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June 2016



Waste & Water

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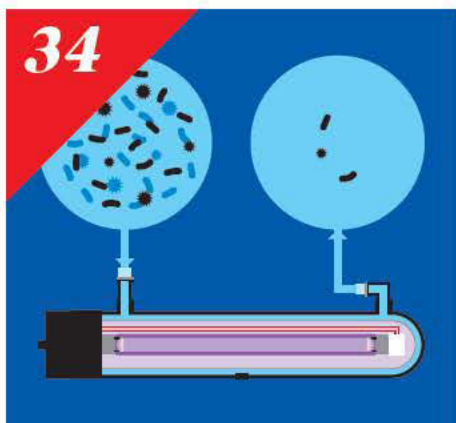
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On the Cover

The new, fully automated Roto Pac auger-driven compactor from New Way Trucks is built to make short work of solid waste or organics. Find out more at www.NewWayTrucks.com. (Photo provided)





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publication manager
KIM GROSS
kgross@the-papers.com



publisher
RON BAUMGARTNER
rbaumgartner@the-papers.com



editor
JODI MARLIN
jmarlin@the-papers.com



editor-in-chief
JERI SEELY
jseely@the-papers.com



account executive
NANCY BUCHER
nancy@themunicipal.com



account executive
CHRIS SMITH
chris@themunicipal.com



account executive
REES WOODCOCK
rees@themunicipal.com



account executive
DIANA LIKENS
diana@themunicipal.com



graphic designer
RICHARD AGUIRRE
raguirre@the-papers.com



business manager
COLLETTE KNEPP
CKnepp@the-papers.com

director of marketing
KIP SCHUMM
kschumm@the-papers.com

mail manager
JUSTIN BAILEY

THE MUNICIPAL

PO Box 188 • 206 S. Main St., Milford, IN 46542
800.733.4111/Fax 800-886-3796
Editorial Ext. 2392; Advertising Ext. 2408, 2505, 2485 or 2489
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Flint: No good deed goes unpunished



Jodi Marlin | Editor

THE WATER CRISIS IN FLINT, MICH., may prove to be one of the most high-profile infrastructure stories of the decade, even though nothing exploded, nothing flooded, no one was killed and no one had to dig out from under six feet of snow. When the story first broke, there wasn't enough lead time for media outlets to hype the situation, or for political candidates to package it; yet the entire country still recognized the failure as an example of the stealthy manner in which our nation's failing infrastructure is bringing about significant disruption.

Thanks to the ASCE report card and our own daily challenges, we knew that at every level U.S. infrastructure has begun to demand attention. Faced with aged solutions that are failing, most municipalities have little choice but to throw money at patchwork and temporary ones while the time-consuming process of funding a long-term solution hobbles along. That's precisely what Flint was doing when the patch failed.

According to *24/7wallst.com*, Flint has been paying the highest water rate in the nation for decades. As early as 1963, the city took interest in investigating ways to reduce the financial burden this laid on its residents and businesses. A plan to use an alternate source derailed, but when the 30-year contract with the Detroit Water and Sewerage Department expired in 2010, local officials revisited the idea.

By that time a significant financial crisis loomed in both cities, and Flint was right to prioritize a solution to its water problem. That year it joined a forerunner of the

Karegnondi Water Authority, a county-level initiative to supply water from Lake Huron to the area via pipeline.

The Municipal's Sarah Wright reported in July about the three-quarters completed pipeline. Running from Lake Huron into Genesee and Sanilac counties, it will supply up to 85 million gallons of raw water per day to authority members, including Flint. Several individual communities have already developed the necessary plans and facilities to treat Huron water.

One thing that didn't seem relevant at the time of The Municipal's first story was the extreme reaction manifested by Detroit to Flint's plan to abandon it. In March 2013, Detroit Water & Sewer launched a public attack against Flint for planning its departure, and in April gave the required one-year notice that it would terminate the city as a customer. With two years between the end of the relationship and the projected completion of the Huron pipeline, the city's only option — or more correctly, that of its state-appointed emergency manager — was to either temporarily use the Flint River as its main water source or sign a stopgap agreement with DWSD at an even higher rate than before.

Another detail that shouldn't have been beyond scrutiny was the fact that the Flint Water Treatment Plant was unprepared to treat the high levels of pollution and sediment present in the Flint River. It would seem the powers-that-be at the state level failed to consider this fact either.

Lastly, it's still unclear whether anticorrosion chemicals, had they been added at the last minute, could

have prevented or minimized leeching of the city's century-old pipes triggered by Flint River's contaminants.

Starting in July and going into August, Wright will try to determine the extent to which a much-wounded Flint must now repair its water delivery network, water treatment plant and hijacked budget. The Karegnondi pipeline is on schedule to open this month, but tremendous damage has already been done to the city's infrastructure and to something even more difficult to repair: the faith of local residents in their city and state government.

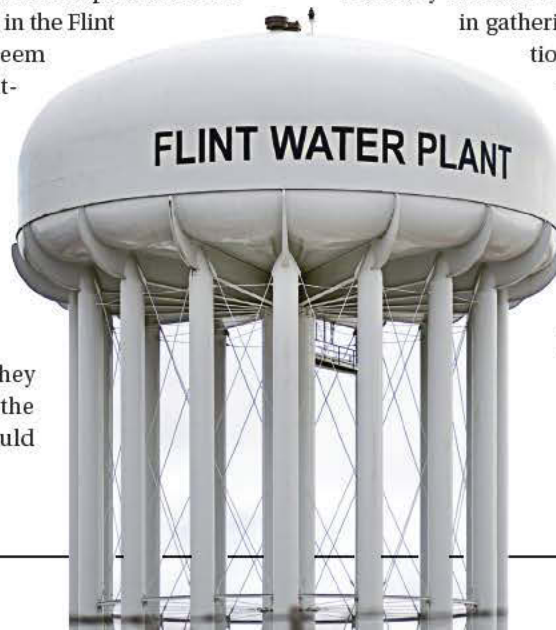
Flint deserves credit for assessing its dramatic financial situation, identifying high water rates as one of the culprits and addressing the problem. But the success of its efforts were hampered by the extenuating circumstances of bankruptcy, and as a result, a situation ensued that handcuffed local officials' efforts.

It's a shame things played out this way. It's even more regrettable that thousands of residents, city officials and the Flint business community are paying the price.

Many cities currently possess the potential for a Flint-style crisis. I wonder if perhaps the lesson we should learn from the situation is one of assigning the highest priority to putting our financial house in order before someone is forced to do so for us: someone

who may not have the time or interest in gathering all the information needed to wade

through complex situations to find solutions that address each community's unique challenges — and that are in our best interest. **M**





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In 2014 New Way Trucks broke new ground in Scranton, Iowa, for a 56,000-square-foot expansion that would increase production capabilities and create 75 new jobs. (Photo provided)

New Way Trucks continues to expand; leads refuse industry

Industry-leading manufacturer attributes growth to highly skilled employees, expanding dealer network

Scranton Manufacturing, the parent company of New Way Trucks, has been committed to innovation, quality and customer satisfaction for over 45 years. The family-owned company, which is based in Scranton, Iowa, continues to lead the industry with its innovative lineup of refuse trucks. New Way has seen tremendous growth in that time and continues to do so this day.

In 2014 the global garbage truck manufacturer broke new ground for a 56,000-square-foot expansion. The expansion, meant to provide ample space for increased production and future growth, positioned the company to boost the local economy with 75 new jobs. New Way wasted no time in putting the new space to good use. Later that year it introduced

Roto Pac, the world's first auger-driven, automated side-loader.

The fully automated Roto Pac, which was designed for organics collection, is the first mobile compactor with a leak-proof body up to 40 inches high that packs with an auger, as opposed to the traditional packing panel. Tested by operators all over the United States, it didn't take long to discover that Roto Pac works extremely well with municipal solid waste also. The truck's 27-cubic-yard body design boasts the best legal payload in the industry: 25,000 pounds. Coupled with the



fact that Roto Pac's auger is self-cleaning and eliminates the down time needed to clean out behind the packer ram at the end of each day, the auger can produce up to 23,000 pounds of torque at idle speed and is equipped with an automatic reverse cycle in the event of a jam.

"This machine really is purpose perfected," said New Way Regional Sales Manager Scott Rupiper. "From compaction rates and hopper to body displacement to the ease of maneuverability in tight spaces, Roto Pac streamlines operation and labor costs. All of this adds up to the most innovative collection vehicle on the market today."

Even with the recent success of Roto Pac, New Way shows no signs of slowing down when it comes to introducing innovations.

At this year's WasteExpo in Las Vegas, attendees will not only get to check out Roto Pac, but will also get a glimpse of a new Mammoth front-loader design, as well as a brand new Sidewinder automated side-loader option, in booth 1543.

The new-style Mammoth features a new curved floor and roof design for weight reduction, redesigned arm cylinder geometry to reduce forces on the bulkhead and center desk, and a lower hopper and body to allow the one-piece hopper door to slide under a roof-mounted compressed natural gas cabinet. In addition, a redesigned controller area network bus and hydraulic system allows for better system controls, as well as removal of the deceleration valve and mac air valve.

"This really is an elite front end loader," said New Way Vice President of Sales Phil Allen. "Not only have we minimized manufacturing costs by making one-piece body

Roto Pac is the first auger-driven organics or municipal solid waste collection truck in the world. It boasts the highest legal payload in the industry: 25,000 pounds. (Photo provided)

The new-style Mammoth front loader features a redesigned body and CAN Bus system. It can be seen at WasteExpo 2016, New Way booth 1543. (Photo provided)

"Without our highly motivated team, we wouldn't be able to do what we do... Our employees truly are our most important asset."

sides, roof and floor, we also met the 16,000-pound weight goal on the West Coast units." Equipped with the strongest steel specifications in the industry, heavy-duty arms and torque tube assembly, this next generation New Way front loader is stomping the industry with brute force.

While New Way continues to introduce new and innovative products to the waste management industry, its growth can be contributed to a dedicated work force, strong dealer support network and global presence. Not only are New Way Trucks represented in all 50 United States, they also have representatives located internationally in countries including Russia, China, Costa Rica, Mexico, Canada and Nigeria.

"Our team continues to expand globally and that is what makes us a force in the industry," mentioned Allen. "New Way is an incredible company to work for. Those outside the company may not see it, but internally we are tight-knit family, and that is very important to us." Allen leads the team each year by hosting an annual Dealer Summit aimed at educating and informing the New Way Dealer Network

on product changes, innovations and company updates.

New Way's Dealer Network has been successful due to the fact that the company produces quality, purpose-built refuse products.

"Without our highly motivated team, we wouldn't be able to do what we do," said New Way President Michael McLaughlin. "Our employees truly are our most important asset. In fact, we continue to produce leaders at New Way by going through extensive leadership training classes. By educating our employees and building internal buy-in, we're able to produce a high-quality product that our customers rely on." It is this dedication to it employees, and strengthening its workforce from within, that has elevated New Way to the position of a leader in the industry.

Those looking to learn more about New Way Trucks are urged to visit its website, www.NewWayTrucks.com; stop by its WasteExpo booth, No. 1543, in Las Vegas; and follow it on Facebook. ■

Information provided by New Way Trucks.



Family-friendly water fun *Wisconsin Dells, Wis.*

Wisconsin Dells, Wis., has long served as a Midwest tourist destination. Its natural scenic sandstone cliffs and rock formations have enticed visitors for more than 150 years.



BUT ONLY IN THE LAST DECADE HAS THE small burg in central Wisconsin, population 2,707, branded itself after its most ubiquitous, man-made feature: “Waterpark Capital of the World.”

Fun seekers can avail themselves of 200-plus waterslides, including the world’s tallest: the 10-story Scorpion’s Tail and Point of No Return. It boasts the largest outdoor and indoor/outdoor combination parks, as well as the state’s largest indoor water park.

Wisconsin Dells partners with Lake Delton, its similarly sized adjoining village to the south, to attract families from among the 50,000 residents within its 20-mile radius. Further, though, the municipality’s burgeoning reputation for seemingly endless family fun draws more than 4 million visitors a year from all across the nation.

“We like to remind visitors that the area has more than 90 attractions” other than water parks, though, said Bianca Johnson, marketing and communications manager for the Wisconsin Dells Visitor and Convention Bureau. “In fact, if you spent eight hours a day visiting different attractions, it would still take 33.75 days to experience all of them.”

Johnson noted the family-friendly theme of the town’s draw.

“The attractions have experience in catering to the family. And when we say family, we mean toddlers, grade schoolers, teens, parents and grandparents.

“In addition, we have a huge variety of accommodations. Options range from charming motels tucked throughout downtown, to mid-sized properties with mid-sized water activities, to water park resorts, to huge vacation villas,” she said. “As you can imagine,

TOP LEFT: Patrons of the average water park, such as Chula Vista Resort at the “Waterpark Capital of the World,” Wisconsin Dells, go through 5,000 towels a day. The town keeps 3,820 inner tubes on hand to enhance the waterslide experience. (Photo provided)

BELOW LEFT: Water parks constitute a large draw to the small town of Wisconsin Dells, Wis. But the city also hosts several popular festivals each year, including the huge Automation car show. (Photo provided)



there are options available for all sorts of vacation budgets.”

Johnson attributed Wisconsin Dells’ success to a trinity of factors.

“The perfect storm comes from the incredible scenery that first began to draw visitors, the unique concentration of risk-taking entrepreneurs that helped create our water park boom and the relative affordability that Wisconsin Dells offers its guests as a small-town Midwestern city.”

Johnson also lavished kudos on the town’s business community.

“We are incredibly lucky to have such a competent and creative class of business owner in the Wisconsin Dells area,” she said. “These owners are the ones investing their time and money into their water parks, attractions, accommodations, restaurants and shops.”

Annual town-wide festivals include a classic car show, autumn harvest and microbrew festival, wine walk and “Taste of the Dells.”

Though the town government’s role in promotion and marketing is “fairly limited,” its contribution is invariably cooperative and readily offered. The municipal administration approves permits, provides police presence, directs traffic, closes streets as needed and gives 90 percent of the area room tax to the visitor and convention bureau.

Not complacent with its success, the bureau commissioned international tourism

development expert Roger Brooks to study the downtown area and craft suggestions for development, particularly to capture the lull times during weekdays and the off season from October through March. The August 2014 report, which can be found at www.dellstourismdevelopment.com, eyes a primary goal “to increase visitor spending in both Wisconsin Dells and Lake Delton by 30 percent over the next five years.” It offered 43 recommendations slated for execution through 2018, including:

- Building a public market and amphitheaters with 200-plus days a year of programmed events
- Widening downtown sidewalks and improving traffic flow
- Developing a public plaza with built-in sound system, movie screen, splash pad and skating rink
- Erecting two parking garages and removing parking from the pedestrian-heavy sections of downtown streets
- Painting the downtown area’s train trestles (No words allowed)
- Installing free public Wi-Fi service
- Reworking sign ordinances and sprinkling the downtown with benches and flowers
- Establishing a trolley system to circulate visitors among downtown attractions
- Renaming the Dells River District as the River Arts District to “sell the reason why people should visit”



ABOVE: Risk-taking business owners such as those who own the local zipline service, if they have had the acumen to tie in to the Wisconsin Dells’ renown as a tourist destination, have profited while fortifying the town’s commercial base. (Photo provided)

ABOVE LEFT: Natural water features that lay in and around Wisconsin Dells augment the man-made water fun to be had in town. (Photo provided)

Johnson offered advice for other municipalities seeking to leverage their assets to craft a world-renowned reputation.

