly operating WTE facilities."* When health effects occur, they may be limited or possibly related to other local emissions, it says. It does note how one study of four WTE facilities in Seoul may have found a relationship to additional deaths, but it says that model was based on regulatory limits which the sites were outperforming, and it highlights multiple North American studies where effects couldn't be clearly linked.

WTE facility operators for years have maintained such positions, but opponents say regulatory limits are too lax or don't account for possible releases that may occur before or after plant shutdowns.

"We don't really know what their emissions are just because they're meeting a standard... and often a lot of these places, they don't meet the standard, even under these conditions," said Tangri. He added that it's also important to view the emissions through a lens of environmental justice in communities with high concentrations of industrial facilities.

"It's the cumulative impact. It's happening on top of all the other environmental burdens that they live with."

In response, Castaldi said emissions around startup and shutdown can indeed be higher or lower than normal – and it's a subject that merits further discussion – but he said this is factored into regulatory oversight and represents *"a very small percentage to the normal 24/7 operating conditions of a facility."* He and others also note such facilities have seen substantial reductions in emissions over the years due to updated air quality standards and emissions technology.

Various experts and consultants say one reason WTE facilities receive more attention is they have a stack that releases clear signs of activity, while landfills don't, and they are also more apt to be located near population centers. GAIA and related groups describe that argument as a deflection tactic.

"Climate is becoming more and more the bottom line on everything. So if you have a business that is a major source of emissions, you've got to have a story as to why that's not such a bad thing ...especially if you've got a big smokestack," said Tangri.

Landfill emissions and leachate mismanagement can also have health implications when not properly managed, but those issues are more often raised on a case-by-case basis rather than in a broad critique as seen with WTE. And proponents tout WTE sites' location in or near urban centers, saying it cuts down on emissions from truck traffic moving waste to distant landfill sites, while opponents consider that an environmental justice issue.

This facet of the debate gets at what may be the biggest issue of all – how to compare GHG and other emissions from landfills to those at WTE facilities. The life cycle analyses and comparisons quickly get complicated, but multiple pieces of research show landfills are more potent GHG generators.

Recent studies in California, Maryland and elsewhere have brought renewed attention to the large role landfills play in methane generation, but questions remain about the accuracy of landfill emissions measurements. Unlike WTE emissions assessments, landfill emissions assessments are generally based on models because it's not feasible to take readings across large sites that span many acres. The waste industry feels the U.S. EPA's

models overestimate the emissions, while others say the models are underestimating.

Bryan Staley, CEO of the Environmental Research & Education Foundation (EREF) said this idea of it being harder to measure emissions from landfills versus WTE facilities may soon be a thing of the past.

"While it's a valid argument historically, I think, moving forward, it's not going to be a valid argument because these technologies have really changed the game on measuring whole landfill emissions," said Staley, referencing satellites and drones. At the same time, he cautioned against relying on snapshots versus more continuous measurements.

Staley said the position paper from Castaldi summed up existing information and discussions that have been going on for years, and he pointed to recent research out of North Carolina State University as one of the more intriguing additions to that dialogue. Looking specifically at seven categories of environmental impacts from different forms of handling the organic fraction of MSW, the paper found WTE technologies had the lowest impacts and landfills had the highest.

"Just because waste to energy is ranked at the top doesn't necessarily mean that landfills are underperforming, depending on how you look at it," he said, adding that landfills with gas capture systems are also found to have carbon offset benefits depending on the scenario.

While landfill gas-to-energy systems are increasingly common due to regulatory trends and rising financial opportunities, Staley noted the sites *"do face some operational challenges with implementing the gas collection technologies"* in a way that can capture emissions quickly. Under the best-case scenario, he said, it can generally take two years to fully get a system into place once a cell has begun receiving material.

As to what this all means for the future of WTE, Staley said it's likely the current debate will continue as it has for the time being. *"I think it's certainly a hot-button issue in the U.S. because landfilling is generally so cheap,"* he said, adding WTE is broadly accepted in Europe, and science *"bears out that it definitely offers environmental benefits."*

Looking ahead

This debate over the role of WTE facilities is expected to continue in a similar fashion over the years ahead. Opponents will seek to force sites to close through activism against contract renewals with local governments, as well as around permit decisions and through related lawsuits. Proponents will say facilities are meeting regulatory requirements; they'll raise the specter of long-haul landfill exports if WTE facilities close down and they'll say modern projects are far more advanced than existing sites. Landfill operators will continue saying they have the more cost-effective solution, even as groups such as IeRM and others maintain this comparison doesn't fully account for externalities.

