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November 2017

TECHNOLOGY



INSIDE:

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ON THE COVER

Dude Solutions is helping cities budget smarter with its operations management software. This software helps department heads prove their needs by having all the data of what their department has done at hand. Additionally, the software can help track assets, including tracking the status of preventive maintenance plans. Learn more about what Dude Solutions can do for you on page 10.



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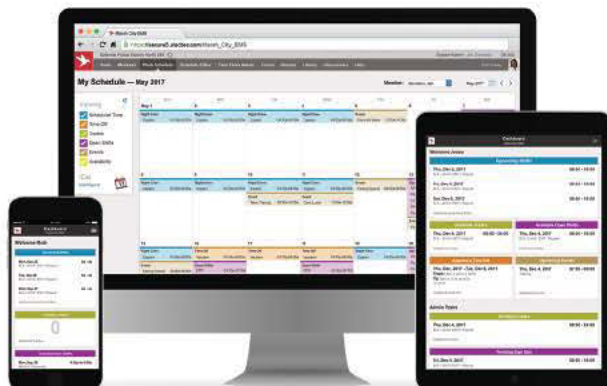
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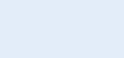
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D487,538 S; D487,177 S.



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Cities evolving with technology



Sarah Wright | Editor

IN 2016, CITIES INVESTED APPROXIMATELY \$52.4 billion in technology, according to a September 2017 Quartz article, "Smart Cities are great. Human-centric cities are (again) the future."

And a common thread seen throughout this issue of *The Municipal* is cities that are using technology to provide more and better services to citizens while also bolstering the lines of communication, whether through 311 services or getting constituents actively involved in the budgeting process.

Technology is shaping our cities and towns in ways our forefathers probably never imagined, but I for one am eager to see what cities will look like in the next decade or two, especially with such sweeping changes in cloud-based computing, the Internet of Things and even how people get from point A to point B. Ride-sharing and ride-hailing apps, for instance, promise less traffic, which will shape our road systems and parking spaces.

It's not just local streets that will be transformed. Elon Musk's Hyperloop will connect cities like never before, allowing people to travel from New York City to Washington, D.C. — with stops in Philadelphia, Pa., and Baltimore, Md. — in 29 minutes rather than taking hours. Musk is also proposing the theoretical use of rockets to facilitate travel between cities. According to *The Verge*, Musk said these ships would reach 18,000 miles per hour at their peak. Finding the people to ride these ships, however, might be a challenge;

personally, I will be one of those putting rocket travel on my "nope" list.

Other technologies like drones, or unmanned aerial vehicles, are being embraced within the public safety arena. With drones, fire and police departments have found value in a variety of applications: hot spot detection, wildfire monitoring, search and rescue missions, checking for survivors, among others. Writer Elisa Walker details the experiences of Bargersville, Ind.'s, fire department and Stafford County, Va.'s, sheriff's department with their drones in her article this month.

Another public safety technology readers will want to watch is the First Responder Network Authority. FirstNet, as it is known, delivered its official notice of state plans to U.S. governors at the end of September, allowing them until Dec. 28 to opt-in to the FirstNet/AT&T plan or not. FirstNet will build, deploy and operate a nationwide broadband network that equips first responders and other public safety personnel to save lives and protect U.S. communities. This network shows promise during crises like we've recently seen with hurricanes Harvey, Irma and Maria by giving first responders modernized devices, apps and tools to boost communications.

Texas Governor Greg Abbott selected to opt-in, stating, "As we saw in the aftermath of Hurricane Harvey, our first responders are often the last and only hope for safety in rapidly-changing and life-threatening situations,

but this partnership with FirstNet and AT&T allows Texas's fire, police, EMS and other public safety personnel to be better equipped when responding in these emergencies."