“We would first encourage community leaders to look around and catalog any existing assets,” she said. “Does the area thrive on a particular business industry? Are people already visiting for a particular tourism reason? Are there business owners willing to take risks and invest in their industry or in building attractions and accommodations?”

“A destination can have the flashiest tagline and logo around,” she cautioned, “but if there is nothing tangible to back up the promise of the brand — whether you are attracting talent to live and work in your area or hoping to attract visitors to spend dollars — all the marketing in the world won’t translate to significant and sustainable economic development.” **M**

Andrew Hynes

Elizabethtown, Ky.

Back in the days of Colonel Andrew Hynes, who lived from Feb. 28, 1750, to September of 1800, establishing a town was not always as simple as staking a plot of uncharted wilderness, tacking up a few shanties and growing from there.

It wasn't that simple because it wasn't that safe.

Violent clashes between settlers and the Indian tribes cohabiting the area often resulted in casualties on both sides. So before Hynes founded Elizabethtown, Ky., population 29,948 and named after his wife, he built a fort.

Hynes' fort was one of three, configured in a triangle with sides one mile long. The area between them now constitutes the northwest section of the current town, which serves as the county seat of Hardin County.

The final major skirmish between the settlers and Indians occurred in 1792. Severn's Valley, as the settlement was then known, was attacked by 15 Indians who killed two women and five children. An equal-sized contingent of men was dispatched to track down the attackers. They did so, killing 14 of them.

With that warfare finished and a permanent peace forged between the factions, the 17 families of settlers emerged from the fortified sanctuary and took their places on the open land Kentucky had to offer. Elizabethtown was founded on 30 plotted acres in 1793.



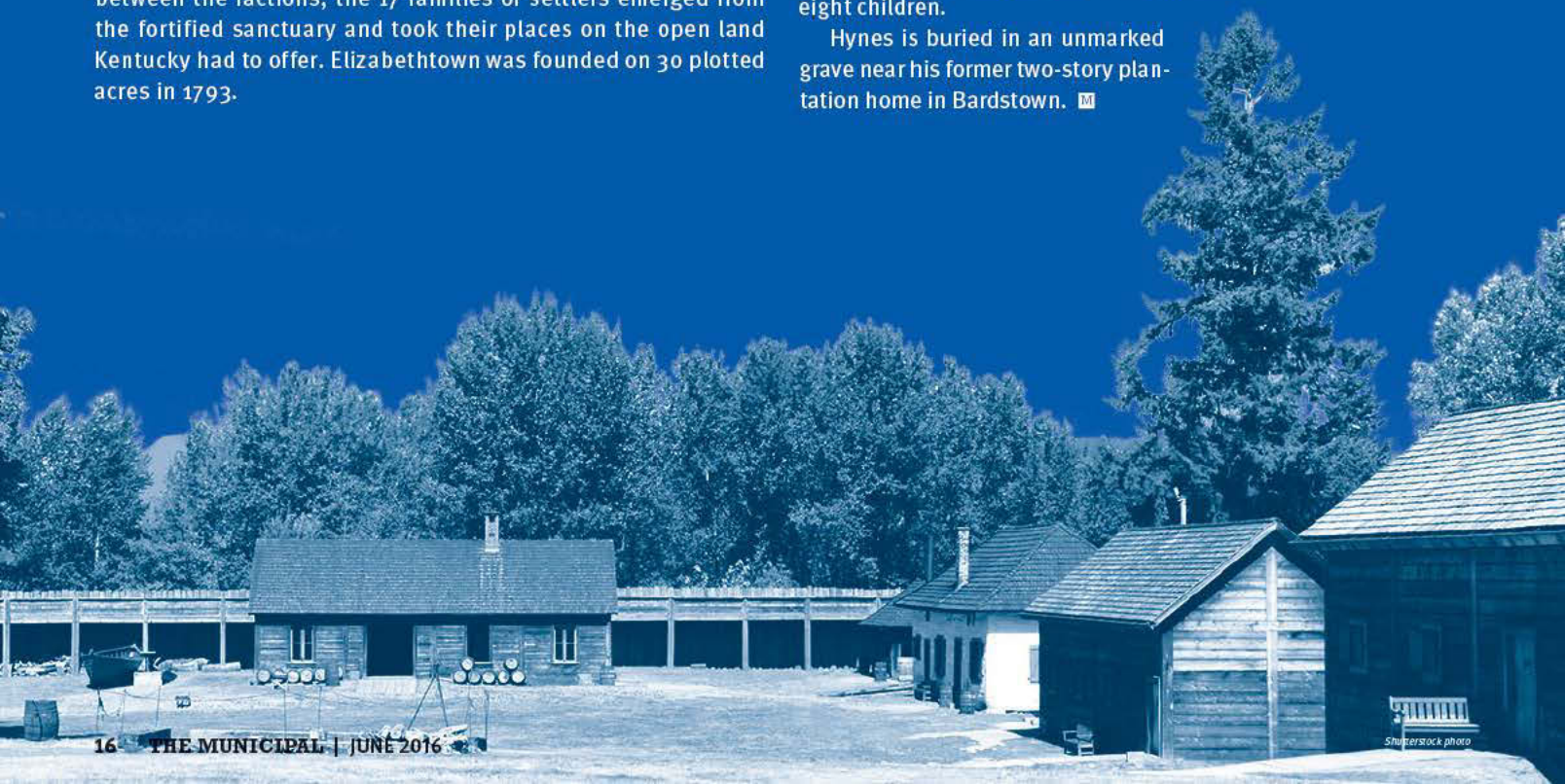
The town has rubbed shoulders with an impressive array of historical notables. George Washington tried unsuccessfully to purchase a nearby 300-acre plot. Squire

Boone, the brother of Daniel Boone, explored the area before it was permanently settled. Abraham Lincoln was born not far from where the town is situated today. And our nation's 15th president, James Buchanan, practiced law in the Hardin County courts.

Hynes compiled a staggering resume of military and civic service and commercial success in his half-century of life. He was an officer during the Revolutionary War and an Indian fighter thereafter. Accomplished at surveying, he was appointed as one of the trustees to lay out the towns of Louisville and Bardstown.

He served as a court judge, chief militia officer and sheriff of Nelson County, Va. He was a two-term member of Virginia's general assembly and served as a delegate to draft Kentucky's constitution. According to the inventory in his will, drafted two months before his death, Hynes owned a large general store and held more than 10,000 acres of land. He and Elizabeth had eight children.

Hynes is buried in an unmarked grave near his former two-story plantation home in Bardstown. **M**





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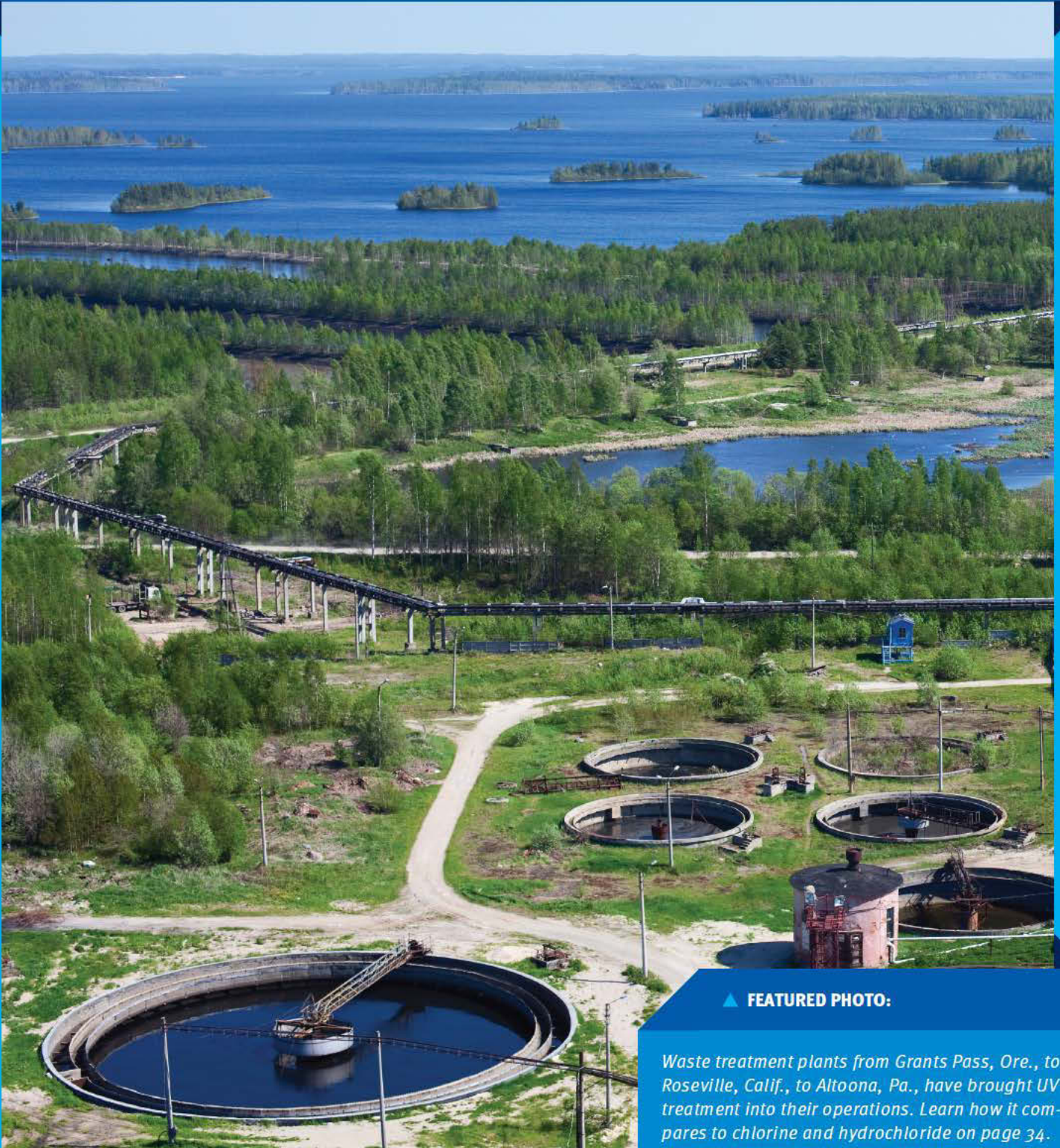
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▲ FEATURED PHOTO:

Waste treatment plants from Grants Pass, Ore., to Roseville, Calif., to Altoona, Pa., have brought UV treatment into their operations. Learn how it compares to chlorine and hydrochloride on page 34.

(Shutterstock Photo)



Average number of “lifts” of residential garbage receptacles completed by a single, semi-automated solid waste collection truck during an eight-hour shift in a densely populated urban area. That number rises to 900 for dwellings that are unusually close together, and if multi-family dwellings are included. Winding, rural roads and steep hills drop the average to 400–500.

Source: community.swana.org/blogs/terry-davenport/2015/11/19/national-averages-for-refuse

7 out of 10

Forbes magazine deemed sanitation collection the seventh most dangerous job in America in 2011, with a fatal injury rate of 25.2 deaths per 100,000 workers.



Source: www.forbes.com/2011/03/08/fishing-construction-logging-business-most-dangerous-jobs_slide_5.html

1994

The year that U.S. cities began exploring options for reducing the amount of pollution entering local waterways, due to an EPA mandate that the level of such pollutants be reduced. The source of said pollution is primarily raw sewage that overflows during storm events.

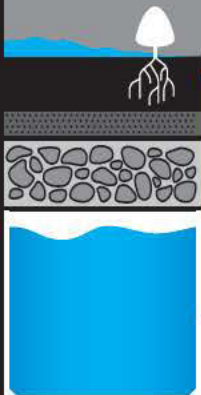
Learn about Fort Wayne’s solution on page 24.



Statistics say 10 times more jobs are created by the recycling industry than by landfills.

To move beyond recycling to the next step in a zero waste plan, see page 20.

1 million



The number of gallons of stormwater that will be able to be stored in a large, underground storage tank planned for the community of Elizabeth. Floodwaters from the nearby Elizabeth River frequently victimize the east New Jersey city.

See page 28 for more information.

42 percent

The amount higher than EPA estimates, of the amount of waste going into landfills.

Source: Bryan Staley via @WasteDiva, on Twitter



Architect’s plan for a Lexington gray-water storage tank shows it nestled gently into the surrounding, recreational-use landscape. (Image provided by Scape)

Read more about the plan on page 30.

Ten years to a zero waste community



By DENISE FEDOROW | The Municipal

Beyond the obvious benefit of reducing waste in landfills, zero waste communities give life to the idea of being able to eliminate the need for hauling waste. It may seem like a pipe dream, but it's one more communities are buying into.

In fact, at the United States Conference of Mayors' annual meeting last June, the organization adopted a resolution in support of municipal zero waste principles and a hierarchy of materials management. The USCM has adopted several resolutions over the past 25 years supporting recycling and composting, but the 2015 document was more encompassing: It started with the manufacturing process and called upon

Congress to incentivize the use of recycled over virgin materials.

What is "zero waste?" According to Eco Cycle Solutions of Boulder, Colo., zero waste is a plan that "redesigns our systems and resource use from product design to disposal to prevent resource depletion, conserve energy, mitigate climate change, reduce water usage, prevent toxins creation and stop ecosystems destruction."

An employee at Boulder County Recycling Center, in Colorado, stands in front of piles of paper ready to be recycled. Statistics say 10 times more jobs are created by the recycling industry than by landfills. (Photo provided)

A zero waste community doesn't happen overnight. It takes time. Implementing a phased-in, 10-year plan can set a community on the road to achieving it.

Eco Cycle Solutions has developed a roadmap for communities to use to stay on the right path and ensure they reach that desired destination of zero waste. Program Manager Kate Bailey spoke about why everyone should enact such a plan now.

'The Plan'

Eco Cycle Solutions has devised a three-phase plan with 21 essential action steps for a zero waste community.

PHASE 1:

(Years 1–5) Includes steps like making the commitment; accessing service for recycling and composting; education; product fees and bans; and incentives for construction and demolition debris recycling.

PHASE 2:

(Years 6–9) Requires recycling and composting for all homes, multifamily units and businesses; adds producer responsibility for hard-to-recycle materials; requires landfill bans.

PHASE 3:

(Years 10+) Involves public policy support and enforcement of source separation requirements; also economic policy changes and full cost accounting.

A major component of the strategy is to form an inside/outside partnership of people from the public sector — mayor, public works manager and city council members — and the private sector — non-profits, environmental groups and passionate individuals.

The EcoCycle Solutions roadmap suggests six facilities as alternatives to landfills and incinerators.

- Materials recovery facilities, for recyclables
- Reuse and repair facilities, for best use before recycling
- Organics recovery facilities, for composting and energy production
- A hard-to-recycle facility, or center for hard-to-recycle materials, for nontraditional recycling
- CDD facility construction, for demolition and deconstruction of building materials
- Materials recovery biological treatment, for whatever's left



At Boulder County Recycling Center's paper sorting line, employees catch items that may hurt the machinery if they were to get through. Recycling centers like this one use a combination of automated systems and manual labor to separate recycled materials before they are sold to manufacturers. (Photo provided)



Single stream recycling has made recycling easier, encouraging more people to take part. (Photo provided)

"Communities are seeing more value for zero waste than the environmental reasons — there are also economic reasons," she said, explaining that working towards a zero waste plan allows cities and towns to control their costs and to create jobs. "The governor of Michigan said recycling doubles jobs, and several states across the Midwest and the south are realizing that recycling creates 10 times more jobs than a landfill."

