

Keystone

For the Solid Waste Professionals of the Keystone Chapter of SWANA

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A Message from SWANA President: Bryan Wehler



As the temperatures climb, so does the level of activity at Keystone SWANA. Even though it's technically still spring, we are already busy preparing for our PWIA-Keystone SWANA Joint Annual Fall Conference in September (6 & 7) and it's shaping up to be another great event with some excellent speakers and topics. Speaking of warmer temperatures, George Koerner, P.E., PhD. will be presenting another pre-conference educational seminar on the timely subject of elevated temperatures within landfills. You won't want to miss this year's annual conference, so please go on our website and register early (www.keystoneswana.org) and consider taking advantage of the few remaining sponsorship opportunities.

With member education being one of our primary missions, Keystone SWANA has been working diligently on increasing educational and networking opportunities to our members by offering more Mini-Tech Seminars throughout the year. Already this year, we have hosted Mini-Tech's on topics such as: drone applications for landfills, solar projects on landfills, and landfill leachate treatment technologies. And we

have quite a few more Mini-Tech's scheduled for the remainder of the year so please take advantage of these excellent half-day learning opportunities.

While on the subject of education, Keystone SWANA has recently received a number of scholarship applications from relatives of members who are graduating from high school this year. Thanks in large part to the generosity of our members, including proceeds from our various events held throughout the year, Keystone SWANA will again be able to award thousands of dollars in scholarship funding to support the college education of the next generation of possible solid waste management professionals.

Lastly, Keystone SWANA is pleased to announce that we've added over 30 new members so far in 2017! New memberships include 6 new student members and 7 new "young professionals", which helps inject new energy and new ideas into our organization. This also makes our Chapter one of the fastest growing in the nation. We would like to thank our members for spreading the word and encouraging your colleagues and acquaintances to become members so they can take advantage of the educational, networking, and industry

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Talking About Trash Worker Safety



DSNY worker walking besides a refuse truck.
- Videoblocks screen shot

At first glance, garbage collecting may not seem extremely hazardous. But research shows that it can in fact be both dangerous and even deadly. A report from the National Institute for Occupational Safety and Health (NIOSH) shows that between 1980 and 1992, 450 sanitation workers aged 16 or older died in incidents involving refuse collection. Two thirds of these deaths were vehicle related, and most occurred when the worker slipped or fell from a refuse-collection truck and was struck or run over by their own vehicle.

In 2007, the Bureau of Labor Statistics noted that refuse and recyclable materials collectors had a fatality rate of 22 per 100,000 workers, placing them among occupations with high fatality rates. In 2004, NIOSH reported that workers in waste management were in the top three job classifications to have the greatest risk of falling, and were number six in having the greatest number of fatalities in the service sector. Solid Waste Collection workers were also two times more likely to suffer lost workday injuries than the average service sector worker.

Can contents can be the biggest concern for collectors

Potentially menacing [to collectors] are the contents of trashcans. Into them, heedless owners sometimes

dump broken glass, cat and dog excrement, and chemical waste -- one garbage collector in New York City died recently after inhaling fumes from a hazardous chemical someone had illegally poured into a trashcan. Garbage collectors are often disconcerted to find more than garbage in trashcans and dumpsters, including carcasses of pets and possums, broken glass, syringes, even slumbering homeless people.

"Some people put dead animals in their trash cans [instead of calling Animal Control]," says Ira Janowitz, a consultant in California who has conducted safety trainings for garbage collectors. *"That's heavy stuff."*

The risk of needle sticks and exposure to infectious diseases is a particular concern on routes near medical facilities, according to John Plumos, the business representative for Teamsters Local 315 in Contra Costa County, California. Collectors on those routes get needle sticks "quite often," he says. So far, however, he has heard of no reports of anyone becoming infected with HIV, Hepatitis B or C, or other infectious diseases as a result.

Even though it's illegal to dump medical waste in trashcans used by the public, Plumos says it's an all-too-common violation. *"Hospitals and nursing homes are supposed to treat needles and unused medicines and throwaway [intravenous] units differently than normal garbage and put it in what they call a 'red bag,'"* Plumos says. *"But that's more expensive, so sometimes they try to get away with pitching it into their regular debris box."*

Other residents unknowingly create havoc for sanitation workers when they pour kitty litter directly into the can rather than sealing it in a plastic bag. Exposure to cat feces can cause toxoplasmosis, a disease that attacks the nervous system. If an employee is pregnant, the disease can seriously harm the fetus.

But physical demands also play a role in safety

Like other professions that require physical labor, garbage collecting can put tremendous strain on your body as well. In some cities, trash pickup crews still run an average of 20 miles a day behind moving garbage trucks. *"Vehicular traffic and repeated lifting while on the run causes thousands of crippling injuries each year,"* says labor historian Earl Dotter. According to a report from the US Bureau of Labor statistics, in 2006 there were over 3,000 instances of lost workdays nationally because of injuries to garbage collectors working for private haulers. This figure does not even include injuries or lost days for garbage collectors working for county and city collection services.

Some injuries stem from constantly repeating awkward movements, such as jumping in and out of garbage trucks and lifting cans that can sometimes weigh 100 pounds or more. The weight and the often-awkward positions can cause back strain and ankle sprains. And on days when the road is slick, lifting heavy cans can lead to a nasty fall, especially since collectors never know what to expect. *"The cans vary widely and unpredictably in weight, which is a big problem,"* Janowitz says.

Louis Montana can attest to that. On a wet day last spring, the Walnut Creek, California, garbage collector was hauling a trashcan from a customer's house out to his truck when he slipped on the pavement. *"I was roll-*

ing the can out and it fell out of my hands. I bent over too far to grab it, and it sort of fell on my foot. I could feel that I had pulled something inside," Montana says. He went home in pain, and although he's back at work, he still feels pain late at night.

A doctor who later examined Montana diagnosed a hernia; Montana said he expects to have an operation soon. It's not the first injury he has suffered during his 14 years as a garbage collector. Ten years ago, he strained his back badly while on his daily route. *"I felt [a slight pain] but I finished the day that time,"* he says. *"But the next day I couldn't even tie my shoes. The doctor gave me cortisone shots in my back, and I went back to work a few days later."*

According to a University of Miami report, garbage collectors suffer the most injuries to their lower backs and are plagued with fractured feet, bruised knees, and torn hands from picking up so many cans as well. Another study conducted in Denmark indicates that garbage collectors are twice as likely to suffer from stomach problems than the general workforce, and they are also many more times likely to suffer allergies, infections, and respiratory problems. Because of such hazards, the number of workers compensation cases filed by garbage collectors in some areas is 7.4 times that of the general workforce, according to a Florida study.

Thankfully, technology and training is helping to turn the tide on injuries

Despite these hazards, Janowitz says working conditions have improved over the past 20 years. Trash containers have gotten lighter because many cities have adopted smaller trashcans. Some city garbage collectors have also won the right to refuse to pick up cans filled with unsealed animal waste, such as kitty litter and manure.

Dave Biderman, general counsel for the Environmental Industry Association, a trade group, says that companies in the industry provide extensive training on how to prevent injuries. He notes that some areas now have fully automated trash-collection systems, in which



A Labrie Cool Hand side loader split body truck, sporting one of the many styles of automated trash can pick-up technologies available today..

trucks have an arm that lifts curbside cans on its own. Others have semi-automated systems, in which residents wheel a container out to the curb, a worker pulls it to the truck, and a hydraulically powered arm dumps the trash into the hopper. Since these systems involve less lifting, this translates into fewer injuries and less contact with refuse material. But even automatic systems have their own set of hazards, Biderman says: *"The moving metal arm can potentially [crush] an employee."*

To avoid injuries and minimize exposure to job hazards, NIOSH recommends that the following steps be taken whenever possible:

- Train drivers and collectors to be aware of the hazardous areas around a refuse-collection vehicle.
- If you're picking up garbage, ride in the vehicle cab when traveling to or between collection routes rather than on the side step. If there aren't enough seats in the cab for collectors, they should be transported to the job site by separate vehicle.
- Use the riding steps on the side of the refuse vehicle only when moving forward for short distances and only at speeds of 10 mph or less. Don't stand on the steps when the vehicle is backing up; you could slip off and be run over. Step on or off the riding steps (rather than jump on them), and mount or dismount them only when the vehicle's at a complete standstill.
- Use extreme caution when backing up and always keep workers on foot in your line of vision. If visual contact is lost, drivers should stop the vehicle immediately.
- Wear safety equipment at all times. This includes highly visible colored clothing, slip-resistant foot-

wear (avoid shoes with very narrow cleats or spikes that might get caught in open mesh riding steps), and protective eyewear such as goggles.