The fast communication that comes with technology will save lives. And sadly, as I finish writing this editorial, we have been shown this once again after an Oct. 1 shooting left at least 59 people dead and more than 500 wounded — as of press time, Oct. 3 — at the Route 91 Harvest Music Festival in Las Vegas, Nev. The Las Vegas Metro Police Department and other first responders reacted quickly to aid victims — shielding them, making tourniquets and driving them to hospitals in squad cars — while other officers narrowed down the location of the shooter and breached his hotel room. Given the shooter's arsenal, their quick response likely prevented an even greater loss of life.

Our hearts go out to the victims, their family members and friends and the first responders. **M**



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Dude Solutions helped Milwaukee, Wis., Department of Public Works streamline its budget report process with its software that tracks everything the department has done. The department can now show that its workload requires it to have a certain number of electricians or mechanics, and it will soon start tracking costs of material in addition to labor. (Shutterstock.com)

How technology can save your budget

By GRACE FLACK | Senior Marketing Writer at Dude Solutions

What makes a city smart?

And what makes a city smart when it comes to technology?

It has a lot to do with resourcefulness and using your assets to the best of your ability. We all know that many cities have experienced budgets being cut and more attention toward what funds are going where and why.

Technology makes a way for cities and their citizens to be smarter about their resources, leading to greater efficiencies and less stress with useful data when it comes to budgeting. The reporting and record-keeping that technology is providing cities is creating a way for them to make confident budgeting decisions, ask for more resources and be more proactive about how they're using budget dollars.

At Dude Solutions, we continuously hear stories of how cities are becoming smarter with their budgeting using our operations management software to prove their needs.

Better planning for facilities

For facilities, better budgeting is as simple as better asset management. With a cloud-based operations and asset management system like Dude Solutions' MaintenanceEdge and Capital Forecast for capital planning, the

budgeting process is more exact and less time-consuming.

Robert Hardie, facilities manager for city of Concord, Calif., uses the data from MaintenanceEdge and Capital Forecast to create more exact budgets and capital plans. "We were doing 10-year budgeting using Excel spreadsheets. We wanted to have something more specific rather than just guessing. We now have a list of all of the equipment and facilities. So, you can just go in and pull projected costs by year, or for 10 years. For budgeting purposes, you now have realistic costs of what you're going to need."

Easy access to this type of data has allowed Hardie to justify why he needed additional funding added to his routine operations budget, as well as the creation of a new capital budget that is dedicated to facility repairs and replacement. "Now I have a tool that proves to the council my need for more funding," he said. "It's easy to tell them: This is what I have to do, and this is what it's going to take."

It all comes down to improved planning and software that holds records of all your

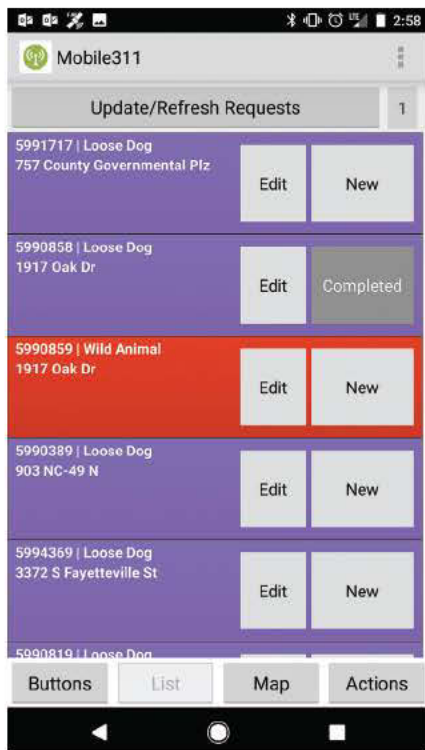
work orders, plus assets and facility condition information. This can provide the data, images and stories you need to make a compelling budget case instead of just guessing.