As for environmental and climate benefits, reducing waste in landfills may be the fastest, most cost-effective way to stop changes to the climate. "These are things that can be implemented now that will help," Bailey added.

While more communities are recycling and making it easier for residents to do so well, the nation as a whole is still only at 34 percent. Interest has increased of late in composting, though, and the Environmental Protection Agency is working on a national goal to reduce food waste.

Bailey called attention to a new movement, "Beyond the Blue Box," that gets people thinking about composting and innovative ways to reuse and repurpose, as a means of job creation. She cited the example of Springback Colorado Mattress Recycling in Denver.

Mattresses are on the hard to recycle list, but Springback cuts the old mattresses apart and repurposes the materials. To perform the labor it hires convicted drug felons ▶



Composting is the next big step forward for many zero waste communities. More than 200 cities and towns collect food scraps from residents for composting, and programs are springing up everywhere to collect food waste from businesses. Some state and local officials now require businesses such as restaurants and hotels to rethink whether their excess food can be donated. (Photo provided)

who have been through rehabilitation and are in need of a job and stability to decrease the chances that they will become repeat offenders. The employees make custom dog beds and other items from part of the old mattresses, and other components can be recycled by mattress manufacturers.

"It's keeping mattresses out of landfills and creating jobs," Bailey said. "But there's so much more we could be doing. There are huge opportunities to create jobs and reduce waste. Just throwing things in a landfill is a very uncreative thing to do."

Habitat for Humanity's ReStores are another good example. Home improvement items and excess building materials are donated to Habitat, which sells them at a discounted price.

"We need to ask, 'how do we get the best value for our stuff?'" Bailey said.

The Weather Channel recently listed 10 cities working towards being zero waste communities. The majority are on the West Coast, but there are good things happening on the East Coast as well.



Vermont has been a zero waste leader, boasting a goal for 2020 of every citizen having access to recycling and composting. The state also enacted a law that's driving food donations, because restaurants, hotels and schools are actively looking at whether the food they are about to dispose of can go to

someone else. Massachusetts enacted a food waste ban for the same entities, requiring they either compost food waste or donate it. In November, Arlington, Va., joined the party by approving exploration of a plan designed to move the city toward a goal of being 90 percent waste free by 2038.

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LEFT: Zero waste events can help a community understand and experience a zero waste future. All materials at such an event can be composted or recycled, and vendors and staff work together to reduce overall waste — such as promoting refillable water bottles. (Photo provided)

RIGHT: Eco Cycle Solutions initiated a Green Stars School program, in which more than 40 schools are recycling and composting more than two-thirds of their waste. The initiative also teaches children to reduce waste, through innovative programs such as a Waste-Free Lunch contest and “Locker Leftovers.” (Photo provided)



and grass clippings — so it’s just expanding them for food waste,” Bailey said.

Admitting there are odor concerns with food waste, she noted that installing an anaerobic digester like those used in wastewater treatment plants helps eliminate the odor. They also produce biogas to create green energy. Educating the public on the details of “sell by” dates on canned goods will support the effort as well.

Trash tax?

Bailey said there’s a perception that trash and recycling collection should be free. But

landfills aren’t free to operate, and most local entities have a landfill fee. That’s a good thing.

“If people don’t see a trash bill, there’s no incentive to reduce trash,” she said. Where people do pay, though, it’s usually the same fee whether for one bag or four. “That’s not how we charge for other utilities.”

Sometimes called pay-as-you-throw or polluter-pays plans, funds from plans with more stringent pay structures can then be used for education or for building new recycling facilities.

Rather than thinking of a single bottom line, Bailey encouraged communities to start thinking of a “triple bottom line” — the benefit to the environment and climate, jobs creation and reusing materials.

“We need to change our accounting system to better reflect the true cost,” she said. “We’re seeing large and small urban and rural communities moving towards zero waste, which is good for jobs as well as the environment. We’re excited about that.” **M**

Composting facilities

Most communities offer some recycling options for residents. Composting facilities are the next easy-to-implement focus of a zero waste plan.

“In the early 1990s, 20 states had composting facilities for yard waste — leaves, brush

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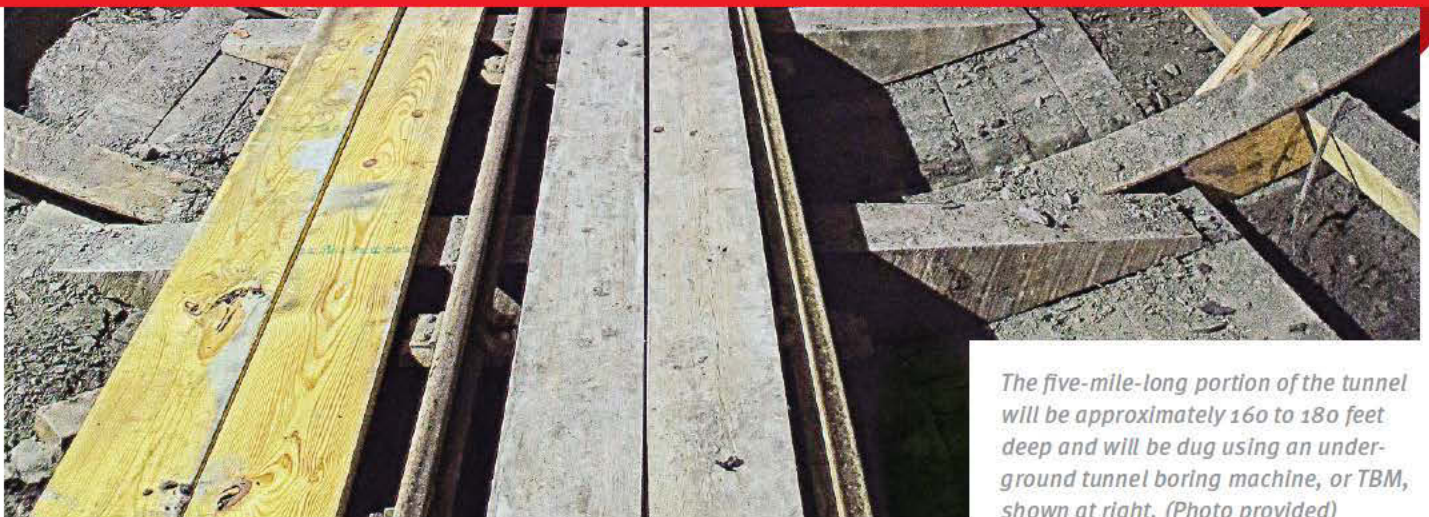
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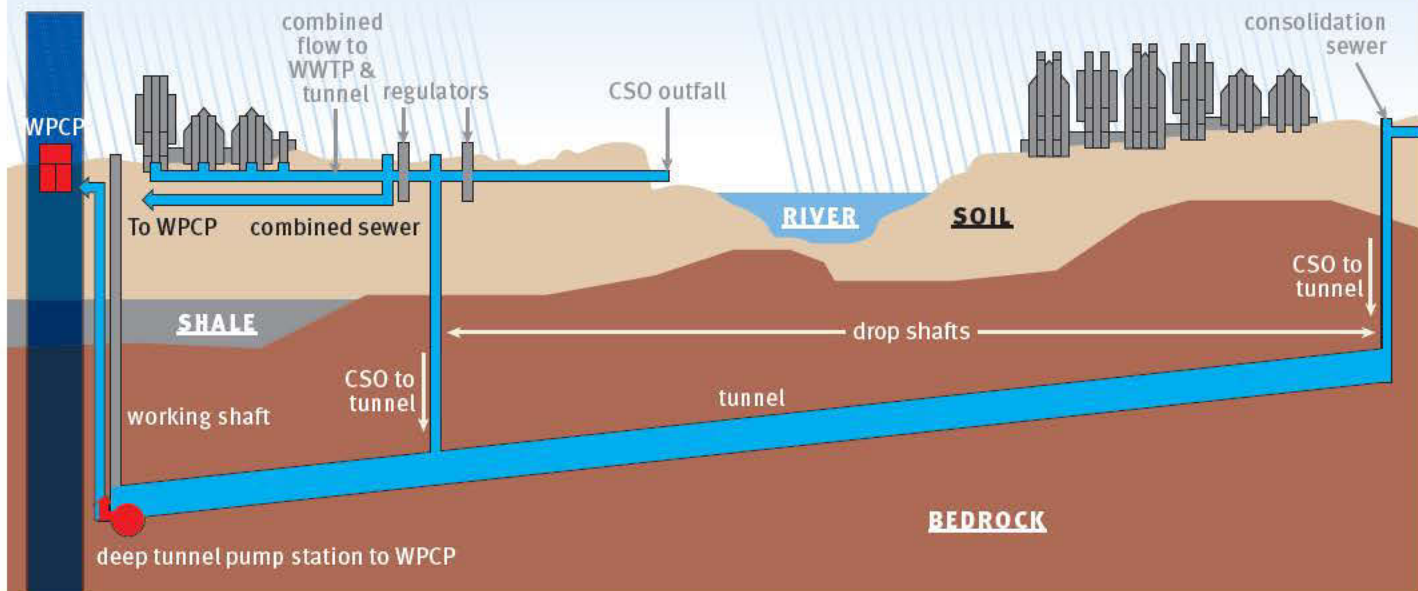
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CSO separation largest public works project in history of Hoosier urban center



The five-mile-long portion of the tunnel will be approximately 160 to 180 feet deep and will be dug using an underground tunnel boring machine, or TBM, shown at right. (Photo provided)



By LAUREN CAGGIANO | The Municipal

A S A RESULT OF THE CREATION OF the CSO Control Policy of 1994, cities across the country were obligated by the Environmental Protection Association to lay out plans to eliminate the occasional flow of raw sewage into natural waterways. Most often, such overflows result from storm events that overwhelm combined sewer overflow systems.



Since then, according to Enesta Jones, spokesperson for the EPA, “most of the CSO permittees have chosen a comprehensive approach to long-term CSO controls, which includes multiple types of controls. Broad categories... include collection system controls, including sewer separation and inflow reduction; green infrastructure to reduce flows into the sewer system; and storage facilities and increasing treatment capability.”

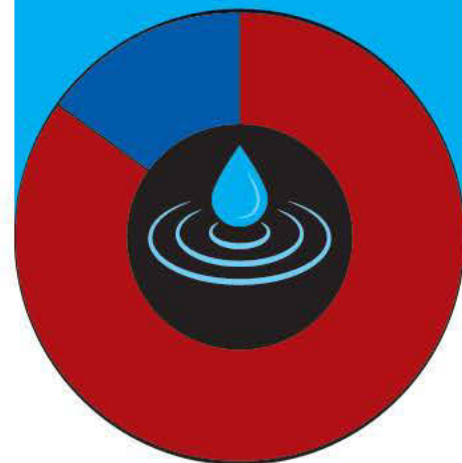
In an attempt to manage sewer overflow, one of those cities is investing in a \$150 million public works project—the largest in its history. The project will bring Fort Wayne, Ind., into compliance with EPA regulations and with the Department of Justice.

Fort Wayne City Utilities is designing a large tunnel and associated network of pipes in the bedrock below the feet of its 258,000 residents. This system, known as Tunnel Works, will collect and transport sewage from the combined sewer system to the treatment plant. Tunnel Works is the capstone project in Fort Wayne’s long-term control plan for reducing the amount of diluted sewage discharging into its three rivers annually. ▶

For Wayne, Ind., city officials are trying to reduce the amount of sewage water overflow into three local rivers by 900 million gallons a year, through construction of the Deep Rock Tunnel project. (Data provided, illustration by Richard Aguirre)

DID YOU KNOW?

85 PERCENT of Allen County homes, including Fort Wayne, use water from the 19 public water systems. The other **15 PERCENT** have wells. Fort Wayne was ranked the sixth most polluted city in Indiana in 2016.





“If there’s too much shared liquid, then it overflows in the rivers. Of course it happens.”

Currently, the city’s sewage system is unable to handle great amounts of stormwater. About a third of its sewers are combined, and as usual with CSOs, when stormwater overwhelms them, the combination causes overflows. That’s why the tunnel is part of a \$240 million project that includes an upgrade to the sewage treatment plant and construction of new storm sewer.

The tunnel system will begin south of Foster Park on the east side of the St. Marys River. It will run parallel to the St. Marys River, cross Swinney Park, go through downtown then run parallel to the Maumee River until

it reaches the existing sewage treatment plant, located on the Maumee River east of North Anthony Boulevard.

The main tunnel will be approximately five miles long and lie 160 to 180 feet down in the bedrock. As part of Tunnel Works, a mile of consolidated sewers will also be constructed to collect combined sewage from the existing system and connect to shafts that will drop it 160 to 180 feet into the tunnel. Approximately two miles of sewer that will be shallower and smaller in diameter will connect to the south end of the tunnel.

Fort Wayne, Ind.’s sewer separation project will address its current standing as the sixth most polluted city in Indiana. (Shutterstock photo)

More than 700 communities nationwide rely on CSO infrastructure, noted Frank Suarez, Fort Wayne City Utilities spokesperson. More than 100 of those municipalities are located in Indiana. The separation solution was viewed as “state of the art” at the time of the Clean Water Act, because experts used to believe the answer to pollution was dilution, Suarez said.

The reliance on CSOs was no longer viable for Fort Wayne anyway. It comes down to environmental and health concerns, Suarez said. “If there’s too much shared liquid, then it overflows in the rivers. Of course it happens.”

In fact, it happens about 70 times a year; a situation that causes significant pollution and prompted the EPA to give the city an “F” in water quality. Fort Wayne was ranked the sixth most polluted city in Indiana last year, based on data collected by the federal agency.

That’s bad news for residents who depend on the water for drinking and bathing. About 85 percent of Allen County households, including Fort Wayne, use water supplied by one of the 19 public water systems. The other 15 percent have their own wells.

The EPA mandated that the city come into compliance by the year 2025. By that year, the five-mile-long Deep Rock Tunnel along the Maumee will be capable of taking 90 percent of the unclean overflow to a

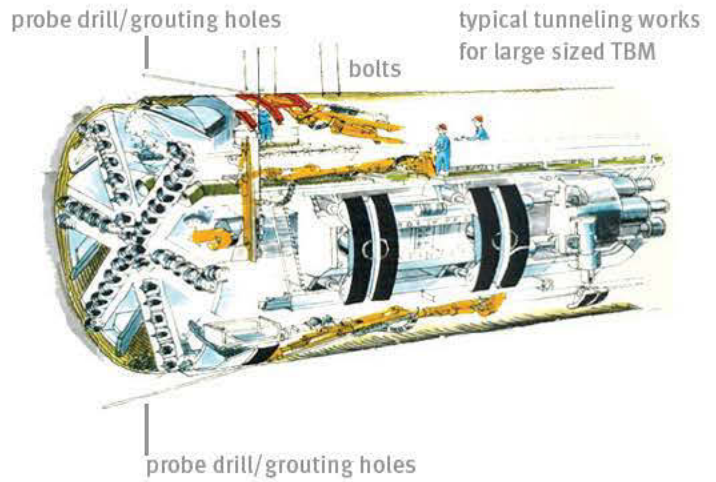
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There are currently more than 700 CSOs in use in the United States. When it rains, such systems are often unable to contain the capacity, resulting in overflows into local waterways. (Image provided)



The tunnel system will be dug using a TBM and will begin south of Foster Park on the east side of the St. Marys River. It will run parallel to the St. Marys, cross Swinney Park, go through downtown and then run parallel to the Maumee River until it reaches the existing sewage treatment plant on the Maumee, east of North Anthony Boulevard. (Photo provided)

water pollution control plant. According to Suarez, the project will nearly double the size of the plant.