To avoid the risk of infection, workers should be up to date on their tetanus shots (one every 10 years); they may also want to consider a hepatitis B vaccine on the advice of their physician. Garbage collectors should also wear protective gear, including goggles, nose-and-mouth masks, and heavy gloves. Many workers, like Montano, also keep towels and containers of clean water around to scrub themselves during breaks.

Experts recommend that workers take advantage of other safety technology as well. Small compressed-gas



Dan Legatt riding the step of a trash truck.

- Dan DeBaun, WJON News

horns can be worn on the belt and sounded if the workers trip or falls. Two-way radios can help workers on foot communicate with the driver. Rear-view mirrors should be convex to reduce blind spots around the vehicle.

Vehicles can also be equipped with sensor technology, which triggers an alarm if a person or object is in the path of a backing vehicle. (This

would help prevent some of the tragic incidents of trash collectors run over by their own colleagues, who couldn't see them.) And strategically placed guards or extended bodywork on the vehicle can prevent workers from falling into the path of moving wheels.

Sadly there are some limitations to the new tech

Not that the automated systems are foolproof. They're not necessarily suitable for routes with lots of hills, fat leafy trees, and overhead wires, Plumos says. On hills, some of the garbage can spill onto the street, and wires that get in the way of the moving arm are an electrocution hazard. In those areas, garbage must be collected the old-fashioned way -- by hand.

But the public is on your side

Because it's hard, dirty work, garbage collectors do tend to draw support from the public, even when their trash piles up during a garbage strike. That's one reason that garbage collectors generally make more than some people in white-collar jobs.

In many cities, in fact, being a garbage collector is a prized civil-service job, according to Ron Howell in his recent book *One Hundred Jobs*. One 41-year-old sanitation worker he interviewed said he preferred his job to any other, partly because it was well-paid. "This is the best job I've ever had with the city," the worker told Howell. He added that he knew he was in a good position when people in suits walked up and asked him how to apply for a job as trash collector. 🗑️

Written By: David Tuller, M.P.H.
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SWANA Training: Landfill Gas Systems O&M

The Keystone Chapter is offering subsidized registration for any member interested in attending the Landfill Gas Systems Operation and Maintenance Course being offered on November 14 and 15 at the Lanchester Landfill in Narvon, PA.

The course explores the daily challenges associated with the operation and maintenance of LFG systems by discussing generally accepted industry practices as well as some new and alternative approaches for the capture, control and management of landfill gas.

This 2-day course is useful for hands-on practical use in the field and is great for experienced landfill operators, consultants and operators new to the landfill gas industry. Class participants and instructors will discuss alternative practices, lessons learned, and issues debated in the industry.

Topics covered include:

- LFG Fundamentals
- LFG Control Function Overview
- Summary of LFG Regulatory Requirements
- LFG Monitoring Systems
- LFG Wellfield and Collection System
- LFG Treatment and Disposal Facility
- LFG System Operation
- Data Management
- Instrumentation
- Facility Management and Operation Documentation
- Landfill and LFG Safety

For more information or to register online visit:
<http://www.keystoneswana.org/>. 🗑️

Wayne J. Alexander passes at age 71

Wayne J. Alexander, 71, of Towanda passed away on April 21, 2017 after a 16-year-battle with cancer. He was born on March 14, 1946 in Troy, Pa., to C. Durand and Ella Cole Alexander. Wayne was the father of Jay (Juli) of Montoursville and Todd (Rachel) of Herrickville; and the grandfather to Cody, Cole, Caylyn, Brooke, Courtney, Alex and Madison. He is survived by brothers, Dean (Pat) of Galion, Ohio, and Lee (Suzanne) of Wysox; and former wife, Becky Benjamin Alexander.

Wayne grew up on his family's dairy farm in Franklindale and by the end of high school owned half of the herd. He sold his interest in the cows to his father and used the proceeds to go to college. Wayne graduated from Towanda High School in 1964. He graduated from Williamsport Area Community College (Penn College) with a degree in service and operation of heavy equipment in 1966. While attending Tech, he lived with Robert E. Waltz and continued in the dairy business.

He then worked for Rishel's and Metfab throughout college. He worked for Percival Coal and his father-in-law, Nathan Benjamin. He was the fifth employee to go to work for George E. Logue, Inc. and was employed there in various positions until he went to work at the struggling Lycoming County Landfill in 1982. He worked there as general manager for 14 years. In that capacity, he was known for the turn around and creation of a state of the art, waste management facility that benefitted Lycoming County financially for many years. He then worked for National Earth Products and retired from Glenn O. Hawbaker, Inc. in 2011.

Wayne was a person who trusted everyone and gave

"Message" continued from Cover

advocacy opportunities that Keystone SWANA membership affords. Our aim is to continue to identify ways to enhance the value of a Keystone SWANA membership and your ideas and feedback are an essential part of fulfilling this objective. To that end, please feel free to share your thoughts and suggestions with me (bwehler@armgroup.net) or other Board Members and Officers. Have a safe and enjoyable summer! 🍷

Bryan Wehler
Keystone Chapter President

everyone a chance. He spent most of his time helping anyone who needed a hand or just needed entertained with his endless stories that created laughter beyond imagination. He was blessed with more than his fair share of common sense and had a strong influence on many. He was known for his own language that, again, would entertain those he was with, as you tried to figure out what he had just said. Wayne would show up with his motorhome and his dog Crazy at any given time to visit his family and friends. He might stay for a day or a week and then move on to the next stop.

"Wayne was a person who trusted everyone and gave everyone a chance."

Wayne was preceded in death by his parents, C. Durand and Ella Cole Alexander; a brother, Lyle; sister, Shirley; and wife, Nancy. Wayne was a member of the Peete's Shanty Hunting Club, Towanda VFW, Monroeton Rod and Gun Club and the ASHE Williamsport Chapter. In keeping with Wayne's wishes there [was] no service or funeral, his request was, "have a hell of a big party and invite my friends and family to tell stories about me and have a good time." 🍷

Originally Published Apr. 23, 2017
Source: <http://www.legacy.com/obituaries/thedailyreview/obituary.aspx?n=wayne-j-alexander&pid=185178704>

19th Annual Joint Fall Conference



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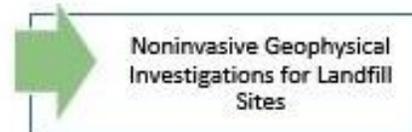
David Bodamer
Waste 360
Keynote Speaker

- The Year's Top News Articles and What They Mean to the Waste Industry.



Dr. George Koerner
Geotechnical Institutue
Pre Conference Training

- Impact of Elevated Landfill Temperatures



Noninvasive Geophysical
Investigations for Landfill
Sites



Beneficial Uses of Landfill
Capped Areas



Natural Predators for
Landfill Bird Abatement
Programs



Pennsylvania's Recycling
Economic Impact Study



Remote Data Collection and
Monitoring of Leachate and
Gas Systems



Legislative Updates

Are Humans Creating a New Geologic Layer?

We know that consumerism plays a...role in climate change, but the environmental impact that all of our material goods have on the planet goes far beyond the greenhouse gases emitted in the process of creating and transporting these things. In fact, much of it has to do with what we leave behind. It's a manmade phenomenon...that Earth scientists suggest it's creating a distinct geological layer upon the Earth made up of "technofossils".

Most people associate geological layers with eras long gone: paleontologists digging up fossils of stegosaurus or ancient corals, the stunning layered lines of the Grand Canyon giving testimony to the billions of years of life on Earth. But we're creating our own coating on the planet that will outlast us. Just as dinosaur bones and petrified wood persist, so too will markers of our time, and they increasingly include the nonorganic. Couches, ballpoint pens, garage doors, safety pins, zip drives, plastic water bottles, cars, buildings; almost anything that's not recycled has the potential to fossilize—that is, become partially or entirely preserved over time due to burial in the Earth or within layers of other fossils. There are almost certainly numerous future technofossils in front of you right now.