As seen with a new report about the underperformance of plastic recycling in five cities with WTE facilities, GAIA and related groups plan to continue pushing for reduction, reuse and recycling efforts that decrease reliance on disposal destinations. If a more significant shift in the waste stream eventually occurs, then Castaldi and others say it's possible mass burn facilities would need to rethink their heating values or systems — but they don't expect that to happen any time soon.

In some cases, communities have also pursued, or are considering, disposal alternatives to landfills and mass burn combustion. Collection specifications vary depending on the technology, but common categories include pyrolysis, gasification, mechanical biological treatment and or refuse-derived fuel applications. For communities weighing these options, multiple experts recommended a cautious, case-by-case approach with a possible backup plan in mind.

"If you're a community in the Northeast, and the closest landfill is in Ohio, you want to be very careful and have very proven technology. If the community is going to, in the end, back the bonds directly, or make investments, you want to understand that risk," Simmons said.

Earlier this year, the EPA released an assessment of such technologies to help communities make waste management decisions. That research described mass burn combustion as *"low risk"* – in terms of financial investment, not health effects – when compared with other categories. It also reiterated that landfills are greater GHG emitters than WTE or other conversion technologies, while repeatedly noting the need for ongoing research and saying comparisons all depend on the type of feedstock involved.

Susan Thorneloe, a senior chemical engineer with the EPA's Office of Research and Development, suggested communities use the agency's decision support tool to weigh these complex, long-term decisions.

"The tool allows users to consider existing waste infrastructure and can be used to develop more sustainable – and resilient – options for solid waste management by minimizing discards and maximizing energy and resource recovery, while also considering potential [environmental justice] concerns and economics," Thorneloe said in a statement.

The EPA paper maps environmental justice profiles for conversion technologies using its EJScreen tool. It found about 25% of all assessed facilities were in low-income areas, and *"older technologies such as mass burn are more often surrounded by denser populations."* Thorneloe was not aware of a comparable mapping for all U.S. landfills, but she said *"many landfills have not been allowed to expand due to environmental justice concerns."*

However, the EPA's paper also notes "*conversion technologies will not eliminate the need for landfill disposal"* because residual streams are still created. With this in mind, Thorneloe said it's especially important to focus on the mitigation and measurement of landfill emissions.

"Although we continue to work to reduce what is discarded and minimize what is ultimately landfilled, there will always be a role for well-designed and operated landfills," she wrote.

The report also notes the emergence of alternatives is unlikely: *"As long as the cost of landfills do not consider the environmental externalities such as increased carbon emissions per ton of waste, the technologies described in this report will have a more difficult time being cost competitive."* Landfill critics believe this is a key example of why disposal tip fees could be artificially low in some cases; landfill operators say they are priced accordingly and follow state or local policy requirements.

King County, Washington, the home base of IeRM's Schmidt-Pathmann, has grappled with this discussion for years as its landfill nears capacity. Last month, a county councilmember introduced legislation to establish an advisory committee focused on the possibility of WTE in the area. IeRM believes it's well-suited to help lead this process, if plans move forward, as part of a broader mission to provide research and objective information about landfill alternatives.

“There’s such a huge gap in political know-how on the topic and how the topic has been hijacked to special interests," said Schmidt-Pathmann, who believes many local government officials and the consultants they work with are biased toward landfills. *"The public is the one that has paid the price."*

Covanta also recently described Florida as an area where new development could occur, and the company's pending sale to EQT Infrastructure could be a sign the parties involved see a future for expansion beyond current construction projects in the U.K. In another sign that the sector remains financially attractive to certain investors, WIN Waste has hinted at possibly going public and has said it would also be interested in expanding its list of WTE facilities if the right conditions ever align.

While Simmons of GBB said it's true landfill companies have a large voice in the discussion, he noted many local communities may still favor landfilling as well. The consulting firm is seeing some communities consider upgrades or changes to existing WTE facilities, such as one in Michigan, but new ones are unlikely to happen in the U.S. in the near term barring a major national shift.

“It’s going to take federal policy," said Simmons, adding

that that would more likely come in the form of greater limitations on landfills than in direct support for WTE, but the latter is also a long shot. "Landfill restrictions will be hard because there are so many communities that rely on landfills, that have made direct investments in landfills."