The improved infrastructure will mean residents are better off in more than one way. Case in point: "This project will protect homes from flooding by an estimated 96 percent," Suarez said. "Plus we're keeping the 5 million gallons of overflow from going into the rivers."

The health and protection of Fort Wayne's three rivers is a hot-button issue, adding to the excitement surrounding the project, he noted. The Riverfront Fort Wayne project is a prime example. The initiative "envision[s] a revitalized downtown riverfront area that is a regional destination

"This project will protect homes from flooding by an estimated 96 percent ... Plus we're keeping the 5 million gallons of overflow from going into the rivers."

offering opportunities to experience nature, recreation, shopping, dining and entertainment in a whole new way."

But such projects come at a cost, literally and figuratively. The CSO separation will be funded through rate increases through 2019—a move that likely won't be popular with taxpayers.

"From a national perspective, it can be a burden on the community when (projects like these) are unfunded; but it's important for the future. It's the right thing to do," Suarez said.

The Deep Rock Tunnel project is in the design phase currently. Construction is expected to begin in 2017.

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Municipal storage tank solutions — Holding back floodwaters

By ANNE MEYER-BYLER | The Municipal

Because of its coastal proximity and hydrology, much of Elizabeth, N.J., is prone to flooding.

The city is situated next to Newark Bay and, to the south of that, Arthur Kill. From the strait that comprises Arthur Kill, the Elizabeth River branches off and runs through the town. Storms have a habit of pushing water from the bay down the kill, into coastal areas of the town and into the Elizabeth. The lowest drainage area, and the one most affected during floods, has traditionally been the basin draining to Trumble and Sixth Streets.

During the severe wind event of Hurricane Sandy, for example, a massive storm surge hit the coastline and the Elizabeth, causing extensive flooding as well as damage to waterfront facilities; but rain-induced flooding, which is a more regular occurrence, is of even greater concern.

Over the years, the city has spent much time dealing with the situation. Several responses to this flooding have been

considered; recently, those conversations have included replacing current sewage lines with larger structures, and building a pump station near the bay. Both options turned out to be exceedingly expensive.

The city also examined the possibility of building a million-gallon underground storage tank at one of several other locations. Dan Loomis, city engineer, said putting such a tank at the current location got to the heart of the problem; so development of a current project that includes it began in late 2013.

LEFT: John Papetti, director of public works in Elizabeth, said the construction of a million-gallon, underground water storage tank will relieve several neighborhoods of flooding. Additionally, the city block above the tank will become a rain garden, inserting green space in the urban landscape. (Image provided)

TOP RIGHT: The new water tank will keep 1 million gallons of rain water from taking pollutants into Newark Bay. Instead, it will direct the water to the city's treatment facility and send it out clean into Arthur Kill. (Photo: usgs.gov)

RIGHT: Scenes like this one should become extremely rare in light of the Elizabeth's pending capacity to store and then treat any flood water. (Shutterstock photo)

"Similar projects have been done elsewhere in other cities like New York City, and some places the tanks may be over ground," he noted. For Elizabeth, "the current project is most cost effective and appropriate." Still in the development stages, the city block needed to begin construction on the project was purchased by the city in November.

The plan calls for one drainage station, draining into the underground storage tank; but it will have an impact on other flooding areas in town as well, since the lowest area is at this location.

John Papetti, director of public works, said Elizabeth expects to get a lot out of the process by storing up to a million gallons of water under the ground. "The tank holds the water back until after the storm passes," he explained.

Sewer lines are mechanically monitored to measure when the water levels are low enough for the tank water to be released into the sewer system; then all the water is treated



before delivery into Arthur Kill. Besides alleviating flooding, this solution protects the environment by treating 1 million gallons of water that would otherwise flow into the local watershed untreated.

Another major aspect of the project, Loomis noted, is the rain garden that will be built above-ground, over the tank. The triangularly-shaped area, situated between city streets, measures 7,500 square feet. The tank's shape will follow the same footprint.

The rain garden will deal with a lot of the initial runoff from a storm. Engineered soils and greens will allow the water to percolate through efficiently so the surface doesn't get clogged up. Paths and information about the environmental impact of the tank and green

space will add to the surface rain garden. Inlets in the streets connected to the tank will be higher than the gutter, so the flow will go into the garden. When the gutter is full, water will spill over into the underground tank and be stored there until the sewer is able to take the flow, with the water passing on to the treatment plant.

Part of the cost for the tank will be covered through low-interest loans from New Jersey's Department of Environmental Protection Environmental Infrastructure Trust Fund.

"The funding is all on Elizabeth's dime but is essential and made more affordable by the low-interest loan," said Papetti. The city bonded the loan and got a much lower interest rate from the Department of Environmental Protection. However, the project would have had to go on even without it.

Several city departments were involved in the project, including public works, which includes the engineering department; finance; and the law department, which helped in purchasing the properties. ■

Mayor J. Christian Bollwage was the driving force behind Infrastructure Improvements that will mean a significant reduction in flooding for the town of Elizabeth, N.J. (Photo provided)





Municipal storage tank solutions — **Gray water gains aesthetics**

By **BARB SIEMINSKI** | The Municipal

Few things are more desirable to quality of life than clear, sparkling water – to drink, bathe and swim in, to wash dishes and launder clothes with.

But like many other facets of life today, recycled water, also called “gray water,” is firmly entrenched. Household gray water can be gently reused in tasks like irrigating lawns, trees, watering household flowers and plants, although there are caveats.

Then there is gray water on a much larger scale.

“In the field of wastewater engineering, the term ‘gray water’ refers to water discharged from showers or sinks but not toilets,” said Vernon Azevedo, P.E., Remedial Measures Program manager in Lexington, Ky.

“If it’s discharged from a toilet it becomes black water. Both are sewage per federal regulations, and neither can be discharged

This architect’s image of the gray water tank — to be built along a scenic Lexington, Ky., trail — incorporates landscaping and a camouflage construction that will diminish its overwhelming size and the generally unappealing facade of any water storage tank. (Image provided by Scape)

without treatment. But gray water can be recycled with less treatment. This is further complicated when rainwater or groundwater is mixed with sewage rainwater and groundwater becomes sewage.”

The introduction of groundwater and rainwater to sewage systems is a nationwide problem, since it regularly results in overflows



Tank construction to date includes the engineered fill on which the tank foundation will sit. (Photo provided)



Vernon Azevedo, P.E., Remedial Measures Program manager in Lexington, said the rods sticking up through the engineered fill are rock anchors that are embedded into bedrock 22–25 feet deep. They will extend into the tank foundation to protect it from hydrostatic forces that could damage it. (Photo provided)

of sewage to the nation's waterways. Eliminating the introduction and mixing of rainwater and groundwater with sewage is a very expensive and difficult problem to eliminate.

One solution is to capture the additional flow and store it until the level of flow in the sewage system is reduced. Then the captured flow can be introduced back into the system. However, no one wants to see large gray water tanks marring the landscape.

Lexington has been a forerunner in incorporating gray water tanks into the immediate scenery. One such project is the picturesque 12-mile Legacy Trail that will surround the city's latest tank construction project.

"This is the approach that Lexington-Fayette Urban County Government is taking—to capture and hold for future treatment the extraneous flow from groundwater and rainwater..." said Azevedo.

A contractor is building the foundation of the tank. Construction will be ongoing for the next six to seven months.

According to Michelle Kosieniak, registered landscape architect and superintendent of planning and design, LFUCG Division of Parks and Recreation, the division is vested in the project because the new plaza and restrooms will serve park visitors. Parks and recreation will have some maintenance responsibilities for the plaza and restrooms once they are completed.

Other factions involved in the committee include community foundation representatives, art and trail advocates, bike and

pedestrian safety experts, University of Kentucky representatives and local business owners.

"We worked for more than a year to come up with the plan recently approved by council," said Akers, concluding that the tank will be located on a trail in a public park and is surrounded by the interstate and a research park owned by the University of Kentucky.

"There have been two landscape architecture firms involved and many stakeholders, including UK, the 2nd District Urban County Council representative and others," said Kosieniak, adding that the project was funded through the Remedial Measures program in the Division of Water Quality.

There were initial concerns about the tank impacting the trail and park visually, she said. Residents understood the tank was a necessary part of required sewer improvements, though.

"It was quickly accepted that the tank is part of a greater story that needs to be understood. I believe the new plaza, restrooms and other amenities compensate for the visual changes caused by the tank being realigned for the tank.

"Some of the elements originally suggested by the tank facade and plaza were wonderfully creative, but upon closer examination, it became clear they were neither feasible nor sustainable," she added. "Some people were unhappy to see those ideas eliminated. But we are confident that the final design represents the best core ideas suggested by the group and that they are all practical and sustainable." ▶

Collaboration leads to integration

Gina Wirth, design principal, and Anne Webber, project designer, both of Scape Landscape Architecture of New York, and local landscape architect Ramona Fry at Element Design, were instrumental in the concept design of the Legacy Trail Wet Weather Storage Tank project.

"Our team worked with a broad stakeholder group to determine how to integrate the new trail alignment and the location of the new wet weather storage tank, designing and discussing multiple options and scenarios for the landscape," said Wirth.

"The stakeholders realized that the tank helps improve Lexington's waste water infrastructure and, by extension, the quality of its ecosystems and cultural bluegrass landscape—the same landscape one experiences along the length of the Legacy Trail. The selected design embraces the ecology of the bluegrass landscape through tree planting and vegetation, reveals the story of water quality and water treatment and expands the range of activities available along the trail."

The biggest challenge?

"The project offers an opportunity to build 21st century infrastructure that simultaneously improves water quality and enhances recreational resources," said Wirth.

But building multipurpose infrastructure is a challenge. It involves a broader set of stakeholders, project goals and design aspirations than typical engineering projects. However, the process drives better results that positively impact more people. The tank is better integrated into its surroundings, Lexington's water infrastructure is better understood by the public and more activities will exist along the Legacy Trail as a result of the construction.

"It's commendable that the city has taken this approach and is designing infrastructural systems in a way that not only solves immediate problems, but values its community and the importance of the local bluegrass landscape over the longer term," offered Wirth.



The project was a \$590 million endeavor that began more than 10 years ago to remedy Lexington's sewer and storm water issues. It carried the incentive of enhancing rather than taking away from the Legacy Trail.

Water Quality began planning the tank in 2008, when the settlement of the lawsuit against LFUCG for violations of the Clean Water Act was finalized, according to Monica Conrad, director of parks and recreation.

"Design of the tank began in May 2014; the stakeholder process for the architectural improvements began in August 2014," said Conrad,

A comparison of the naked tank to an architect's alternate plan explains how it will be nestled gently into the surrounding, recreational-use landscape. (Image provided by Scape)

adding that the new tank is part of the sanitary sewer improvements required by the EPA Consent Decree.

"We are thankful to the mayor, the administration and Water Quality for including in the project some much-needed trail amenities in the new plaza, such as a restroom, drinking

fountain and a shady resting place."

Completion is scheduled for December, although architectural improvements will not be completed until the summer of 2017, noted Conrad. **M**

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Let there be light

UV disinfection moves from drinking water to wastewater application

By JULIE YOUNG | The Municipal

THE GOAL OF A WASTEWATER TREATMENT facility is to remove visible and invisible material from sewage so that it can be returned to the environment and used again. The elements removed include human waste, food scraps, chemicals, minerals and other hazards, which, if allowed to remain in the water, can break down, use up oxygen and adversely affect residents and wildlife. It's a process that involves two to three steps, depending on state regulations, and includes filtration and clarification to remove solids, sediment and other pollutants.

To remove, deactivate and eliminate the presence of pathogenic microorganisms and discourage the spread of disease into the surrounding environment, wastewater must then be disinfected. For decades this process was primarily accomplished through the use of chemical chlorine treatments, both liquid and gas. Today municipalities are turning to ultraviolet light as an effective, safe, cost-conscious and eco-friendly way to get the job done.

Understanding UV disinfection

UV disinfection is a physical process in which harmful bacteria and other microorganisms are neutralized as they pass by submerged mercury arc lamps that are contained in enclosed chambers. According to the Environmental Protection Agency, the system transfers electromagnetic energy from the lamps to an organism's genetic material, where it penetrates the cell wall and renders it incapable of reproduction. The system's effectiveness depends on the characteristics of the water, the amount of UV radiation applied, how long an organism is exposed to the light and the configuration of the reactor.

"Science and water chemistry is all about disease response, how many pathogens are in the water and what is the target treatment," said Andy Salvesson PE, water reuse chief technologist for Carrollo Engineers of Walnut Creek, Calif. "We are not always targeting zero, but the level that will protect public health as well as the surrounding environment."

A better option?

Salvesson is a nationally recognized expert in water reuse and disinfection, with more than two decades of experience serving both the public and private sector in the research and design of water and wastewater treatment systems. He not only provides guidance and expertise on state-of-the-art technologies, but remains current on the latest information regarding reuse, planning, design and research in the industry as well.

He said although it may seem like a relatively new trend, UV disinfection is not new at all. It emerged in the early 1900s as a method of creating clean drinking water; however, reliability and cost concerns kept it on the back burner for decades. It wasn't used as an application for wastewater until the latter part of the 20th century when the

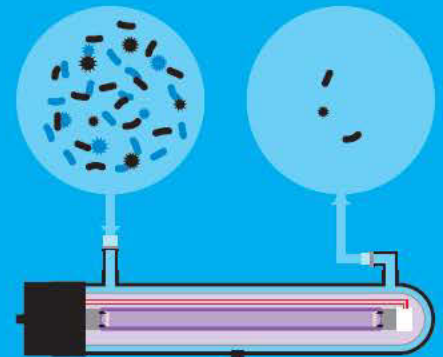
EPA rewrote the 1948 Federal Water Pollution Act, reintroduced it in 1977 as the Clean Water Act and began funding municipal projects





The new UV disinfection system for Grants Pass Water Restoration Plant in Oregon uses low-pressure, high-output UV units to enhance energy efficiency and reduce long-term operations costs. (Photo provided)

Advantages & disadvantages of UV disinfection systems for wastewater



▲ ADVANTAGES:

- Effective at inactivating most viruses, spores and cysts
- Eliminates the need to generate, handle, transport and store toxic, hazardous and/or corrosive chemicals
- No residual effect that can be harmful to humans or aquatic life
- Is user-friendly
- Has a shorter contact time compared to other applications (20–30 seconds with low-pressure lamps)
- Requires less space than other methods

▼ DISADVANTAGES:

- Low dosage may not effectively inactivate some viruses, spores and cysts
- Organisms can sometimes repair and reverse the effects of UV through a “photorepair” mechanism
- Requires a preventive maintenance program to control the fouling of tubes
- Turbidity and total suspended solids in wastewater can render UV disinfection ineffective
- Is not as cost-effective as chlorinated gas

designed to protect the integrity of water in communities nationwide.