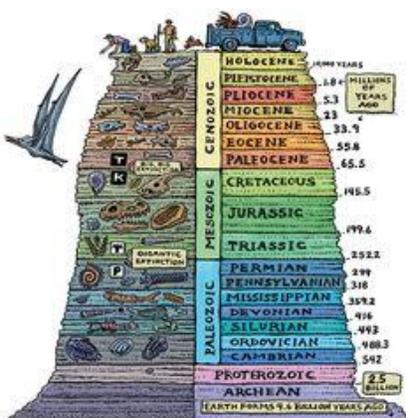
More than just creating a geological mille feuille of our past, scientists warn that this phenomenon is also making a deep impact on our terrestrial future. And like the Anthropocene—another buzzword popular in the Earth sciences community used to mark a new geological epoch in which human influence became the dominant force on Earth—it represents a profound change. According to a conservative geological estimate from a team of international researchers led by the University of Leicester, all this stuff weighs 30 trillion tons. That's 110 pounds (the weight of a semi-truck's tire) for every

square meter of the earth's surface. The group also calculated that the sheer diversity of the types of technofossils we as a species have made, and it already exceeds the number of biotic species living on Earth now, and may even "exceed the total biological diversity through Earth's history."

The scale of our 'stuff' is so gargantuan that it's also creating an entire new sphere alongside the other major systems of our planet. We've long had the hydrosphere (water), atmosphere (air), lithosphere (earth), biosphere (organic life, like plants and animals). Now we have the technosphere (human constructions). Unlike the natural spheres that developed self-regulating systems and balanced interactions over millions of years, the technosphere's geological newness throws off the quite robust balance of our natural systems.

Those who study it worry (among many other things) that the technosphere doesn't function as a mostly closed system as other spheres do. A simple example is the hydrologic cycle: Water vapor evaporates into clouds, which rain down on landscapes, flow into rivers, and back out into the sea. This cycle took eons to develop into the mostly symmetric system we enjoy today. But the technosphere is moving at rates of change measured in decades, not eons, meaning that the complex checks-and-balances evolutionary process hasn't had time to self-regulate. Earth's early geologic history is full of asymmetric spheres collapsing into chaos as during the Archean Eon; so many volcanoes erupted all at once it sent Earth into a superheated greenhouse state.

Worst of all...it's remarkably poor at recycling its own materials. In the biosphere, there's little waste—the redwood tree falls after hundreds of years of growth,



and becomes a home for small mammals, plants and mushrooms, which all break it down into the soil below; baby redwoods literally grow out of the body of the old tree, a cycle in which life is continuously supported, and no trash is created. Long term, lack of nutrients and energy cycling is a death knell for any natural system, and the technosphere uses vast amounts of finite resources...It sucks up so many resources that Jan Zalasiewicz, one of the University of Leicester geologists leading a multiyear study of the technosphere, told [the author] that he views it as “a rapidly evolving parasite upon our entire planet”.

That's not hyperbole: To create our world of stuff, the technosphere is consuming resources the rest of the planet needs to maintain its systems...it doesn't care if it disables or kills its host. To be clear, the waste itself isn't the parasite, it's simply the evidence of it...Alas, the cure won't be as simple as getting rid of fleas. The technosphere itself is here to stay. Human success on Earth is tied to the world we have built—our cities, our agriculture, our power supplies, our clothing, our transportation, and our technologies. In short, we've converted part of the Earth into a machine to support humanity. And, as Zalasiewicz told [the author], “*We are part of the technosphere, a component, and we have to keep it going because it keeps us going.*” But additional technofossils...are not necessarily inevitable. We can make the technosphere smarter by nudging it toward a more mutualistic relationship, rather than a parasitic one.

Like the natural spheres developed over millions of years on the earth, the technosphere can and will evolve over time. “*I look at the technosphere's systems as the next biology,*” says Peter Haff, professor emeritus of geology and civil and environmental engineering at Duke University, who first coined the term in 2013. Haff is philosophical and thinks in geologic time when considering long-term implications of the technosphere: “*It's just the newest thing that Earth is doing. We just happen to be living at this time when there is a change happening.*” This “emergent structure,” like the other spheres, grows and changes to improve its own func-

tionality, not ours—Haff suggests that we should influence the technosphere to behave more the like the other, beneficial spheres while we still can. “*For [the technosphere's] own longer term survival, and for ours, recycling is essential,*” he says. Especially at these early stages, we can likely mitigate some of its most parasitic effects by reshaping it to better work with its finely tuned, self-regulating spherical peers. To start, we need to push the technosphere to “*function in tandem with a biosphere that is stable, rather than one that is rapidly degrading,*” says Zalasiewicz. That means it needs to be better at reusing resources, by mimicking how the other spheres work—all of which recycle continuously, in a circular process.

The sharing economy actually represents a good model for the technosphere—after all, it reduces resource use (and therefore waste) by getting consumers to rethink their individual ownership of stuff. Likewise, concepts like the circular economy (in which waste is eliminated completely by moving away from the linear model of make-use-discard into one where we grow or produce new things from recycled components) can push the technosphere back into a relatively healthy circle of resource use and reuse—similar to how the other spheres have evolved.

The critical thing to understand about the technosphere is that, like the other spheres, it doesn't care whether humans survive. It exists outside of us, even if it includes us. There's nobody in charge of the technosphere, nobody knows exactly how it works as a whole, and nobody designed it. Ultimately, in a healthy technosphere, no waste would be produced, and no technofossils (or at least, very few on par with what's left behind by the other spheres) would be left behind. It might make future geologists' work less interesting, but at least there will be scientists puzzling over their ancestors in the future. 🍷

By: Starre Vartan

Originally Published: March 29, 2017

Source: http://www.slate.com/articles/technology/future_tense/2017/03/humans_are_creating_a_new_geological_layer_of_technofossils.html

Policy and Regulation in the Reign of Millennials



We recently marked Earth Day 2017. The day's events and celebrations pay homage to our host planet beckoning us to do our share for "Mother Nature." Festivities may be a drawing card, but the recent March for Science rings truer to the heart of the inaugural event in 1970.

Let's not forget, Earth Day was conceived to provoke change in environmental protection policies. Initially celebrated every 10 years, each decade featured a priority for regulatory reform. The approach was effective in starting important conversations that culminated in core federal and state environmental regulations, not to mention the U.S. Environmental Protection Agency. This year's March for Science reminded us that the decisions behind those policies were grounded in scientific evidence, a practice that should continue.

Recycling was the focus of Earth Day 1990. It's no accident that most state level municipal waste and recycling legislation originated around that time. Equally of no coincidence, many of those state policies are now under review. With the 30-year marker approaching in 2020, it's time to reconsider the relevancy of each law, its mission and requisite approach in today's world.

In the process, stakeholders are asking if neatly defined regulatory boundaries and institutionalized programs have become impediments rather than conduits to reaching higher goals and objectives. From that perspective, limiting material management to our current downstream options seems narrowly restrictive. To address these concerns, policymakers may find it's time to

abandon rules that compartmentalize and isolate issues as if they occur in a vacuum. In other words, we need to start thinking like Millennials.

The Millennial generation is highly educated. More than one third have college degrees and many hold advanced degrees. Regardless of their chosen discipline, throughout the college/university experience Millennials found Education for Sustainable Development (ESD) embedded within their curriculum. Perhaps not consciously, but as a group, they were groomed by ESD techniques to view issues across environmental, economic, and societal lines.

ESD is often considered a new strain of "environmentalism." It is much more. Subscribers to ESD believe public as well as corporate policies should be established using sustainability metrics. The purpose is to consider, for both rural and urban areas, the interdependence of economic, social, political, and ecological conditions. In addition, ESD evaluates the impact of local measures regionally, nationally, and internationally.

Passing the Torch

For emerging policies to be meaningful and remain relevant for Millennials, the old guard needs to start seeing the world through this broader lens, or step aside. We can embrace this approach now and lend a continuum of knowledge to provide balance. Alternatively, we can wait for the generational disruption, which inevitably will transpire based on numbers alone. Either way, "business as usual" will look different.

According to the Brookings Institute, by 2020, one of three adult Americans will be of the Millennial generation. By 2025, Millennials will represent an estimated 75 percent of the workforce. Within the same timeframe Millennials will pursue political careers and successfully be elected into office.