Written By: Cole Rosengren
Published: August 4, 2021
Source: Waste-to-energy supporters aim to 'clear the air,' reposition technology as landfill alternative | Waste Dive

New & Returning Members of the Keystone SWANA Family

The Keystone Chapter provides many benefits by fostering cooperation among solid waste professionals and by providing educational opportunities to enhance the knowledge and expertise in the solid waste management field. We would like to take a moment to thank everyone who has joined, or rejoined the Keystone SWANA family in recent months!

- Elizabeth Gessling
- Ryan McKinley
- Patty Lynn, CCSWA
- Jason Laub, ARM Group
- Michelle Mathason, LCSWMA
- Gen Chiu
- Zachary Michael, GLRA
- Kyle Swetz, County of Schuylkill
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- James Agliata, FOCUS by TELUS
- Ceclia Monroe, Department of Public Works

The Keystone Chapter strives to share pertinent information and provide continuing education that serves members' interests. The Chapter sponsors a variety of activities and programs including; academic scholarships, the annual regional landfill equipment and truck Road-E-O, certification training, mini-technical seminars, an Annual Conference, and more!

If you are or someone you know is interested in joining the Keystone Chapter SWANA, please visit our website at http://www.keystoneswana.org/ or contact Chanda Martino by e-mail at: admin@keystoneswana.org

SWANA Keystone Chapter Calendar of Events

For more Information, event registrations, and updated information please go to the Keystone Chapter's website: http://www.keystoneswana.org/

****NOTE Schedule is subject to change****

AUGUST 2021

- Tuesday 8/24 **Millfair Compost and Recycling Center Mini-Technical Seminar.** Erie PA
- Distribute Summer Edition of *The Keystone*

SEPTEMBER 2021

- Thursday 9/23, 1:00PM, **Chapter Annual Business Meeting and Election**
- Chapter Fiscal Year Ends

LOOKING TO 2022

- Monday 3/14/2022 **Recycling Summit at the Harrisburg Hilton**. Harrisburg PA
- Thursday and Friday 5/12-5/13/2022 **Road-E-O at the Cecil County Central Landfill.** Elkton MD
- Wednesday 5/18/2022 **Safety Summit at the Harrisburg Hilton.** Harrisburg, PA
- Wednesday and Thursday 9/7-9/8/2022 **Annual Joint Fall Conference at the Harrisburg Hilton.** Harrisburg, PA

To Be Determined

- **Metals Recovery from MSW Ash Mini-Tech Seminar** at Frey Farm Landfill

Mini-Tech Recap

On Tuesday July 27, 2021, the Keystone SWANA held the Solar Panels. Closure Turf, and Roadway Reclamation (Oh My!) Mini-Technical Seminar at the Lanchester Landfill in Narvon PA/. The Mini-Tech featured a presentation on the various innovative projects completed at the facility including a 300 KW AC solar panel installation, an 8-acre section of ClosureTurf, and the reclamation of the main haul road through the landfill.

Participants at the Solar Panels. Closure Turf, and Roadway Reclamation (Oh My!) Mini-Technical Seminar

Photo Credit: Denise Wessels

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Thank you to all of our committee members for everything that you do to make the Keystone SWANA Chapter great!

▶ This Publication is for the Solid Waste Professionals of the Keystone Chapter of SWANA

The Keystone is published three times per year (winter, summer, and fall). If you have ideas for future articles, updates, or general suggestions for *The Keystone*, or you would like to advertise with us, please contact us at : admin@keystoneswana.org.

Chapter members: please freely share this info with others that you work with or who have an interest in waste news in PA.

The SWANA Newsletter is published 3 times a year in **April, August, and December.**
If you would like to have an article included in *The Keystone,* please submit it by the 15th of the month prior to the scheduled release date.

We Want Your Articles!

As a reminder articles are accepted throughout the year and while we encourage original articles they do not have to be originally written as long as a proper source is cited.

If you did not receive your copy of this newsletter from SWANA, then you are not on our email list for news. **Please send us your current email address** as all future newsletters, as well as informational broadcasts and other communications, will only be sent via email.

Our email is: **admin@keystoneswana.org**

Barton&Loguidice

This publication was produced by Barton & Loguidice on behalf of the SWANA Keystone Chapter.