“They knew they needed to help communities take care of the water supply in the ‘70s, but the ability to treat huge amounts of water takes a lot of development and that did not occur until the ‘80s,” he said. “By the ‘90s utilities started converting to UV, but it is an expensive process. It takes time to raise enough money to make that change. Unlike chlorine, which is an annual cost and budget line item, a UV system is a major, large-scale, upfront investment a community recovers over 20 years.”

Now that costs for UV disinfection systems have become more competitive, communities are seeing it as an option that’s right for

them. It’s a multimillion dollar investment with a lot of long-term advantages, is comparable to the cost of hydrochloride — or liquid chlorine — treatment and is less hazardous than chlorine gas.

Where it works

In 1991, Altoona Water Authority in Pennsylvania spent approximately \$8,000 on a chlorine gas treatment for wastewater. The chemical was stored on site in 2,000-pound containers that not only threatened aquatic life, after disinfection, but also exposed employees to toxic vapors during connection — forcing the use of protective breathing equipment. ▶

Information provided by the U.S. Environmental Protection Agency. Shutterstock Illustration



In California, the city of Roseville's Dry Creek Wastewater Treatment Plant has one of the largest LPHO systems ever designed to produce recycled water. (Photo provided)

“Chlorine gas is the cheapest way to disinfect wastewater bar none, but it has a safety hazard.”

“There are risks with chlorine disinfection that have to be mitigated,” Salveson said. “Chlorine gas is the cheapest way to disinfect wastewater bar none, but it has a safety hazard. When it is stored in containers that hazard is mitigated, but if there is a leak, it can be deadly. With hydrochloride, there is a contact risk. It’s a liquid, so it costs more to transport and store. But it is comparable to the cost of UV.”


Hydrochloride also has to be removed after application, which makes UV disinfection an attractive alternative.

In December of 1991, Altoona Water Authority made the switch. It purchased the All Aquaray closed chamber horizontal system by Ultraviolet Purification Systems Inc., which treats 20 million gallons of water each day and includes two Type 304 stainless steel reactors that operate under pressure up to 30 psi.

By converting to UV, the city of Altoona found an environmentally responsible, easy and cost-effective method of disinfecting the area’s wastewater that works for them.

When considering UV disinfection for wastewater, Salveson said officials should

look into a system’s performance, safety and use.

“UV has some distinct advantages over other applications. It can disinfect more effectively; it’s not toxic; it’s safer for employees and wildlife; and you don’t have to remove one chemical with another before sending it back into the system. It costs a lot and requires more in terms of operations and maintenance, but it’s solvable. As long as you keep up on the maintenance, your system will keep humming along.” 

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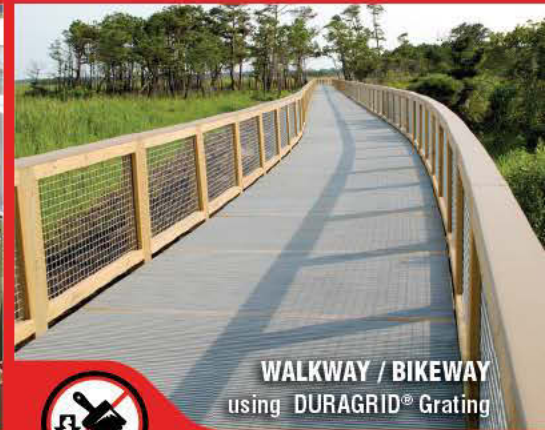
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Passionate about parks

By ROD KING | The Municipal

OCT. 2 IS A DATE MIKE CLENDENEN can't forget. It's his wedding anniversary, as well as the date on which, 26 years later, he took the job of Adams Township Park and Recreation superintendent in New Haven, Ind.

The former clothing and car salesman said he has a great passion for the 17 parks under his jurisdiction. He looks forward to going to work.

"It's been so enjoyable that I don't really consider it work. In fact, I jokingly say I haven't 'worked' a day since taking the job, when the former superintendent resigned and took a similar job in Yakama, Wash., in 2008."

Those parks cover 340 acres and include two nature areas, the park and recreation office/community room on Hartzell Street and the new community center — formerly the Marine Corps League Building — on U.S. 930 behind McDonald's.

Following graduation from New Haven High School in 1973, he worked at Bennett's Clothing in New Haven for eight years before the company closed its doors. He then joined the sales staff at Crumback Chevrolet in New Haven for 29 years.

"I have them to thank for encouraging me to get involved in community activities. I volunteered with youth baseball and then got on the park and recreation board for 10 years.

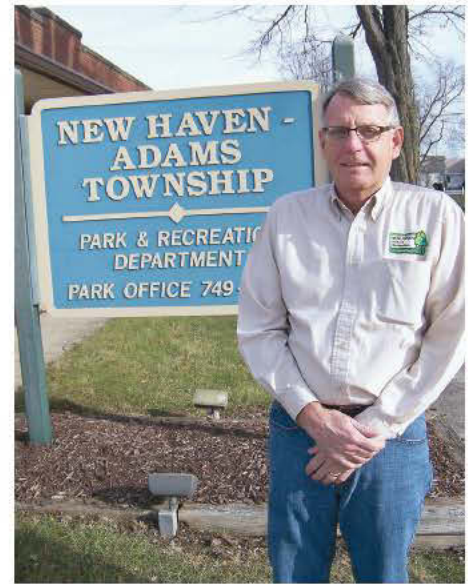
When the opportunity came up, I interviewed and got the position but not without some personal reservations.

"I was passionate enough about the parks," he continued, "but concerned about addressing the public in meetings and being able to communicate with the staff and city administration. (But) my car salesman experience gave me the confidence to take on the new responsibilities, and I've been loving it ever since."

Prior to Clendenen assuming the position, the biggest project the department had taken on was the River Greenway, which cost \$1.5 million. Shortly after taking over he was embroiled in a project to renovate the pool at Jury Park, which had avid supporters and opponents alike and resulted in some very heated and emotional confrontations. In the end, the project was approved by community vote and has turned out to be very successful.

The park and recreation department is supported by a tax base of around \$830,000. The first year the pool opened, 2009, it generated income of \$75,000. Last year it brought in \$273,000, which was up 20 percent over the previous year.

Then Clendenen was confronted with transforming the old 16,500-square-foot Marine Corps League Building into a community center, staffing it and coming up with programs and activities to serve a wide



Mike Clendenen is superintendent of the Adams Township Park and Recreation Department, New Haven, Ind. He took over the position 10 years ago, after serving on the park board for a decade. Seventeen parks, covering 340 acres, fall under his domain. (Photo by Rod King)

spectrum of the citizenry. Renovation on the \$2 million project is done. It was opened to the public in May.

The building was a real bargain (however), and should serve New Haven well for a long time."

Clendenen and his staff have made customer service and problem solving a daily way of doing business.

"Communicating with New Haven residents is important because they're not only our customers... they're our employer," he emphasized. **M**



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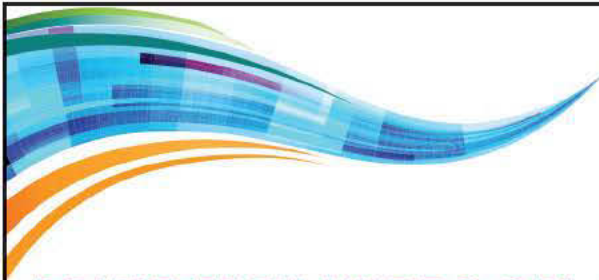
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Something to ‘baaa’ about



By SARAH WRIGHT | The Municipal

Creative problem solving often goes hand-in-hand with municipal decision-making: and it doesn’t get much more creative than outsourcing your mowing to quadrupeds.

Across the U.S. — and the world, even — cities, counties and other entities are giving goats and sheep the chance to veg out in landfills, parks, schoolyards, cemeteries, airports and other pieces of public property. They are being called in for a variety of reasons: to target out-of-control invasive plants, mitigate wildfire risks, go places that challenge mowing equipment, cut costs, avoid herbicide use and reduce carbon footprints.

Most cities bring on board “goatscaping” companies, which might also have sheep among the crew, to clear areas of overgrown grass and weedy patches. These companies often come fully insured, protecting municipalities from certain liabilities. Additionally, most of them keep a caretaker or caretakers on site to make sure the critters have their needs attended to and that they don’t get into too much trouble — freeing up city staff from the responsibility.

Knoxville, Tenn., along with the Tennessee Clean Water Network, has been using

Whistlepig Farms to restore the Williams Creek Urban Forest and other nearby properties by eliminating kudzu. An invasive plant known as “the vine that ate the South,” kudzu is a popular target for goatscaping. Spencer, N.C., also turned to goats to weed it out. Both Knoxville and Spencer have repeatedly employed goat mowing crews, drawn by a desire to reduce herbicide use.

But grazing is not for every city, as Salem, Ore., discovered. Its crew of 75 goats, which had been brought in to eat invasive Armenian blackberry and English ivy, ended up getting fired from the job earlier this year. While the animals were “universally welcomed by park users as a pleasant pastoral addition to the scenery,” they devoured native plants along with the invasive species, and damaged trees. Additionally, they emitted a special aroma.

Still, grazing can produce many benefits. That was the case for Steuben County, N.Y., when it took a unique approach to securing a four-legged crew.

Sheep graze the inactive portion of the Bath Landfill from May to October. Their grazing has cut the public works department’s mowing schedule down from four times a year down to a single time, in August. (Photo provided)

Why Not On Ours?

According to Vincenzo Spagnoletti, commissioner of the department of public works, Steuben County’s venture into sheep mowing of the inactive portion of its old Bath Landfill came about due to proximity. “Our landfill is next to a sheep grazing farm. We’d drive by it and see them grazing and then see mowers on ours,” he said. This led them to ask: “Why can’t we see sheep on ours?”





In addition to cutting back on costs, emissions and time spent mowing, municipalities, counties and other agencies are drawn to the pastoral image of sheep and goats grazing. Pictured are Steuben County, N.Y.'s grazing crew at the old Bath Landfill. (Photo provided)

“In the spring, the lambs are out there. People really like that.”

The idea was pitched to the county attorney and risk manager. After establishing a grazing plan and obtaining county legislative approval, representatives of the department approached the New York State Department of Environmental Conservation. In 2008 they received verbal authorization to proceed with the project from the NYSDEC Division of Remediation.

The next step was to submit the required formal request for review and comment, and address NYSDEC questions and comments. Ultimately, NYSDEC issued final approval.

“It’s still an active landfill; we’re still using a part of it,” Assistant Commissioner with Landfills Steve Orcutt said. “This section (where the grazing is happening) is old and capped.” In fact, about 3 feet of earth separates the sheep from the garbage below.

However, since the other portion of the landfill is still active, Steuben County worked with the U.S. Environmental Protection Agency and the Steuben County Soil and Water Conservation District to complete water studies and determine carrying capacities. During this process, buffers were created between the grazing section and the active portions of the landfill; plus, the sheep had to stay 35 feet away from a retention pond on the property. “The working part of the landfill is about 1,000 feet away,” Spagnoletti said.

To staff the grazing operation, the county sent out requests for proposals from farmers. However, farmers didn’t eagerly respond to the formal government document. Spagnoletti noted many of them are more handshake people.

After waiving the procurement procedures the county secured a farmer, and since 2013, every May through October, sheep and a smattering of goats roam about 23.5 acres of inactive landfill — eating to their hearts’ content.

The animals are contained and protected by a fence, the purchase of which was made possible by a \$11,000 Grazing Initiative Grant by the Upper Susquehanna Coalition. A water tub was also provided for the livestock. ▶



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Pictured on the left is old Bath Landfill's slope prior to grazing; the below photo was taken during grazing. Mowing is then done once a year to clean up. (Photo provided)



Concerns about predators like dogs and coyotes were brought up during the process. One recommendation was to put llamas and alpacas among the sheep. Another suggestion was to get "good, ornery" billy goats. However, no issues have developed. "It might have something to do with the fact that just over the hill there's (a man) whose hobby is hunting coyotes," Spagnoletti said.

In the event something does go wrong, the county is held harmless because the farmer has insurance on the flock.

"We're in our fourth season now," Orcutt said, noting the county has seen many benefits from the grazing — even though the first year made them wonder a bit.

Spagnoletti said he would drive by and the sheep would be sleeping under the tree, not

eating. This, of course, wouldn't do. But then they started to pull their weight, particularly as the temperatures cooled in the evening hours.

"The first year they didn't eat as much, but then they got comfortable with their surroundings."

Currently the public works department only has to mow once a year, compared to the four times a year it would have to mow without the sheep and goats. Spagnoletti and

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One of the lessons learned by the Steuben County Department of Public Works was that the animals will give birth on site. (Photo provided)

Orcutt estimated the savings at \$4,000 annually. Beyond the cost factor, it has also reduced mowing fumes and diesel fuel use.

The flock has also lessened the strain on the department, which since 1992 has shrunk from 33 to 23 workers due to retirements. The workers who normally would have been tied up mowing were now free to do other things, like pick up litter or sort out recycling.

"We mow one time a year to tidy up," Orcutt said.

For the most part, the community seems to enjoy the four-legged mowing crew.

"We did have one complaint at the beginning; they complained about odor," Spagnoletti said. But as the program continued, the smell issue disappeared.

"On the weekends, people will go up and look at them," he noted. "In the spring, the lambs are out there. People really like that. We're also doing our part to cut back (on costs and emissions). I think it's saving some time and money. The government is into downsizing, downsizing costs and cutting down on time."

He shared one piece of experience for other governmental agencies thinking of approaching local farmers.

"The only thing I'd say is that we did not get a big response from farmers. We are a rural community no bigger than Rhode Island. It was not like they were banging on our door—they wanted to stay clear." However, Orcutt pointed out the community's rural nature probably had some impact on that lack of response. "All (the farmers) had their own pastures." **M**

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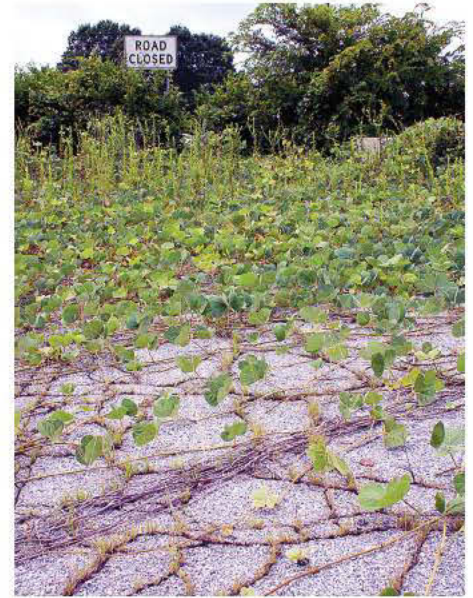
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Taking a bite out of kudzu

By SARAH WRIGHT | The Municipal

KUDZU HAS LONG BEEN A BANE IN the South. Introduced in the late 1870s/early 1880s, kudzu was first utilized as an ornamental plant for shading porches before later being recommended by the Soil Erosion Service for control of erosion on slopes; in fact, 85 million seedlings were distributed for that purpose.

Since that introduction, Science Daily noted in a 2009 article “kudzu spreads at the

rate of 150,000 acres annually, easily outpacing the use of herbicide spraying and mowing.” It added the invasive plant routinely costs \$6 million annually in controls. At that rate, it’s little wonder kudzu is called “the vine that ate the South.”

Municipalities have considered their options on how to address the vine that, given the right conditions, can grow a foot per day. One possible solution has been the use of goats, which favor broad leaf plants like kudzu.