At that point, in both private and public sector roles, Millennials will possess the power to enact laws or internal policies that can change how corporations are governed and define their responsibilities. They will be able to direct funds and subsidies to favored projects. Of course, the changes will be flavored by their personal experiences and demand for sustainability at any cost.

A Regulatory Renaissance?

Does this mean rapid change for waste and recycling policies? Probably not immediately, but soon enough. According to those “coming-of-age” dates shown earlier in the article, Millennials will be fully entrenched within less than 10 years.

Millennials are surveyed often and by a variety of sources. A number of reliable pollsters use dependable

See “Millennials” continued on next page

Safety Summit Has Been Rescheduled for June 28th

Due to the late winter snowstorm Stella, the Safety Summit has been rescheduled to June 28, 2017 at the Best Western Premiere in Harrisburg. Speakers and topics include:

- Industry Safety Update - Jesse Maxwell, SWANA National
- OSHA & the Waste Industry – Dale Glacken, US Dept. of Labor, OSHA
- Frontline Safety Management - Mathew Taylor, CSP, Amerisafe Consulting & Safety Services
- Radiation Safety and Equipment Consideration for Landfills - Bonnie J. Meilner, LAURUS Systems
- Lone Worker Safety Monitoring - John Aliveto, CSP, Montauk Energy
- Focus 6 Safety - Marc Buckley, Republic Services
- Spotter Training & Traffic Control at the Working Face - Steve Burn, SECCRA
- Personal Landfill Gas Protection - Scott Messier, SCS Engineers

This is a great opportunity to earn 5 CEUs! 🍷

When:

June 28, 2017
9:00 a.m. to 3:30 p.m.

Where:

Best Western Premiere
800 East Park Drive
Harrisburg, PA 17111

Register online at <http://www.keystoneswana.org/>.



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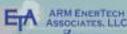
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NJ Governor Expands “Move Over Law”

New Jersey joins a list of only 15 states that mandates “*Slow Down to Get Around*” to include sanitation vehicles. New Jersey Governor Chris Christie signed 22 bills into law Monday, May 1st including one that requires motorists approaching sanitation vehicles to move over or slow down. Christie signed “Michael Massey’s Law,” sponsored by Sen. Jennifer Beck, a Republican from Monmouth, which is named for a 39-year-old Freehold man who was killed when he was hit by a car while loading a sanitation vehicle as part of his public works duties in Ocean Township.

“Michael Massey’s Law” (S-518/A-4452) expands the “Move Over Law” to include sanitation vehicles. The bill would require motorists approaching sanitation vehicles, if possible, to reduce their speed to less than the posted speed limit; be prepared to stop; and make a lawful lane change to at least one lane away from the sanitation vehicle. Violators would face a maximum \$500 fine.

“Michael Massey’s tragic death was preventable. He was a loving husband and a father of two young children who lost his life because of a driver who chose to speed past a sanitation vehicle,” Beck said in a statement. *“Michael Massey’s Law cannot alter the great loss his family has experienced, but I am hopeful that it will be just as successful at saving lives.”*

Editors Note: Pennsylvania does have a “Steer Clear” law that went into effect in 2001. However it currently only applies to emergency vehicles and carries a maximum fine of \$250. The Senate Transportation Committee introduced Senate Bill 288 on February 8th that would increase fines and penalties for repeat offenders. The bill did not provide any additional provisions for refuse collection vehicles. Unfortunately Senate Bill 288 was removed from the table and there is no indication of whether the Bill will be reintroduced. 🇺🇸

Excerpt from the Article written by: Tom Davis
Originally Published: May 2, 2017
Source: <https://patch.com/new-jersey/pointpleasant/chris->

“Millennials” continued from previous page

methods and outcomes. They tend to provide data consistent with one another. To understand the Millennial impact on the waste and recycling industry, we pulled some general profile data gathered in various types of surveys within the past few years by Pew Research, Brookings Institute, and Nielson. Consider some Millennial traits and how they form the basis for certain policy types.

Millennials distrust corporations. In fact, they distrust institutions in general. Consequently, The Millennial generation believes that more regulatory control of corporate activity is necessary and that it warrants any increase in cost that may result. This group does not perceive regulations to negatively impact profits or jobs. Among this generational group, 83 percent agreed with the statement that “there is too much power concentrated in the hands of a few big companies.” You may recall the Occupy Wall Street movement primarily orchestrated by Millennials and aimed at the wealthiest 1 percent. Likewise, Millennials believe the profit margins for large corporations are too high.

Corporate environmental compliance and social sustainability practices are highly valued. The corporate actions need to be visible. Initiatives should the consumer feel like a participant through caused based marketing, since Millennials vote with their wallets. They represent more than half of the more than 50 percent of those who will pay extra for sustainable products, 51 percent of those who check the packaging for sustainable labeling and 49 percent of those who prefer to work for a sustainable company

About 53 percent of all Millennials expect an activist government. The Millennial generation represents the highest ratio in any generational group to prefer bigger government providing more services. Of course, ESD thinking is coupled into it all.

Based on their viewpoints on corporate responsibil-

ity, it seems logical to assume Millennials would expect Extended Producer Responsibility for a growing number of products and packaging. Take-back programs and rewards for recycling also fit.

The willingness to pay more for sustainable products might encourage laws geared at toxicity in packaging. Bans or fees as monetary deterrents for using certain products like plastic bags would see obvious to Millennials. A highly visible issue like food waste, with all its societal ramifications, is another easy target. Facility siting and permitting could face tighter environmental justice scrutiny. There will also be more support and subsidies for circular economy initiatives, remanufacturing, and resource optimization

Engage and Energize

If you're not engaging young professionals, your strategic planning could be off course. We've all sat through "can't do" meetings. Too often organizations limp along under a dysfunctional system believing tiny patches can renew an eroding framework. This comfort level with the status quo is symptomatic of policy-makers isolated from the realities of the evolving marketplace. Where staff burnout and lack of vision prevails, change is considered too complicated and preserving internal protocols becomes the sole priority. I've witnessed the effect of injecting the Millennials' perspective into brainstorming sessions.

Even when the ideas aren't the best, the freshness of the comments can steer the discussion in new directions, which spark solutions from experienced staffers with the advanced skill sets to see the project through. The young professionals feel both a sense of inclusion and respect, which they desire. The organization and mature employees benefit from a renewed sense of purpose. That's a Win-Win. 🍷

Written By: Michele Nestor

Originally Published: May 2, 2017

Source: <http://www.waste360.com/waste-reduction/new-day-dawning-policy-and-regulation-reign-millennials>

Solar Power on Landfills Mini-Tech Recap

The Solar Power on Landfills Mini-tech was held on April 26, 2017 at the Closed York County Sanitary Landfill. The seminar was presented by Rich Hazenstab of the York County Solid Waste Authority and Richard Mazza of Solar Renewable Energy, LLC.

YCSWA along with York County Solar Partners, LLC developed a 240,000 watt (DC) solar panel energy system consisting of 806 panels constructed on two acres of land at the closed York County Sanitary Landfill. 🍷

Written By: Denise Wessels



Group touring the landfill site observing the solar panel installation and asking questions.



Rich Hazenstab of YCSWA, and Richard Mazza of Solar Renewable Energy, LLC in the classroom discussing the installation process.

SWANA honors PA Solid Waste Executive

The Solid Waste Association of North America's (SWANA) Planning and Management Technical Division has given its annual Distinguished Individual Achievement Award to James D. Warner, CEO, Lancaster County Solid Waste Management Authority (LCSWMA), Pennsylvania. The award was presented at SWANA's Senior Executive Seminar in Tampa, Feb. 20, 2017.

"The Distinguished Individual Achievement Award gives peer recognition to a person who has made significant contributions to the solid waste industry," says Scott Pasternak, director of the volunteer technical division

that selected Jim for this award. "We chose Jim Warner for this honor due to his successful efforts in building LCSWMA as an innovative organization. SWANA members look to Jim and his organization for cutting-edge ideas on how to think about solid waste as a resource for renewable energy and clean power."

Jim Warner is a 32-year veteran of the solid waste industry. He began his career in 1985 as a recycling coordinator in New Jersey, before joining the LCSWMA in 1987 as the first county recycling coordinator in Pennsylvania. Jim took the reigns as CEO of the authority in 1996.