Better reporting for public works

Public works staff know that in this fast-moving sector of local government; you may often find yourself going to your administration or council for more assets, fixes to current equipment, or added contractors or staff. For the Milwaukee, Wis., Department of Public Works, Dude Solutions' operations management solution gave them a way to prove what and whom they needed.

"Now when we go to report budget, we don't have to guess at numbers because we can bring up reports that show everything we did and all of our stats," Safety Specialist Senior Roger Davidson said. The department can now show that its workload requires it to have a certain number of electricians or mechanics, and it will soon start tracking costs of material in addition to labor.

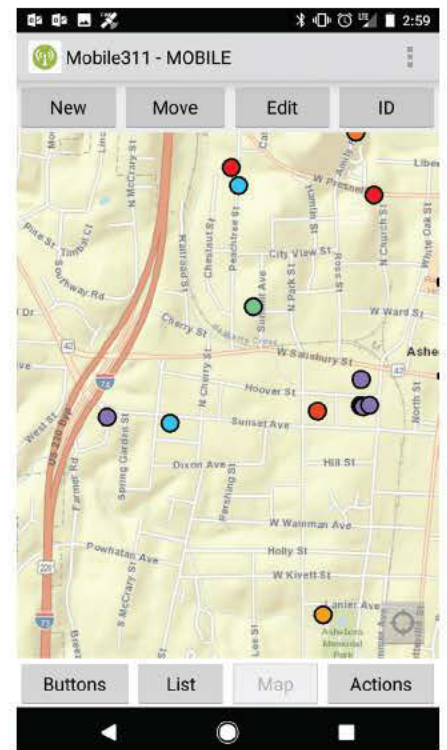
Davidson explained, "When we ask for \$500,000, we can justify it by what we've spent for the last couple of years, and we



Dude Solutions' Mobile311 app allows city employees to view requests, edit them or mark them as complete, ensuring smooth communication. (Photo provided)



A versatile app, Mobile311 proves useful in a variety of municipal departments from code enforcement, damage assessment and law enforcement to sanitation, streets and utilities. (Photo provided)



Mobile311 maps project locations for easy access. (Photo provided)

can see where a lot of wear and tear is happening on equipment.

"We're a big city that chose Dude Solutions and it really has paid off for us. We don't know how we ever operated without it," he added. "A good maintenance program helps an organization prosper, and if you're serious about maintenance and being successful in business, then you should use Dude Solutions."

For Kermit Williamson, solid waste director for the city of Asheboro, N.C., Mobile311 — a mobile asset management and workflow operations software — has greatly increased the efficiency of their department. "With Mobile311, we are saving three man-days per week. What used to take us five days we are now doing in two. Mobile311 is paying for itself in fuel savings, and we are giving better service to our community with the labor savings," he said.

Better preventive maintenance for stormwater, utilities and water treatment

Budgeting for stormwater and utilities departments can also be a conundrum as you're never sure what you will need or

when. But, with a system like Mobile311, cities can have a better idea of the work they're doing and need to complete in the future, which ties back to improved budgeting.


Eric Garcia, manager of operations for the Camrosa Water District in California, and his department use Mobile 311 to track and schedule work on assets effectively, documenting everything for easy retrieval by all team members and keeping up with time spent in the field.

"We had no method for budgeting time prior to this," Garcia said.

The water district is also able to track the status of its new preventive maintenance plan, information Garcia hopes to turn into data analytics soon, particularly for pipeline replacement.

Those in the field can now open Mobile311 on their phones and quickly see what work has been completed and what's next without having to dig through layers. One feature they frequently benefit from is being able to upload photos in the field, instead of having to upload them on a computer once back in the office.

Be proactive with your budget

Everyone probably wishes they were more proactive with budgeting, but how do you get to a place where you can walk the walk? Just like the examples you've seen above, it is possible with the right technology to document your processes, report on your work and create the case confidently for your budget and resource needs. 