Known as “the vine that ate the South,” kudzu can grow a foot a day under the right conditions. Due to its fast growth it regularly covers and outcompetes native vegetation, even trees. Goats and spray are the two most effective ways of controlling it. (Photo provided by Traci McDonell/city of Knoxville)

Public Service Director Chad Weth, with the city of Knoxville, Tenn., stated the city’s goat program started with Keep Knoxville Beautiful, an organization he is also involved in, around 2010.

“Keep Knoxville Beautiful got a grant for vegetation abatement,” he said, noting it was a case of a community organization stepping in to help the city try greener alternatives.

However, before they could launch the goat pilot program, they had to adjust city ordinances. “We helped to get ordinances changed. The way they were you couldn’t have livestock in city limits,” he said. The changes allow for livestock—approved by the city—only on city-owned and maintained lots. ▶



Goats can handle terrain that traditional mowers can’t; additionally, they target kudzu’s root ball, making them very efficient for controlling the vine and other invasive plants. (Photo provided by Traci McDonell/city of Knoxville)



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"We lease the goats from a local farmer," Weth added. "Last year's budget we actually got \$20,000 just for invasive vegetation abatement. Out of the \$20,000, some of that will probably go to spray and some to goats."

Because of the pilot program's success, the goats have regularly returned to Knoxville each summer and will be taking up residency at Fort Dickerson Park again this year. The site harbors an old Civil War fort and hilly terrain; the park is also being smothered by kudzu.

"If we don't bring them back (each year), we lose ground," Weth said. "The more the goats eat, the more the root ball shrinks."

The goats are particularly suited for the environment, able to reach places traditional mowers can't. And according to Weth, "They are good employees, don't ask for much, no workers' comp — they just eat."

This year the goats will be munching on about 6 acres of the approximately 100-acre

park. They will be secured behind a mesh electric fence while a bright orange safety fence inches in front prevents intrigued passersby from getting a shock. The fences also deter predators, as does the Great Pyrenees brought to guard the herd off and on.

"We've had no issues with the public," Weth said, noting they don't mess with the fencing or the goats. "We also haven't had any issues (with predators)."

He noted Chattanooga, which has also used goats for kudzu, had problems with coyotes getting in.

The practice is becoming more and more popular, he said. Atlanta, Ga., has also used it. "Though at about \$2 per

goat, not a lot of cities have that in their budget." He speculated, "I think to make it really cost effective, you'd almost have to have your own (goats)."

In addition to being effective in the removal of kudzu, the goats are also mini celebrities.

"It's funny how well received they are. The media comes out each time they come back," Weth commented. "They are environmentally friendly. We get negative feedback when we use Roundup, so it's nice to get good feedback for being environmentally friendly."

He added, "It's been very positive. I would definitely recommend it to cities: It's a win-win for cities."

That said, he emphasized cities have to have a plan. "One summer is not going to solve the problem. If you really want to make a dent (with kudzu), you've got to bring them back." ■



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Why you probably need a work order management system



By ERIN DOZOIS | The Municipal

Has the workplace seen more than its fair share of chaos as of late? Does it seem like too much time is spent sifting through confusion and correcting mistakes? If so, it's probably time to cash in the makeshift database or pencil and paper record-keeping method, and invest in a work management system.

Municipal governments, public works agencies, utilities, transit agencies, park departments, airport authorities, improvement districts and a host of related entities manage labor, materials and equipment, and record time and costs to keep their owned assets safe and operational. Nearly all keep maintenance records and track work: a process that's made easier and less costly with the help of a work management system.

Why do you need one?

It's said that communication is key to any successful relationship, and it's no different with on-the-job teammates.

A work management system is software that takes employee activity data and reports productivity levels on groups of or individual employees. Having this software helps workforce productivity by gaining visibility into not just how much, but where workforce labor dollars are being spent.

"If you only care about fixing what is broken, then a simple paper system of writing down calls as they come in and sending out a tech to fix the problem works," said Joe Sigler, P.E., chief of engineering, York County, Va., and author of "Automated Asset Management Systems." But in today's economy, everyone has to work as cost

effectively as possible. This means answering such questions as:

- When is it time to replace, rather than repair equipment?
- Which equipment — type A or B — has the lowest lifetime cost?
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- Which employees should be promoted or rewarded?
- Which employees need additional training or counseling?
- Which customers are making or losing you money?
- How much time and money are being spent on each indirect or non-value-add process?

Transitioning from paper-driven, manual processes to workflow automation is the key to saving time, money and frustration.

LEFT: WOs facilitate interoffice data sharing among departments and personnel. (Shutterstock photo)

BELOW: Work order management systems provide department managers with relevant and organized information about the status of a project, the history of an asset's performance and much more. (Image provided)



What can a WO management system do?

“It’s difficult to make such decisions if you don’t have good records concerning how much time and money you have spent on maintaining a particular piece of equipment, or what types of repairs are most needed,” continued Sigler. “Work order management systems are much more efficient at preventative maintenance, record keeping and generating reports.”

Work order management systems can:

- Capture all the aforementioned information and make it available to the decision-maker in the form of reports, tables and/or graphs
- Engage in social conversations and interactions, which are then automatically put into a work context
- Sync and align teams, regardless of whether they’re co-located or distributed remotely
- Optimize resource allocation to ensure they meet productivity and schedule goals while adhering to budgets and scope
- Expedite the process for viewing, tracking and comparing costs
- Send notifications and alerts when each work order is generated
- Provide up-to-date information to customers
- Run comparisons between cost estimates and actual costs
- Take and track inventory
- Schedule reactive and preventive maintenance
- Automate many steps of getting a repair made
- Get real-time updates on projects and programs, from big picture to granular details ▶

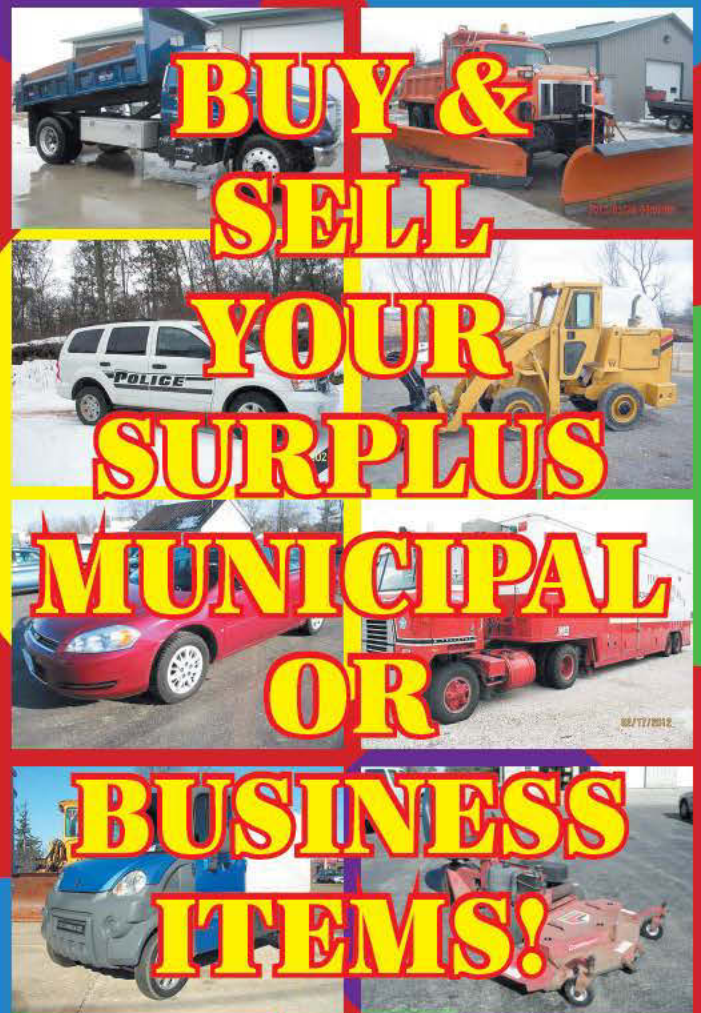


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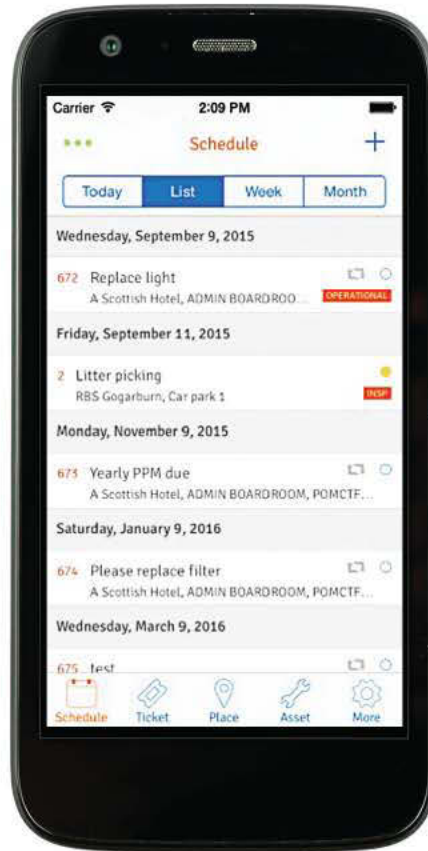
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Customize the system

When looking for a work management system to ramp up productivity, more must be better right? But good ratings and flashy features do not necessarily make for a better solution. In comparison to what the need might be, high-end behemoths can be difficult to use and bloated with unnecessary features — rendering them next to impossible for an average employee to use without enlisting the help of tech support.

Knowing which work order management tools your department truly needs is critical. Most systems are capable of the following:

1. Letting individuals automate repetitive business processes
2. Following up automatically on uncompleted tasks
3. Giving an overall picture of the workflow, along with performance metrics
4. Letting the manager think simplistically, while the system performs all complexities in the background
5. Having a what-you-see-is-what-you-get form designer
6. Including cloud-based technology
7. Producing key performance indicator-based reports
8. Employing service level agreement status indicators
9. Displaying notifications when and where they are needed
10. Utilizing parallel workflow branches
11. Securing with role-based access control
12. Integrating with other cloud services
13. Allowing users to pay as they go



LEFT: By providing transparent scheduling data that's available on-the-go through a work order management system, employees gain a better understanding of what the department supervisor thinks their day should look like. (Image provided)

RIGHT: Such systems organize work order information in a format that permits desirable data to be extracted quickly by anyone with access. (Image provided)



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Cost and implementation

It's difficult to determine a face value price tag for this kind of software, given wide array of possible functions and the size of the municipality. Often times WO management systems will add consultation, licensing and upgrade fees. They start at about \$10,000 a year and can price into the high hundred thousands, with three to five times that amount sometimes often recommended for software add-ons.

Also depending on the size of the agency, a work management system can take anywhere from a month to two years to implement. Software advancements and improvements increase the timeframe for deployment, as well as the potential cost. 



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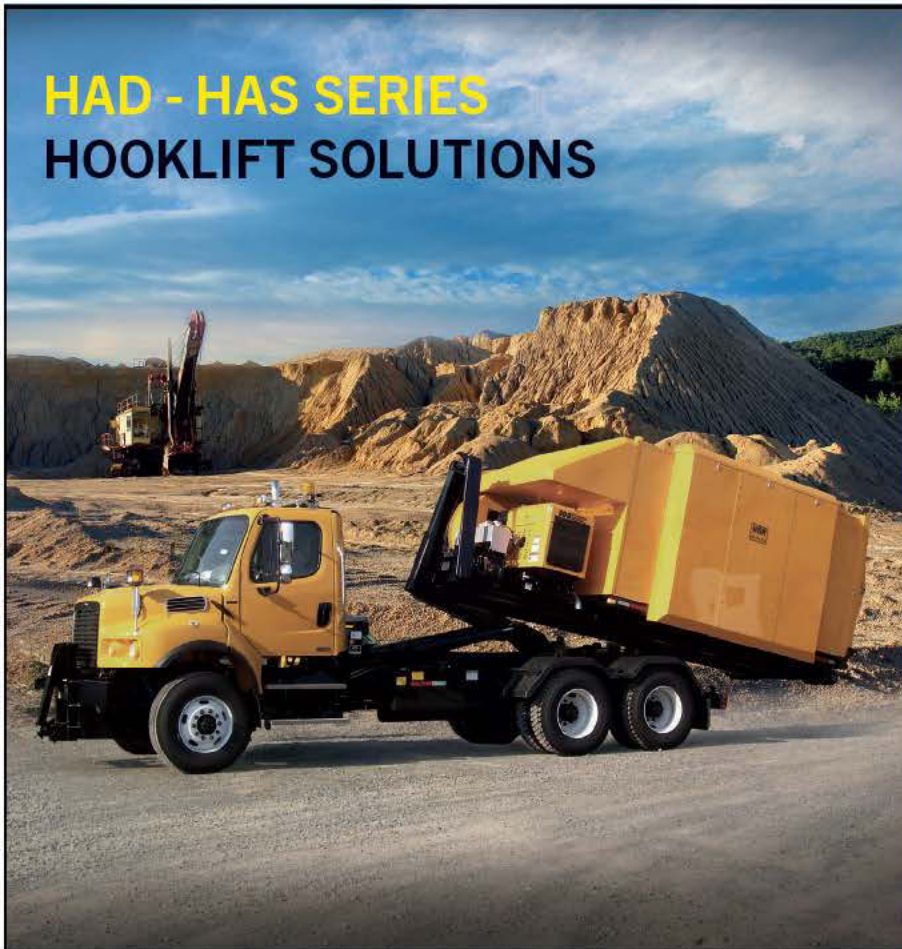
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Roadway fundraising gets the boot

By BARB SIEMINSKI | The Municipal

THE PUBLIC IS FAMILIAR WITH Fill-the-Boot fundraising campaigns for the Muscular Dystrophy Association, which firefighters around the country generously carry out each Memorial Day or Labor Day weekend. The fire service honors a long-standing tradition of supporting MDA, the American Cancer Society and other well-known charities, so out they go—into the middle of the street near a traffic light, holding a fire boot into which motorists deposit donations while waiting for the light to change.

Even though such roadway collections have been going on for at least six decades, the practice has come under fire recently.

Due to the obvious personal hazard of standing in the middle of traffic, some departments have made changes to the method by which donations for charitable causes are collected. A few years ago, the state of New York even enacted New York Vehicle and Traffic Law 1157-A prohibiting any solicitation in the roadway.



Driver complaints formed part of the reason for the law. Some drivers did not approve of the additional time it took to get through traffic when the cars ahead slow to make a donation. Another issue was the practice in some places of allowing young children on the median to do a similar type of collection.

As one method of deterrence, police agencies do tend to enforce the law. In other cities, fire departments are simply denied a permit to work intersections because of the hazard.

A firefighter in Lansing, Mich., was deliberately and fatally struck last year while participating in a boot drive. The angry perpetrator was subsequently charged with murder. In March 2015, an employee of the Ladson, S.C., fire department was imperiled and hospitalized with head injuries after being accidentally struck. A few years prior, a volunteer firefighter in Haughton, La., was seriously injured when hit in the back by a motorist.

It is important to note that rarely does the public complain about this type of fire service fundraiser; the concern is rather for the safety of its implementation. Usually, firefighters who collect for charity are donating

Even though firefighters exercise caution and motorists are generally respectful during annual boot collections for charitable causes, collection drives that involve firefighters standing in traffic are being prohibited in some cities out of concern for their safety. (Shutterstock photo)



their time. Their dedication and effort raise hundreds of thousands of dollars each year that are given back to the community and to charities. Sometimes the funds raised will also go toward purchasing or updating fire equipment, or to training.