From Left to Right: Scott Pasternak, Jim Warner, David Biderman, and Andrew Quigley pose during the awards presentation at the 2017 Senior Executive Seminar.
- Photo from Waste Today

During the last 20 years as CEO, Jim led LCSWMA through many crucial and strategic moves to position the organization as an industry leader. Under Jim's direction, and through his innovative thinking, LCSWMA grew financially (currently AA- S&P Rating) and invested in resources and projects that not only fulfill its core mission, but also enhance the livability of the local community it serves.

With an annual operating budget of \$79 million and total assets of \$316 million, LCSWMA manages more than 950,000 tons of municipal solid waste each year with its nationally recognized integrated system, including two waste-to-energy (WTE) facilities that serve south central Pennsylvania. This advanced system also involves the active management of a robust renewable energy portfolio; thus requiring LCSWMA to stay abreast of clean power legislation and current energy market trends.

In total, LCSWMA's integrated system includes three facilities in Lancaster County

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comprised of a 2,200-tons-per-day transfer station; 1,200-tons-per-day mass burn WTE facility; and 2,000 tons per day landfill. Additionally, LCSWMA owns an 850-tons-per-day mass burn WTE facility located in Harrisburg, Dauphin County. Collectively the system serves about 810,000 residents in two counties.

Beyond working to transform waste into a resource, Jim also serves on the board of directors for many local economic and community organizations, as well as actively participating in SWANA, where he previously served as president of the International Board of Directors from 2011-2012.

Jim holds a Bachelor's degree in education from Millersville University and a Master's degree in geo-environmental studies from Shippensburg University.

To learn more about SWANA's Distinguished Individual Achievement Award program, visit swana.org/awards/DIAA. 🗑️

Written By: Waste Today Staff

Originally Published: February 23, 2017

Source: <http://www.wastetodaymagazine.com/article/swana-honors-jim-warner-lancaster-county-pennsylvania-solid-waste-award/>



Landfill Leachate Mini-Tech Recap



Water samples collected from different stages (from raw leachate to final effluent discharge) of the on-site leachate treatment plant facility

The Grand Central Landfill welcomed over a dozen guests to the Keystone SWANA Landfill Leachate Mini-Tech training on May 18, 2017. The training was held at the landfill's wastewater treatment plant.

Senior Industrial Wastewater Process Engineer at Geosyntec Consultants, Inc., Rohan Menon and Grand Central Landfill's Wastewater Treatment Plant Manager, Chad Beer presented the current and future challenges of landfill liquid management as well as treatment plant best practices and environmental regulations.

The event was open to registered Keystone SWANA Members as well as non-members. Many of the attendees were contractors and consultants looking to acquire more knowledge on the latest technologies involved with landfill liquids treatment.

Both Menon and Beer walked guests through the different stages of the on-site leachate treatment plant. Mr. Beer had water samples from raw leachate to the final effluent discharge to visually demonstrate the quality of the liquid as it is processed through the on-site leachate

treatment plant. The Grand Central Landfill is unique as it not only treats its own leachate but it cleans the water to a state approved discharge quality. The Grand Central wastewater treatment plant is a top-grade facility that has enhanced the water composition and aquatic life of the local tributary that connects to Little Bushkill Stream.

"I've been to many treatment plants, nationally and internationally, but I can tell you that this site here has a very complicated system. It is by far the cleanest facility I've ever been to; their plant is very systematic and their data collection is unbelievable," said Menon.

After the mini-tech training session, Mr. Beer provided guests with a tour of the Grand Central Wastewater Treatment Plant. The tour lasted about 30 minutes and provided a first-hand look at technologies employed by the facility. Both Waste Management representatives explained the pretreatment process as well as the use of Reverse Osmosis technology at the landfill plant.

"Landfill liquids management is complex and challenging; a proactive approach is critical to implementing a sustainable management strategy for the future," commented Menon. 🇺🇸

Submitted by Adrienne Fors, Community Relations for Grand Central Landfill



Chad Beer discusses plant sequence of operations to a crowd of 15 at the Grand Central Landfill WWTP.

Chapter Announces Scholarship Recipients

The Keystone SWANA Chapter has just announced the recipients of this year's SWANA Scholarship awards. This year, four scholarships were awarded to some very deserving students. We would like to take a brief moment to thank all of those who have advertised with us, both in the newsletter, and at the Road-E-O or Annual Fall Conference. It is your revenue that helps to give these future solid waste professionals a helping hand in funding their education. So without further ado, the winners of the 2017 Keystone SWANA Scholarships are:

- Katelyn Ponce, Step-Daughter of Alan Roman of Roman Consulting, Inc.; Receiving \$2,800 to attend Misericordia University
- Luke Synder, Son of Kyle Snyder of Venture Engineering and Construction; Receiving \$2,100 to attend the University of Florida
- Blake Barstar, Son of George Barstar of GEI Consultants, Inc.; Receiving \$750 to attend Temple University
- Blair Barstar, Son of George Barstar of GEI Consultants, Inc.; Receiving \$450 to attend California University of Pennsylvania



As is traditional here in *The Keystone*, the scholarship essays have been published starting on the right. We feel it is important to provide an insight into how the students of today view some major issues in the solid waste industry. ♣

A Zero Waste Future - Katelyn Ponce

SWANA Technical Policy T-1 states that “integrated solid waste management is considered a series of complimentary actions dedicated to reducing the amount of solid waste generated and managing that which is generated in an economically and environmentally sound manner” (SWANA Technical Policy 5). A simplified definition of solid waste is the terminology for items generated by human activities that are no longer wanted or considered useful. This leads to the removal of these unwanted items. This is where solid waste management becomes relevant. The removal consists of onsite handling, waste collection, waste transfer and transport, processing and recovery (like recycling or reusing), and final disposal of water materials in landfills or waste-to-energy facilities.

Globally, everyone participates in the process of solid waste management. The general population produces solid waste, and the waste management companies and agencies collect and transport it. They then make an economical decision whether the trash should be recycled, reused, or disposed. In the case of recycling, the garbage ultimately goes back to the general population through the recycling process.



Beneficial use of landfill gas is another way of recycling. A few years ago, I completed a science fair project testing landfill gas production. I simulated two capped landfills by using sealed buckets, each having different moisture contents. I then measured the amount of landfill gas produced, which in turn, determined which one would produce more energy.

While there are many issues that solid waste management has, I believe one of the biggest issues is recycling. Getting more people to participate in recycling helps to control the waste that is out there. Recycling

leads to Zero Waste, a thought of the future. Zero Waste is a new approach of solid waste management that allows products to be completely reused or recycled, so trash is no longer sent to landfills. If through solid waste practice, we can end up in a Zero Waste world and have a cleaner, more environmentally-safe future. ♻️



The Five Waste Disposal Methods - Blair Barstar

The solid waste industry helps to collect, transport, and contain the trash we make every day. Waste is defined by human and animal activities that are considered useless and unwanted. Many people put their trash in the trash can without a second thought about where it goes. There are five ways and places our trash is disposed of.

1. The first disposal method is recycling. Recycling serves to transform the waste into products of their own genre through industrial processing. Paper, glass, aluminum, and plastic are commonly recycled. It is environmentally friendly to reuse the wastes instead of adding them to nature. However, processing technologies are pretty expensive.

2. The second method is incineration. Incineration features combustion of waste to transform them into base components, with the generated heat being trapped for deriving energy. Assorted gases and inert ash are common by-products. Pollution if caused by varied degrees dependent on the nature of waste combusted and incinerator design.

3. The third disposal method is composting. Composting involves the decomposition of organic wastes by microbes by allowing the waste to stay accumulated in a pit for a long period of

time. The nutrient rich compost can be used as plant manure. However, the process is slow and consumes a significant amount of land.

4. The fourth method is a sanitary landfill. This involves the dumping of wastes into a landfill. The base is prepared of a protective lining, which serves as a barrier between wastes and groundwater, and prevents the separation of toxic chemicals into the water zone. Waste layers are subjected to compaction and subsequently coated with an earth layer. Soil that is non-porous is preferred to mitigate the vulnerability of accidental leakage of toxic chemicals. Landfills should be created in places with low groundwater level and far from a source of flooding. However, a sufficient number of skilled manpower is required to maintain sanitary landfills.