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The Pest House was built in the 1840s and served as a quarantine hospital in Lynchburg, Va., until after the Civil War. (Wikimedia Commons)

BELOW RIGHT: A wooden sign beckons visitors to the Pest House Medical Museum, located in the Old City Cemetery near downtown Lynchburg, Va. (Wikimedia Commons)



Pest House Lynchburg, Va.

by RAY BALOGH | The Municipal

It takes a hero to wade soul-deep into a miasma of death and laboriously rescue victims teetering on the abyss.

Dr. John Jay Terrell was that kind of a hero.

The good doctor volunteered to staff the first of 39 hospitals in Lynchburg, Va., most of which sprang up in tobacco warehouses, shoe factories and homes during the American Civil War to address Confederate casualties.

Terrell, a Quaker, adhered to his sect's doctrine of pacifism and refused to join



Dr. John Jay Terrell (1829-1922) (Photo provided by Lynchburg Museum)

the fighting forces. Nor did he pay to have another man enlist in his stead as did some of his brethren in the faith.

So he volunteered, with the help of two nurses and a priest, to tend to soldiers suffering from smallpox, cholera and scarlet fever in Lynchburg's quarantine hospital, Pest House, or "house of pestilence."

"I would describe him as courageous," said Leah Harness, a volunteer docent for the Pest House Museum and surrounding cemetery located on the near west side of Lynchburg.

"He would have been breaking every rule in the book. The Quakers didn't want anything to do with the war."

But Terrell's dedication and ingenuity saved a lot of lives.

He noted the deplorable conditions of the hospital built in the 1840s — whose standards of medical care and sanitation were almost nonexistent — and spearheaded major changes.

His medical innovations, scoffed at by many of his colleagues, plummeted the mortality rate of Pest House patients from 50 percent to 5 percent.

Terrell was one of the first doctors to wash his hands and sterilize his instruments between surgeries.

He painted the patients' room black to ameliorate the ocular hypersensitivity to light caused by the smallpox virus.

"There were no beds at Pest House," said Harness. "He ordered a special white sand to put on the floor. He placed a few linens on top and that is where the patients would lie down. He would sweep the sand with the



The patients' room at Pest House was painted black to alleviate light sensitivity in small-pox patients and white sand was used to trap germs. After each patient's stay, the sand was swept out the door. (Photo provided by Ted Delaney)

germs out the door and that cut down on the spread of diseases."

Terrell prescribed a special diet, "including sauerkraut," according to Harness.

"I had a barrel of linseed oil and limewater to use as an ointment, with which I greased sores, so had no more sticking of clothing," Terrell wrote of his three-year experience at Pest House.

After the war, the penniless doctor opened an office on his farm outside of town and served the local populace — often traveling on horseback — until his death at 93 years of age in 1922.

In 1987, Terrell's office was moved to the 26-acre Old City Cemetery, which hosts the graves of an estimated 2,000 slaves and Confederate soldiers. The historical parcel also includes the Hearse House, Caretakers Museum, Station House Museum, Mourning Museum and a chapel still used for weddings.

The office was joined with a quarantine room to "give a more complete picture of 19th-century medicine, while still telling two very separate stories," according to the complex's website, www.gravegarden.org.

Today, visitors can indulge in self-guided tours around Pest House, listening to an audio narrative while looking through the

windows at the exhibits inside. Artifacts include Dr. Terrell's "poison chest" — similar to the modern medicine chest — asthma chair, medical instruments, an 1860s hypodermic needle, old medical books, chloroform mask and a Civil War era surgical amputation kit.

"The Old City Cemetery is the most visited historic site within the Lynchburg city limits," said Ted Delaney, executive director of the Southern Memorial Association. "We count 33,000 visitors annually during staff hours, but because our gates are open dawn to dusk every day, the true number is probably over 60,000."