Chief Rick Ennis of the Cape Girardeau, Mo., Fire Department noted his city has a long-standing ordinance against collecting at intersections. The department searches for alternate sites where it can legally conduct its collection drives.

"We pick different locations in big-box store parking lots, such as at Best Buy, Walmart or Sam's Club," he said. "Of course we always ask permission first from the facility owner, and we set up during high foot-traffic times. The firefighters are stationed at the entrance doors to the store, so it's a safe environment

LEFT: Marshfield, Wis., firefighters during last year's Fill-the-Boot campaign that took place not in the roadway, but at an alternate location. (Photos provided)

RIGHT: An annual wild pony swim is one alternative to boot collection fundraising that's employed by the Chincoteague Volunteer Fire Department in Virginia. (Photo courtesy of Michael Bernstein)

Fire Chief Robert Haight III of Marshfield, Wis., applied last year for permission to hold a roadway donation drive. The request was denied, but firefighters were offered the parking lot of a nearby business to host a similar event. (Photo provided)



of walk-up traffic. They usually do it maybe two nights a week and then on the weekend for a couple of weeks.

"In addition to the MDA 'Fill-the-Boot' fundraiser we also participate in a spring charity called 'Fill-the-Helmet,'" he continued. "There we use helmets instead of boots, but it's the same concept. Our helmet proceeds go to the Missouri Burn Camp, a summer camp for burn survivors."

Fire Chief Robert Haight III, of Marshfield Fire & Rescue in Wisconsin, has never run a roadway fundraiser.


"Our union has run a Fill-the-Boot campaign at the Mayor's Breakfast event during June Dairy Days for quite a few years. The union did request approval to do fund collecting in the streets, but it was turned down by the city due to the inherent danger not only to firefighters, but to the public as well," he said. A local grocery store heard about the request and offered its parking lot as an alternate location last year.

The International Association of Fire Fighters feels concerns and restrictions over Fill-the-Boot collections are unwarranted, however.

"After 60 years since its inception, the IAFF and MDA partnership is stronger than ever, and we plan to continue raising funds for our families through our Fill-the-Boot collections," said Roger Lopez, IAFF MDA coordinator. "No one has done more to fuel MDA's mission to save and improve the lives of kids and adults affected by muscular dystrophy, ALS and other muscle-debilitating diseases.

"There are currently no plans to stop this hazardous type of collecting internationally. We have put together many safety precautions and procedures that our members use to ensure the safety of our firefighters and the citizens they protect."

Also among the repercussions this type of collecting has produced are ordinances to address panhandling, said Lopez.

"Our stance is that firefighters are not panhandlers, and the citizens we serve understand this simple distinction. The only loss of life was a hit-and-run incident, which claimed the life of one of the Lansing, Mich., firefighters. This was the first and only fatality in the history of the 61-year-old program, (despite) hundreds of thousands of previous events across the nation. This was not an accident, but an intentional criminal act by one person against our member." 



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June 14 — *Flag Day*


Flag Day is nationally recognized, and annually celebrated, on June 14. On that date in 1777, the Continental Congress in Philadelphia adopted a resolution that gave the new republic its first emblem, the flag of the United States of America. The most-recognized symbol of the United States of America turns 239 years old this year.

President Harry Truman signed an Act of Congress in 1949 that designated June 14 as Flag Day. The U.S. Congress determined Waubeka, Wis., was the birthplace of the observance.

What does the U.S. President proclaim on Flag Day?

Traditionally, the president issues a proclamation calling for the display of the flag of the United States on all government buildings and designates the week of June 14 as National Flag Week. He requests that all citizens display the flag throughout the course of the week.

The proclamation aims to inspire the American people to celebrate the period from Flag Day through Independence Day, by having public gatherings and activities in which they honor the United States and publicly recite the Pledge of Allegiance.

Local branches of the American Legion and other patriotic service groups use the day of celebration of the American flag to honorably retire and dispose of flags that are no longer fit for public display. 

Pictured: A park ranger raises the American flag in New Gorge National Park, West Virginia. (Joseph Sohm / Shutterstock.com)



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NAFA 2016 I&E

ABOVE: Fleet industry professionals shared their experiences and expertise during several opportunities offered by NAFA to sit back, relax and compare notes at the 2016 I&E. (Photo by Jodi Marlin)

IF THERE'S A FLEET-RELATED QUESTION that didn't get answered — or at least discussed — at the NAFA 2016 Institute & Expo, somebody wasn't doing something right.

Formal networking events and pop-up opportunities for casual conversation characterized the intimate annual gathering of fleet administrators. Attendees from the U.S., as well as a few foreign countries, interacted with their counterparts, equipment exhibitors and other industry stakeholders during the conference's four productive days, April 19–22, in Austin, Texas.

The presentation of Fleet Excellence, or Flexy, Awards capped opening day festivities on Tuesday. Individuals in both the public and private sector who implemented innovative and successful strategies for growth, sustainability and streamlining their operations were recognized. Among others, the

awards went to Keith Kerman, New York City Fleet, in the category of Excellence in Public Fleet Sustainability; Dalton Pratt, Texas DOT, Austin, in the category of Excellence in Public Fleet Safety; and Jeff Meggitt, Regional Municipality of York, Ontario, in the category of Outstanding Achievement in Public Fleet Management. The event also recognized individuals such as Sheryl Grossman, former NAFA vice president and now NAFA Member of the Year, for demonstrating commitment to NAFA and to the development of efficient and sustainable fleet operations.

Innovations in telematics dominated the Expo floor at the Austin Convention Center. The VC1000 van crane made its debut, and GPS Insight celebrated its 10th anniversary of talking vehicle and asset tracking with attendees. ARI specialists talked managing data; and Setina, a widely known name in law enforcement equipment packages, brought

along a 2016 Ford Interceptor fully equipped with passenger transport and storage for hands-on and up-close inspection.

Safe driving practices stood front and center at this year's gathering. Dozens of attendees took a pledge to drive phone-free and without texting, and to speak out when witnessing others engaged in distracted driving.

During Thursday morning's keynote address, Donna Setaro drove home the theme of driver care and awareness. The founder of New Jersey's Move Over Law awareness campaign, Setaro brought her audience up to speed on the need for and the development of the legislation, which preceded the 2010 death of New Jersey State Trooper Marc Castellano, her son, by about a year. **M**

For information about getting in on NAFA 2017 I&E, visit www.nafainstitute.org.

RIGHT: GPS Insight celebrated its 10th anniversary of talking vehicle and asset tracking with NAFA 2016 Institute & Expo attendees. (Photo by Jodi Marlin)

BELOW: Jeff Meggitt, CAFM, Regional Municipality of York, Ontario, Canada, walked away with the Outstanding Achievement in Public Fleet Management Award from the NAFA 2016 Fleet Excellence Awards Gala Tuesday evening. (Photo by Jodi Marlin)



RIGHT: NAFA Chief Executive Officer Phillip Russo speaks with conference attendees outside the exposition hall on April 21. (Photo by Jodi Marlin)



For a complete list of all upcoming events please visit themunicipal.com/events.

To list your upcoming conference or seminar in The Municipal at no charge call (800) 733-4111, ext. 2392, or email the information to jmarlin@the-papers.com.

JUNE

June 15–18 New York State Association of Fire Chiefs 2016 Fire Industry, Rescue & EMS Expo/Fire 2016

Turning Stone Resort, Verona, N.Y.
www.nysfirechiefs.com/events/fire-2016/fire-2016-gen.html

June 16–19 International Hazardous Materials Response Teams Conference

Hilton Baltimore, Baltimore, Md.
www.iafc.org/hazmat

June 20–23 Government Fleet Expo & Conference (GFX)

Music City Center, Nashville, Tenn.
www.governmentfleetexpo.com

June 22–24 Snow & Ice Management Association 19th Annual Snow & Ice Symposium

Rhode Island Convention Center, Providence, R.I.
www.sima.org/show

June 24–28 Georgia Municipal Association Annual Convention

Savannah International Trade & Convention Center, Savannah, Ga.
www.gmanet.com

June 26–29 American Society of Safety Engineers Safety 2016 Professional Development Conference & Exposition

Georgia World Congress Center, Atlanta, Ga.
safety.asse.org

June 28–29 Police Security Expo 2016

Atlantic City Convention Center, Atlantic City, N.J.
www.police-security.com

JULY

July 8–12 Florida Fire Chiefs' Association Executive Development Conference

The Vinoy Renaissance Resort & Golf Club, St. Petersburg, Fla.
www.ffca.org

July 14–17 Municipal Association of South Carolina Annual Meeting

Charleston Place Hotel, Charleston, S.C.
www.masc.sc/education-events/association-events/annual-meeting

July 17–20 American Association of Motor Vehicle Administrators Region I Conference

Louisville Marriott Downtown, Louisville, Ky.
www.aamva.org

July 17–21 Community Anti-Drug Coalitions of America Mid-Year Training Institute

Mirage Hotel & Resort, Las Vegas, Nev.
www.cadca.org/events/15th-annual-mid-year-training-institute

July 18–20 Fleet Safety Conference

Renaissance Schaumburg Convention Center Hotel, Schaumburg, Ill.
www.fleetsafetyconference.com

July 14–17 Municipal Association of South Carolina Annual Meeting

Charleston Place Hotel, Charleston, S.C.
www.masc.sc

July 22–25 National Association of Counties Annual Conference & Expo

Long Beach Convention Center, Long Beach, Calif.
www.naco.org

July 24–27 National Association of Police Organizations 38th Annual Convention

Eau Palm Beach Resort & Spa, Palm Beach, Fla.
www.napo.org

AUGUST

Aug. 14–17 Institute of Transportation Engineers 2016 Annual Meeting & Exhibit

Anaheim Marriott, Anaheim, Calif.
www.ite.org/annualmeeting

Aug. 16–17 Midwest Security & Police Conference/Expo

Tinley Park Convention Center, Tinley Park, Ill.
www.mspsc.com

Aug. 16–18 American Association of Motor Vehicle Administrators Annual International Conference

Williamsburg Lodge, Williamsburg, Va.
www.aamva.org

Aug. 17–20 International Association of Fire Chiefs Annual Conference & Expo (Fire-Rescue International)

Henry B. Gonzalez Convention Center, San Antonio, Texas
www.iafc.org/micrositeFRIconf

AUGUST

Aug. 18–20 Florida Municipal League Annual Conference

Diplomat Resort, Hollywood, Fla.
www.floridaleagueofcities.com

Aug. 21–24 NIGP Forum – Annual Meeting

Gaylord National Resort & Convention Center, National Harbor, Md.
nsite.nigp.org/forum2016

Aug. 22–25 StormCon, the SurfaceWater Quality Conference & Expo, & WasteCon 2016

Indiana Convention Center, Indianapolis, Ind.
www.stormcon.com;
swana.org/Events/WASTECON

Aug. 27–30 International Municipal Signal Association Forum & Expo

Renaissance Atlanta Waverly & Dobb Galleria, Atlanta, Ga.
www.imsasafety.org

Aug. 28–31 American Public Works Association Public Works Expo (PWX)

Minneapolis Convention Center, Minneapolis, Minn.
www.apwa.net/PWX

Aug. 29–Sept. 1 Florida Recreation & Park Association Annual Conference

Caribe Royal Resort, Orlando, Fla.
www.frpa.org/conference/confgeneral



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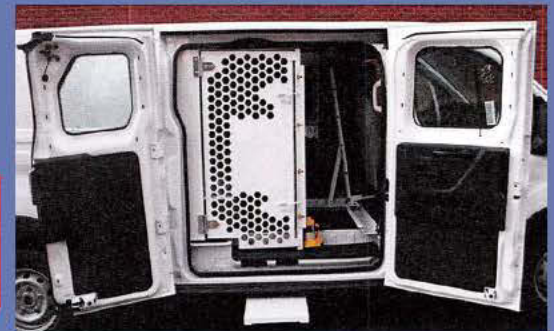
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Arizona Instrument makes low-level H₂S detection portable

By JODI MARLIN | The Municipal

A RECOGNIZED LEADER IN WASTE-water and environmental monitoring solutions, Arizona Instrument LLC leads the field in toxic gas analyzers and in moisture, solids and ash analyzers designed to provide accurate and reliable data in compact and rugged packages. Since the company's founding, its Jerome and Computrac lines have become synonymous with phrases like easy-to-use and robust-and-durable.

Arizona Instrument was originally two separate companies. Jerome Instrument Corp. was founded in 1978 in Jerome, Ariz., with the ultimate goal of helping miners locate more gold in and around the city. By utilizing gold's sensitivity to mercury, they were able to create a gold film sensor that could detect mercury vapor in the air. Mercury and gold are usually found close to each other underground; therefore, having a sensor that could detect mercury was very useful for miners searching for gold.

Quintel Group, formerly part of Motorola, founded AZI in 1981 with the objective of building easy-to-use, durable and accurate moisture analyzers that would increase efficiency and help ensure high-quality products for manufacturers in various industries. The companies partnered in 1982 to market and sell the Jerome and Computrac products, and in 1986 AZI acquired JIC, taking over all design, manufacturing, sales and service operations for the Jerome product line.

Jerome units are used to detect ultra-low levels of hydrogen sulfide and mercury vapor in ambient air. They are ideal for regulatory compliance situations; personal health and safety; and environmental monitoring for industries, including wastewater treatment, landfill management, recycling, hazmat response and energy generation. Computrac moisture, solids and ash analyzers are also used in a variety of industries to monitor

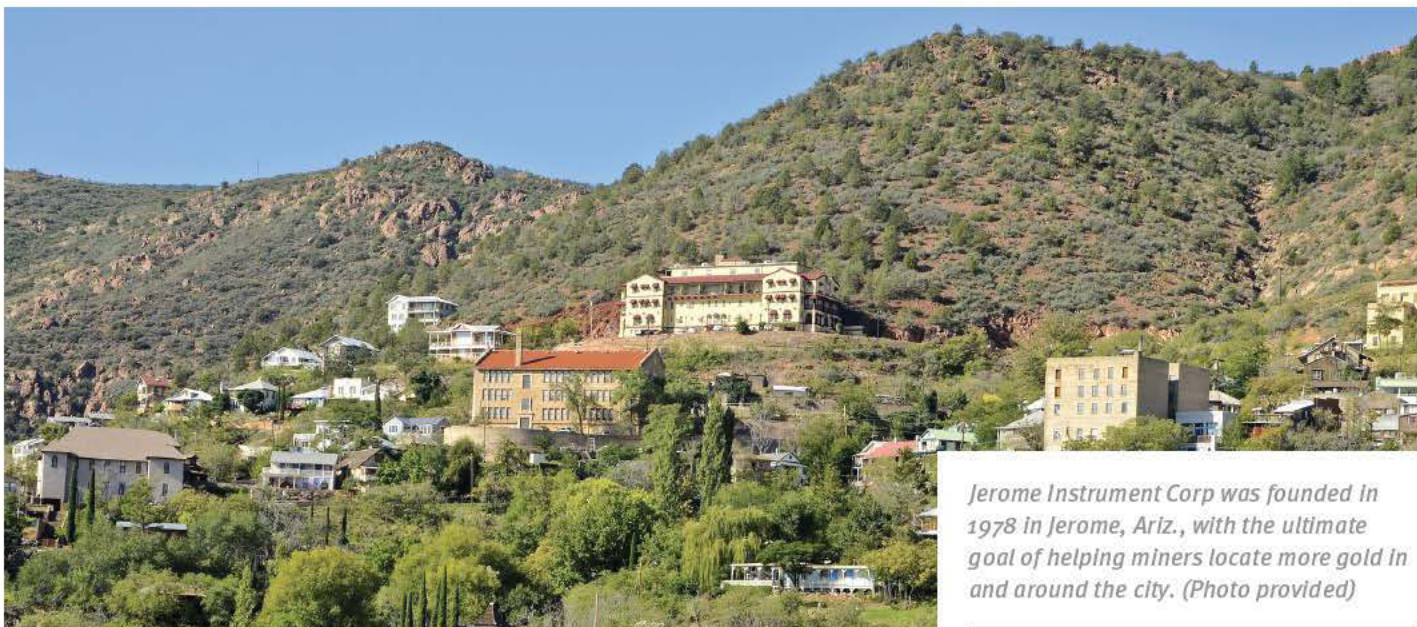


Multiple Jerome 651 units can be linked to form a perimeter monitoring system that continuously monitors H₂S levels. (Photo provided)

AZI Jerome portable analyzers are sensitive enough to read at the low parts per billion levels required by customers, for regulatory compliance of H₂S as a nuisance odor. (Photo provided)

The Jerome 301 was one of the earliest gold film mercury detectors offered by JIC. (Photo provided)





Jerome Instrument Corp was founded in 1978 in Jerome, Ariz., with the ultimate goal of helping miners locate more gold in and around the city. (Photo provided)

quality and help improve processes. In regard to municipalities, Computrac are most commonly used to test the solids content of wastewater sludge, slurries and cakes during dewatering operations at wastewater, hazardous waste and landfill facilities. Their design allows for accurate use in both the plant and the lab.