5. The fifth and final method of waste disposal is ocean dumping. Wastes, generally of radioactive nature, are dumped in the oceans far from active human habitats. However, environmentalists are challenging this method, as such an action is believed to spell doom for aquatic life by depriving the ocean waters of its inherent nutrients. And those are the ways waste is disposed of. ♻️

Education is the Key - Luke Snyder

Once a week you take wheeled waste carriers to the curb, then upon arriving home from school or work the waste magically disappears. From there, you only read the occasional complaint about the neighbor near the landfill complaining about the smell. Of course, it's not that simple. Behind the scenes, the secret of managing this waste is left in the hands of those that are experts. Since we know so little about what happens to this waste every day, it was important to me to learn about this topic and share it with many others. Through new means of cleaning waste, educating others on recycling, and changing how people view waste management, we can make a difference in the process and provide cleaner ways to aid society.

Solid waste management is a constantly changing and integral part of every society. Most citizens focus more on what resources are coming to our homes, but no one really discusses what happens after these items leave our homes. With more importance being placed on solid waste management, we cannot only get rid of unwanted waste but control the waste in a way so that it is healthier for humans and the environment.

The main goal of solid waste management is to eliminate waste in the most beneficial way possible and to cause as little harm as possible to the surrounding residents. While organizations can provide helpful ways of doing this, it is my opinion that the everyday person is responsible for keeping the world clean. The government can provide citizens with a recycle bin, but it is the individual's responsibility to utilize the bin and pay attention to what they put in it. There is so much information in this world on how to properly recycle, and if

people cannot grasp this, then we need to find other ways to keep the world clean. This is where waste management associations, like SWANA, can play a vital role in our future.

Although no one can predict the future, we can work on today and try to prepare. The best thing we can do is find new ways of reusing energy sources. One example would be landfill, wastewater, and anaerobically digested gas into the natural gas-quality gas for use in heating homes, powering our vehicles, cooking and other beneficial uses that will continue to support our nation and our environment. This use of methane takes gas that would either go unused or escape into the atmosphere and provides a great, green alternative to heating oils or coal. Additionally, with the massive space provided by landfills, the use of this treated methane (as natural gas) combined with solar and/or wind farms could heat or provide electricity for entire towns or industries.

There are so many reasons to promote solid waste management and unfortunately, a lot of people are not educated on the matter. Aside from teaching people how to recycle, I believe people need to learn what happens to waste after they are done with it. How do we keep our plastics from polluting our waterways? What is the next big renewable energy idea that may provide a zero waste alternative? Currently, these questions

are not the basis for discussion around dinner tables, in local politics, or generally within the American society, but with an increasing awareness, millions of people will learn more and want to do their part. 🇺🇸



The Many Forms of Waste Management - Blake Barstar

There is an average of around 220 million American's who are responsible for producing waste each year. This is a statistic much bigger, by far, than any other nation in the world. This alarming statistic gives both government and environmental associations a reason to develop numerous ways to solve this problem. The solution to this problem is called waste management which is considered a complex issue that surrounds more than twenty different industries.

Waste management involves transportation, collection, garbage disposal, sewage and other waste products. Waste management is the process of dealing with waste products and offers alternatives such as recycling items that don't belong in the trash. It leads to the solution of how trash can be used as a valuable source. Waste Management is an important issue that not only household and business owners should be aware of, but an issue that everyone should be aware of. Waste management disposes of products that you use in a safe and efficient manner.

Waste management, also known as waste disposal, is all of the activities and actions required to manage from an initial product to the final disposition. This process includes transport, treatment, disposal, and collection of waste together with regulations and monitoring. It also surrounds the regulatory and legal framework that relates back to waste management guidance and recycling. There are eight major groups of waste management which include reduce and reuse, animal feeding, composting, recycling, fermentation, landfills, incineration, and land application. There are certain waste types that have hazardous conditions and can't be disposed of without special handling to prevent contamination from occurring. It's up to you on how you will choose to dispose waste, just make sure you look at all the options of waste management. 🗑️

DEP Finds Recycling and Organic Program Support

The Pennsylvania Department of Environmental Protection (DEP), Bureau of Waste Management, has awarded SCS Engineers (SCS) a contract to provide recycling and organics management technical assistance to local governments throughout the state. Brent Dieleman, SCS's Project Manager, has years of experience administering these types of programs for the SWANA.

Pennsylvania ratified "Act 101" in 1988 to manage waste and promote recycling across the Commonwealth. The DEP developed the Recycling Technical Assistance Training Program to help local governments comply with Act 101 by improving and expanding their collection and diversion programs. SCS will help administer and provide technical assistance to this Program. The comprehensive support provides for curbside and drop-off recycling programs, solid waste planning, public education, materials processing, equipment, technical training, environmental protection programs, and organics management.

Additionally, local governments can apply for technical assistance, up to \$7,500 per applicant, to help expand and improve their recycling and organics management systems. SCS will now work with applicants to assess their needs and refine the scope of their project. Once DEP approves a technical assistance project, SCS will then provide specialized, tailored training to each recipient. 🗑️

*Content was shortened to fit.

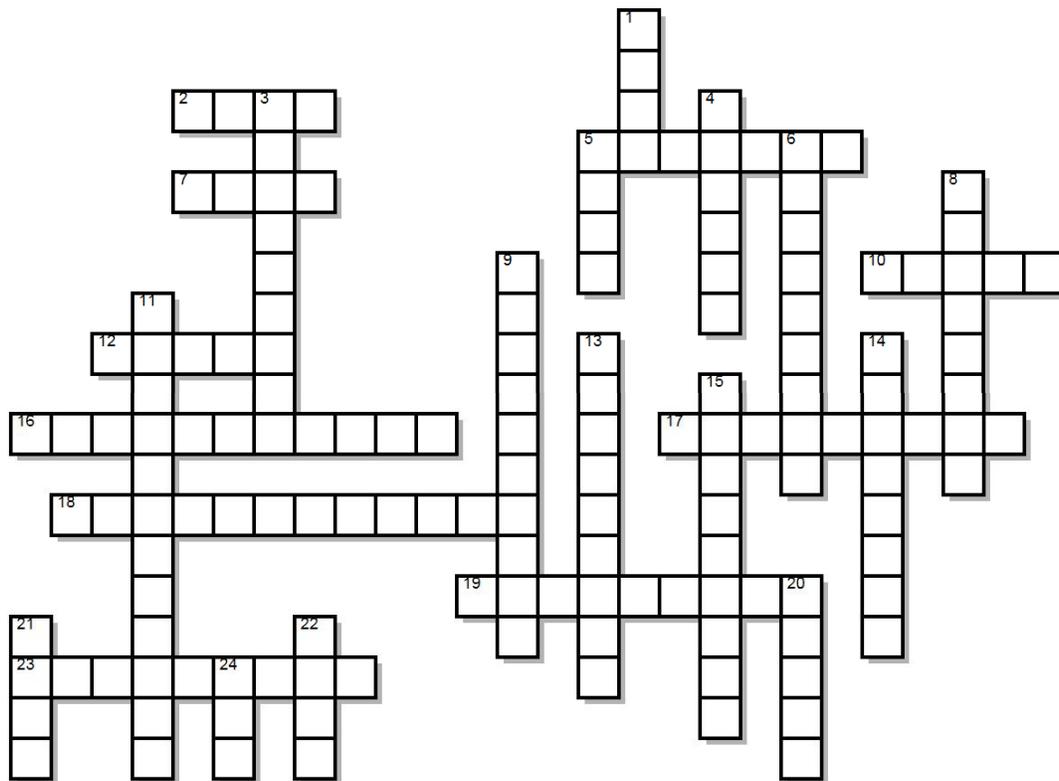
Submitted by: Denise Wessels

Originally Published: May 5, 2017

Source: <http://www.scsengineers.com/scs-press-release/scs-engineers-provides-pennsylvania-dep-recycling-and-organics-management-support/>

Just For Fun - The Keystone Crossword

Fun in the Sun



See Page 25 for Solution

ACROSS

2. Summer activity and WM CEO last name
5. Waste 360 Keynote Speaker at Fall Conference
7. Waste disposal method count of Blair Barstar
10. Most popular summer vacation spot
12. Mini-Tech topic on these flying machines
16. The 'M' in O&M
17. Goal of Katelyn Ponce
18. New man-made geologic layer?
19. Frozen summer treat accidentally invented by child
23. The 'O' in O&M

DOWN

1. Queen of the Gods that gives name to June
3. Tonnage increase in TN. glass recycling in January
4. CEO awarded honors by SWANA
5. Body part must hurt by trash collectors
6. The key goal of Luke Synder
8. Mini-Tech topic on landfill treatment of...
9. A summer treat from the cucumber family
11. Landfill host to May Mini-Tech on Leachate
13. Latest "slow down to get around" state
14. Container of danger to trash workers
15. The focus of Earth Day 1990
20. Energy source topic in past Mini-Tech
21. Thorny flower fort he month of June
22. Number of SWANA scholarship winners
24. Acres used for new solar farm in York County Landfill

Glass Recycling Pains in Knoxville, TN

Glass taken out of single stream creates increase in recycling rates but creates a hassle for businesses.

On January 1st, the city of Knoxville said no more to picking up glass. The city is no longer accepting glass as part of its curbside recycling program. But while the convenience is now gone, the amount of glass being recycled is shattering expectations. The change has prompted a 63 percent jump in the amount of glass coming into city recycling centers. Glass drop offs in the last six months of 2016 averaged nearly 28 tons a month, now they're up to 45 tons in the first month of the year.

"17 more tons of glass was recycled in January compared to the previous months. Knoxville has really stepped up to the challenge of recycling glass separated," said Knoxville Solid Waste Manager Rachel Butzler. But it hasn't been a great deal for everyone who now must change how they recycle. Sugar Mama's on Gay Street serves beer and managers said it's a nightly struggle to get trash cans full of glass cans to city recycling bins.

"We used to take them to the recycling bin at the corner here and now we're tossing them away," said beer

manager Jason Carpenter. At the space Sugar Mama's gets to use for recycling, there's only about six bins and they have to share that space with apartments in the neighborhood. *"These recycling bins that we have on the 100 block are constantly overflowing, we typically have to put our recycling in a giant box and put it next to the recycling,"* said Carpenter. For the city, this change means making better use of the glass that people throw out.

"In the past few years we discovered that the single stream process breaks up the glass into really fine pieces and you get a lot of contaminants in the glass. So recycling glass in the single stream is not an effective way of recycling glass," said Butzler. Jason Carpenter with Sugar Mama's said he'd like to see the city talk with business owners about how they're being impacted. The city also is looking to expand curbside recycling by buying 6,000 recycling carts over the next few months. There's a waiting list, but officials say to give them a call if you want to get in the program. ▼

Article By: Staff writers of WBIR

Originally Published: February 24, 2017

Source: <http://www.wbir.com/news/local/glass-recycling-up-in-knoxville-but-creating-a-hassle-for-businesses/412947092>

Energy Power Partners

Renewable Investments With Sustainable Results

WM CEO Speaks About Recycling and Landfills



Jim Fish, named the Chief Executive Officer of Waste Management, Inc.

James C. Fish Jr., has had a busy six months since taking the helm at Waste Management (WM). Between rethinking

about the use of data [is important.] How do we take those onboard computers that we have now on every truck and ultimately turn that into a tool to further the differentiation between us and others? It seems to me kind of obvious because so many companies are doing it, but maybe not quite as obvious in our industry. But look, it's going to come. It's already coming. You see other companies putting technology to use and we are hoping to take a leadership role there.

ing its recycling approach and restructuring recycling contracts, WM has been showing some of its strongest growth in years. The recent wins of a 10-year franchise collection contract in Los Angeles and a 20-year export contract in New York have added to that momentum. Like others in the industry, WM is also expanding its fleet of compressed natural gas (CNG) vehicles and looking at new ways to utilize technology on the road.

All of this comes at a time when cities are looking for new ways to move away from using landfills, while setting high diversion rate goals that may not correlate with commodity realities. Waste Dive caught up with Fish, the president and CEO of Waste Management, in New Orleans...to hear the latest on where the industry's biggest player is heading next.

The following transcript has been edited for brevity and clarity [by both Waste Dive staff and *The Keystone* Staff].

Waste Dive: You recently mentioned plans to hire a CTO (chief technology officer) and to my knowledge no other large company in the industry has one. What made you decide it was time?

Jim Fish: Well I think technology dictates it to some degree. We've put technology into place to the tune of between \$100 to \$150 million a year over the last five years. While we have vice presidents within our technology group, putting somebody on the job - one person on the job as opposed to two - and somebody that's thinking

What will the ideal candidate look like? Would you prefer somebody from within the industry or someone from outside who could bring a new perspective?

Fish: Somebody that has an understanding of our business is important. We'll certainly look externally and we'll look internally ... and we do that with just about every job. It is helpful to have somebody that has some understanding of routing and logistics businesses. So I think that candidate will look like somebody that understands technology, not necessarily somebody that knows how to write code. Somebody that can understand where the future is. We have a huge amount of data. How do we use it best? What type of customer solution do we present to our customers?

About 44% of Waste Management's fleet is now CNG. What is the high end of that number? Could it ever reach 100%?

Fish: Ideally, long-term it could be 100%. What keeps you from getting to 100% in the near term is that we've pretty much put it into our big sites. And when you put CNG into your big sites you have to retrofit your maintenance facility and you have to put in individual fueling stations. That works fine in Oakland, CA where we may have 250 or 300 trucks. But in a small location in eastern Kentucky where you have 10 routes, you don't get the economies of scale. Because it's not that much less expensive to retrofit your maintenance facility...and putting

in the compressor station and all of that on a 10 route site is also challenging. So looking at mobile fueling solutions and having something that's economically viable, I think that's the next step required in order for us to go all the way to 100%.

Last year, Waste Management announced it would begin measuring recycling activity by the amount of greenhouse gas emissions reduced rather than tonnage diverted. How are municipalities responding so far? Are you getting any pushback?

Fish: I think they're responding well, but there's still more work to be done. If you look at an 8-yard container of cardboard versus an 8-yard container of glass, glass is heavier. Therefore a municipality that has weight-based goals would be inclined to say, *"If we had to choose between the two let's pick the container of glass."* When in fact the purpose of recycling is to improve the environment. If you look at those two from an environmental standpoint clearly the recycling of the container of cardboard is better for the environment than the container of glass. The shortage of raw material is on the cardboard side because it comes from trees versus glass which comes from sand. So I think our objective is to try and communicate that to these municipalities, to let them know, *"Look, the objective should be to recycle more not to divert more."* They tend to think of diversion in weight basis.

Is part of that making the economic case to them as well?

Fish: Yeah for sure. When we look at our profitability by commodity type, cardboard ends up being more profitable than glass for us. And it goes back to the fact that the raw material is very cheap for producing a glass bottle versus cardboard. Cardboard fluctuates a bit, but companies would prefer to use recycled cardboard because it is

less expensive than virgin cardboard. Not necessarily the case with glass.

During recent interviews, you've mentioned investing in landfill alternatives. What does that look like? Are we talking new conversion technologies?

Fish: It takes a number of different forms. We've spent over \$500 million, probably closer to \$600 million, looking for that next generation of landfills. There's a natural end of life for every single landfill. No landfill lasts forever. You have a couple of options with landfills. There's a lot of land in the U.S. and Canada, so you can build farther out. Or maybe we build closer in, but with an alternative technology.

It's got to be both environmentally and economically sustainable. Some of these technologies simply aren't scalable. Some of them don't work to begin with. Scalability is a big hurdle. It may work in a small laboratory setting, but it doesn't work on a bigger scale. Then it has to clear the economics hurdle. So far we've had a tough time getting them to clear that hurdle because landfills are very cost-effective. So being cost-competitive with a landfill is tough.

We're in an R&D stage right now with it. We've [invested in] a limited partnership with some venture capitalists, who have PhDs on their staffs and they're out combing the world, looking for those technologies.

Is there anything in particular you're looking at? I know pyrolysis was one of the options that Waste Management had been exploring in the past.

Fish: There's a couple of intriguing technologies. We're looking at one called SpecFUEL that we've invested in out in Philadelphia. It creates almost a coal substitute. We're still working through whether we can make it capital and operating cost efficient, but it is scalable. We've got to look and see whether the customer can receive it. So if it's a big cement kiln or if it's a public utility, can they burn SpecFUEL in their boilers? We think they can. I'm not going to say we're ready to convert from landfill to SpecFUEL tomorrow, but that one has some promise to it. There's a number of them that look interest-



ing to us, but nothing that's been able to clear those three hurdles yet.

Are regional costs helping drive where you focus on these technologies?