Superior capabilities

Utilizing and improving upon Jerome's industry-proven gold film sensor technology, the J605 has an extended battery life of 18 hours on a single charge and is equipped with an intuitive menu-drive interface that makes operation easier and more reliable than ever before. It can measure concentrations of hydrogen sulfide in air as low as three parts per billion and has a resolution of 20 parts per trillion. This means that for every billion parts of air, only three are H₂S—and the Jerome can find them! This makes monitoring for compliance and monitoring off-gassing from activated-carbon wastewater scrubbers easier and more accurate than ever before.

Off-gassing at landfills is another situation easily monitored by Jerome H₂S units. Because humans can pick up the rotten-egg smell of H₂S at a level as low as five ppb, monitoring emissions around that level can prevent complaints, penalties and shutdowns. Jerome instruments provide real-time readings rather than a time-weighted average like many other H₂S instruments.

Notably, analyses performed using Jerome devices are accepted by the Environmental Protection Agency and other regulatory bodies. In several international cases, use of the Jerome has, in fact, become the standard. "Especially when it comes to H₂S and ambient air, many have turned to Jerome," noted Curren.

Gold standard and portability

The Jerome line achieves quick and highly reliable results due to use of a gold sensor. Gold is inherently stable and allows a more precise analysis than other types of sensors. Combine that with unique portability for low-level detection and a history of durability, and the Jerome becomes an essential piece of instrumentation for municipal facilities.

"We have customers who purchased their units 20–25 years ago and they're still coming in only for occasional adjustments," said Pecha.

"Jerome analyzers are highly versatile," he also noted. "A municipality can take and use it to test the scrubbers and then go get a fenceline reading, or use it to walk around in a neighborhood and pinpoint the source of an H₂S odor."

Cases in point

Escambia, Fla., installed Jerome 651 H₂S fixed-point monitoring instruments, as seen on the previous page, at strategic locations throughout the neighborhood of Wedgewood last year after odor complaints were received from residents, as well as a school and a

community center. This helped pinpoint the source of the odor, determined to be the Rolling Hills Landfill.

The Escambia County Board of County Commissioners bought four detection units. It set them to capture hydrogen sulfide levels every 30 minutes and to notify local health officials and residents when the level of H₂S from the landfill reached a level of concern. The Jerome monitors are continuing to help officials in Escambia and nearby Santa Rosa to track the H₂S levels coming from the landfill and ensure the health and safety of local residents.

Across the pond, Jerome instruments are making a significant impact on the progress of a project involving Thames Water's Mogden Sewage Treatment Works and AZI's local distributor and service provider, ABLE Instruments. The two are working together to upgrade Mogden's hydrogen sulfide monitoring network to the new, best-in-class Jerome J605. The enhanced monitoring capabilities of the J605 are helping to reduce odor at and around the site.

To find out more about how Jerome toxic gas analyzers and Computrac moisture, solids and ash analyzers can work for you, visit www.azic.com/municipal.

If you'd like the opportunity to speak to someone in person, visit AZI at the National Environmental Monitoring Conference Environmental Measurement Symposium Aug 8–12 in Orange County, Calif., or booth 441 Sept 24–28 at WEFTEC in New Orleans, La. ■



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NTEA recognizes new and requalified Member Verification Program companies



FARMINGTON HILLS, MICH. —

NTEA — The Association for the Work Truck Industry — recognizes four organizations that distinguished themselves as Member Verification Program companies during the quarter ending in March. In addition, six companies requalified for the program.

Since 2005, MVP has recognized hundreds of companies for successfully implementing specific business standards and processes, and for taking the necessary steps to comply with applicable government regulations. Suppliers and up-fitters with MVP status are identifiable to fleet managers and truck dealers as having achieved a higher commitment to excellence by their effective use of safety and quality standards.

The newest MVP companies are: C&R Fleet Services, Griffin, Ga.; Cherokee Truck Equipment LLC, Chattanooga, Tenn.; Palfinger American Roll-Off, Trenton, N.J.; and Stonebrooke Equipment Inc., Burnsville, Minn. In addition, six companies requalified for the program.

Atlanta BeltLine Historic Fourth Ward Park earns ISI Envision Gold Award



WASHINGTON, D.C. —

Atlanta's Historic Fourth Ward Park project recently received the Institute for Sustainable Infrastructure's Envision rating system's Gold award. A partnership of Atlanta BeltLine Inc. and the Atlanta Department of Watershed Management, it was one of the first components in the progressing BeltLine Project — a comprehensive effort to provide a network of public parks, multi-use trails and transit along a historic 22-mile railroad corridor circling downtown. Historic Fourth Ward Park is the 12th project in North America to receive an ISI Envision rating award.

Direction for this project originated from conversations among citizens discussing local stormwater issues. As part of the development effort, the stormwater management was enhanced from a series of underground pipes into a community amenity. HDR worked closely with ABI, DWM and the community to design a park that features a stormwater retention pond, while serving multiple purposes for the adjacent neighborhood.

The park provides much-needed drainage in a 300-acre basin and uses artistic elements to aerate and recycle pond water — in a dramatic contrast to traditional discharge pipes. The pond serves as the park's centerpiece and is surrounded by walking trails, urban plazas, native plantings and an amphitheater. ▶

News releases regarding personnel changes, other non-product-related company changes, association news and awards are printed as space allows. Priority will be given to advertisers and affiliates. Releases not printed in the magazine can be found online at www.themunicipal.com. Call (800) 733-4111, ext. 2392, or email jmarlin@the-papers.com.

APWA and key water organizations launch Effective Utility Management Report

WASHINGTON, D.C. —The American Public Works Association; American Water Works Association; Association of Metropolitan Water Agencies; National Association of Clean Water Agencies; National Association of Water Companies; Association of Clean Water Agencies; Association of State Drinking Water Administrators; and the Water Environment Federation, in collaboration with the U.S. Environmental Protection Agency, announced recently the release of the Effective Utility Management Report at the National Water Policy Forum in Washington, D.C.


APWA, along with the EPA and water associations, announced the report, titled, "Taking the Next Step: Findings of the Effective Utility Management Review Steering Group," to identify refinements to the EUM framework. That framework includes ten Attributes of Effectively Managed Utilities, or "building blocks," of effectively managed water sector utilities, and five keys to management success. The key areas of change in the water sector since 2007 that were a driving factor behind the findings in the EUM report include accelerated adoption of automated and "smart" systems and data integration, enhanced customer expectations and public awareness, increased focus on resource recovery, and greater consideration of stormwater and watershed management.

For more information about the report, visit watereum.org/about/ or contact APWA Director of Sustainability Anne Jackson at ajackson@apwa.net.

Jessica Scheyder promoted to ATSSA director of training

FREDERICKSBURG, VA. — Jessica Scheyder has been promoted to director of training for the American Traffic Safety Services Association, after serving as associate director of training and products for nearly three years. Scheyder began her employment with ATSSA in 2013.

In her new role, Scheyder is responsible for ensuring that ATSSA expands its already-robust selection of high-quality roadway safety training courses, professional certifications and products and publications for the safety segment of the transportation industry. She will meet ATSSA member training needs by ensuring that the association's courses, which are led by expert instructors, are regularly scheduled throughout both the United States and online; and developing additional training courses as needs arise. Scheyder created the online format for ATSSA courses within the first eight months of her employment with the association and continues to expand that delivery method.

Prior to her employment with ATSSA, Scheyder worked for the American Society of Association Executives in Washington, D.C., first as manager and then as senior manager. She began her career at CastlePoint Mortgage. 



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26 GVW

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<https://www.youtube.com/watch?v=XQv5viqSWxA>
\$58,500

M

TOP 20

American cities getting the most exercise

Does more perfect weather exist than a day in the month of June? Located smack-dab at the midway point of the year, June is when ice and snow exist only as distant memories; yet the temperatures aren't scorching and hurricane season hasn't so much as begun to gather its thoughts. It's by far and away the best month to move life out-of-doors.

Americans — some more than others — also take their exercise routines outside during early summer's temperate weather.

Healthy exercise is embraced to varying levels across the country. In February, 247wallst.com published a list of the cities where residents exercise more, both indoors and out. Deciding factors in the final ranking were the percentage of residents reporting physical activity, number of fitness centers per 100,000 residents, obesity rate and percentage of adults reporting fair or poor health. The cities that came in peak form were:

Percent reporting Physical activity

90.3%

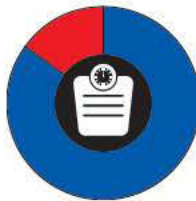


Fitness centers per 100,000



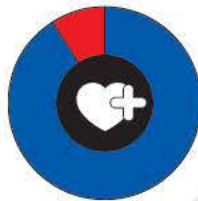
Obesity rate

15.0%



Good vs. fair/poor health

90.9%/9.1%



1. Boulder, Colo.
2. Santa Cruz-Watsonville, Calif.
3. Barnstable Town, Mass.
4. Napa, Calif.
5. Bridgeport-Stamford-Norwalk, Conn.
6. San Luis Obispo-Paso Robles-Arroyo Grande, Calif.
7. Corvallis, Ore.
8. Fort Collins, Colo.
9. Missoula, Mont.
10. Madison, Wis.
11. Bellingham, Wash.
12. Boston-Cambridge-Newton, Mass., N.H.
13. Bend-Redmond, Ore.
14. St. Cloud, Minn.
15. Wenatchee, Wash.
16. St. George, Utah
17. Dubuque, Iowa
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19. Santa Rosa, Calif.
20. Ames, Iowa



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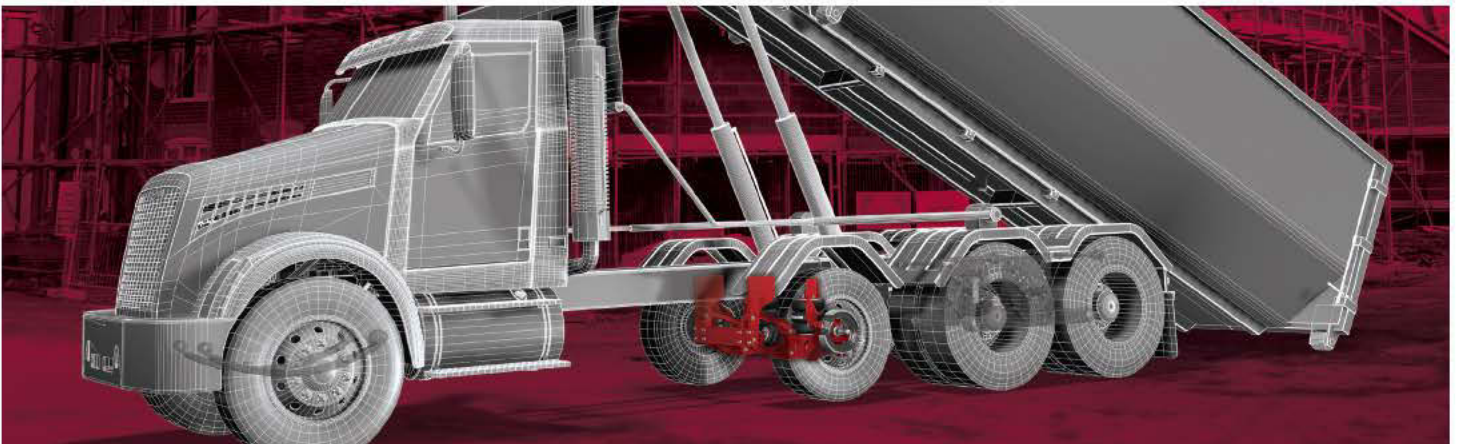
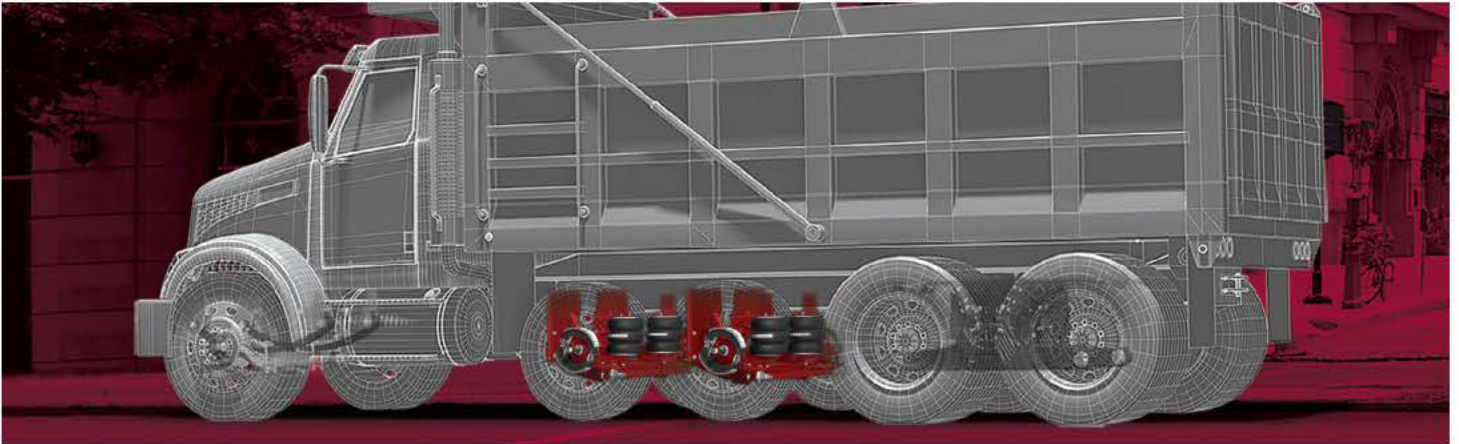
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