Fish: Correct. It makes a big difference if your tip fee is \$60 versus \$15 and that helps the economics a lot. So as you see these things pop up it's not coincidence that our SpecFUEL [facility] is in Philadelphia. Or we've got some other technologies that are in other parts of the country, or in Canada, where disposal rates are higher. You're not going to see these pop up in areas that have \$15 tip fees, yet.

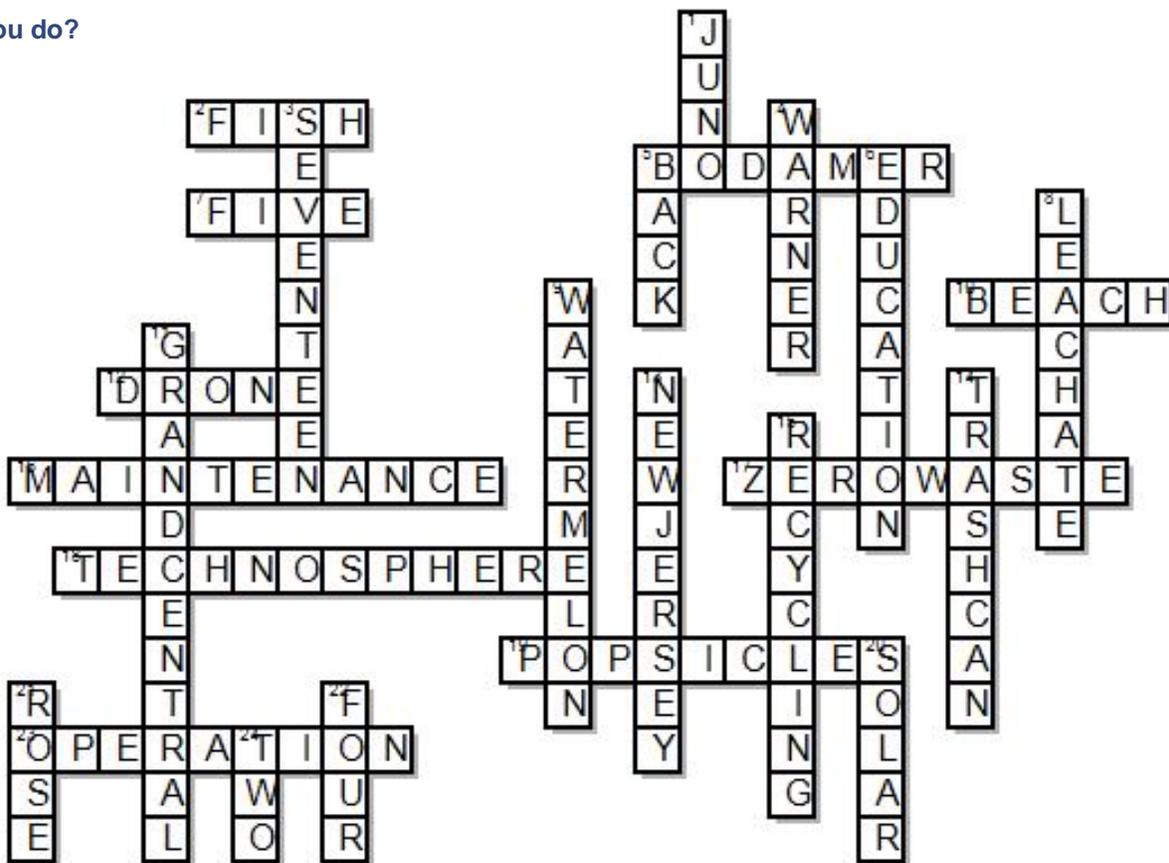
What is on your radar for the rest of the year in terms of industry or economic trends?

Fish: The economy is certainly on top of mind right now for me. Today there were some good manufacturing numbers that came out and job hiring within the manufacturing sector was up for the fifth straight month. Right now most CEOs are focused on the economy. Can this administration establish enough consensus...to come up with something that's productive for the U.S. economy? And rationalize the corporate tax structure so that people aren't storing money overseas? Bring it back home. If the administration can do that, then it'll be a big success for not just our industry, but all companies within the U.S. and Canada. 🇺🇸

Article By: Cole Rosengren
 Originally Published: May 9, 2017
 Source: <http://www.wastedive.com/news/waste-management-ceo-jim-fish-on-rethinking-recycling-and-the-next-generat/442278/>

Crossword Solution

How did you do?



New to the Keystone SWANA Family

The Keystone Chapter of SWANA has seen a spike in membership as we have continued to grow! Over the past four months we have added 31 new members to the 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 our family since the last publication.

- Jarod Watson, Rusmar, Inc.
- Jonathan Town, American Disposal Systems, Inc.
- Kenneth Jones, O'Brien and Gere
- John Ficula, Waste Management
- Andrew DiFonso, Venture Engineering and Construction
- Alexander Stepanow, Widener University
- Brion Maguire, Trucks and Parts of Pennsylvania
- Zachary Hill, Widener University
- Justin Stevenson, BSME, SCS Engineers
- Jarod Owens, Southern New Hampshire University
- Scott Schoffner, SCS Engineers
- Michael Bishop, Hoffman and Lamson Gardner Denver Products
- Joseph Klaus, Process Combustion Corporation
- Steve Yohe, Seneca Landfill, Inc
- Richard Walton, Noble Environmental Inc.
- Nick Stork, Noble Environmental, Inc.
- David Smith, Seneca Landfill Inc.
- Brandon Stormer, Noble Environmental Inc.
- Mark Reider, Lancaster County Solid Waste Management Authority
- Patti Williams, Noble Environmental Inc.
- David Zwicky, Zwicky Processing and Recycling
- Mark Albert, Phoenixville Borough
- Micah Baker, Northern Tier Solid Waste Authority

- Randy Savage, Chester County PA Solid Waste Authority
- George Murray, GCM
- Dheeraj Katyal, Carnegie Mellon University
- Rochelle Samuel, Carnegie Mellon University
- Emily Archer, Wastequip/Toter
- Albert Silkroski, Hilltop Enterprises Inc.
- Douglass Whitehead, Republic Services Inc.
- Landon Hutchison, Cascade Engineering

The Keystone Chapter strives to share pertinent information and provide continuing education that serve 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, 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 phone at (866) 467-9262 or by e-mail at chanda@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/>

Some events to plan for include:

JUNE 2017

- Thursday, 6/1, Submission Deadline for Grant H. Flint Scholarship recommendations to SWANA headquarters
- Thursday, 6/1, 10 am, **Board Meeting** hosted by **Chester County Solid Waste Authority**, Narvon, PA.
- Thursday, 6/1, 11:30 am, **Drone Demo with Infrared Technology Mini-Tech**, Narvon, PA
- Thursday and Friday 6/8 - 6/9, **Mid-Atlantic Road-E-O**, Ridgely, MD.
- Thursday 6/15, 10 am, **YP Technical Tour**, Montgomery, PA
- Wednesday 6/28, 9 am - 3:30 pm, **2017 Safety Summit**, Best Western Premier, Harrisburg
- Review Annual Budget
- Distribute Summer edition of *The Keystone*

JULY 2017

- No Activities Planned

AUGUST 2017

- Thursday, 8/3, 10 am, **Board Meeting Conference Call**

SEPTEMBER 2017

- Wednesday and Thursday, 9/6 - 9/7, **19th Annual Joint Fall Conference**, Hilton Harrisburg
- Thursday, 9/7, **Chapter Annual Business Meeting and Election** immediately following Fall Conference
- Friday 9/15, deadline to submit articles for Fall Edition of *The Keystone*
- Chapter Fiscal Year Ends



The SWANA Newsletter is published 3 times a year in **February, June and October.**

If you would like to have your article included in *The Keystone*, please submit it by the 15th of the month prior to the scheduled release date. Any late articles will be held until the next issue.

****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.****

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

u 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, please contact **Alison D'Airo** at Barton & Loguidice, Newsletter Secretariat Production Services, or any member of the Newsletter Committee listed below:

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Chapter members: please freely share this info with others that you work with or who have an interest in waste news in PA. **Please remember to send Chanda Martino, Chapter Secretariat, your current email address** as all future newsletters, as well as informational broadcast faxes and other communications, will only be sent via email. Her email is: chanda@keystoneswana.org. If you did not receive your copy of this newsletter emailed from Chanda, *you are not on our email list for news.*



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