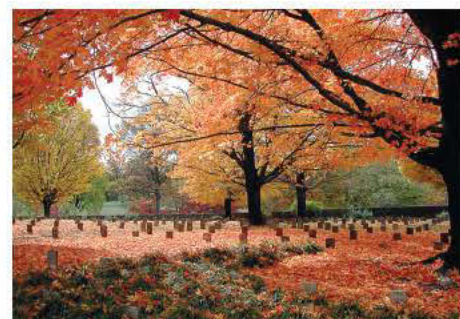
"They come from all over the world," said Harness, citing France, Belgium, Germany and Brazil as nations of origin.

The influx of visitors benefits the economy of Lynchburg, population 80,212, and several hotels and eateries in town make it a point to recommend the Old City Cemetery to their boarders and diners.

"We have a model public-private partnership between the city of Lynchburg and the local nonprofit SMA," said Delaney. "The city provides regular groundskeepers and a modest annual appropriation. SMA manages the cemetery by a five-year contract with the



The scatter garden in the Old City Cemetery is available for mourners who wish to scatter the ashes of their dear departed. (Photo provided by Ted Delaney)




The Confederate cemetery contains an estimated 2,000 graves, two-thirds of which are the resting places of African American soldiers and slaves. (Photo provided by Ted Delaney)

city. The nonprofit leverages municipal support to raise private funds and reinvest them back into the property."

Perennial beauty arises from amidst the graves. "The cemetery is also a beautiful garden," said Harness. "There is almost always something blooming."

"Every spring we have antique roses bloom among the graves from the early 1800s. We are one of the few places that have antique roses people can take home and plant."

"We have more than 350 rose bushes representing the entire history of the species," said Delaney. "We also have an herb garden and a scatter garden where people can scatter the ashes of their loved ones. The garden is visible from the road and we put up a commemorative plaque for a nominal fee."

The museums are open 10 a.m. to 3 p.m. Monday through Saturday and 1 p.m. to 5 p.m. Sunday. 

For more information, call (434) 847-1465.

Freeport, Minn.



Visitors to Freeport, Minn., are always greeted with a big smile.

The felicitous image of the smily face on the town's water tower is also front and center on Freeport's city seal.

"When they were putting up our water tower, they wanted to put something on the tower, so one of the employees of the public works maintenance department used a cardboard stencil and put on the smily face," said Adrianna Hennen, Freeport's city clerk.

The town came into existence after the Great Northern Railway laid its tracks from St. Cloud to Melrose. Several farmers had settled the area, but German immigrant John Hoeschen opened the first store in the railroad settlement and his brother, Joseph, built the village's first hotel.

Originally dubbed Oak Station, the name was changed owing to confusion arising from the names Oak Station and nearby Osakis. The name Freeport was suggested by the Benolken family, owners of some of the originally platted town property, who hailed from Freeport, Ill.

The town began with its first building, a railroad station. In 1874 School District No. 102 was organized, comprising Freeport and the surrounding vicinity, and soon the small log schoolhouse was replaced with a larger frame structure. A post office was established in 1879, with John Hoenschen serving as its first postmaster.

Freeport was incorporated in 1892. John Wahls, the town's first settler, owned the town site. Two village blocks, John Hoenschen's and Joseph Henschen's blocks, were platted, but to obtain the requisite population for incorporation, the town limits were extended to embrace several surrounding farmsteads.

When the articles of incorporation were approved, the village was laid out in 16 blocks. Two additions were appended in 1900 and 1912.

The first oak plank sidewalk was laid in 1894 and the village hall was built a year later.

A steel jail cell soon followed and a water works system was installed in 1903. An electric light system was completed in 1913.

The pleasant little burg of 657 residents served as the inspiration for Garrison Keillor's fictional Lake Wobegon, and in 1998, the surrounding Stearns County honored Keillor and his radio show, "A Prairie Home Companion," by naming a section of abandoned rail line the "Lake Wobegon Trail."

An aerial shot of Freeport, including its iconic water tower, was featured in the opening scene of the fourth episode of the Syfy miniseries "Ascension."

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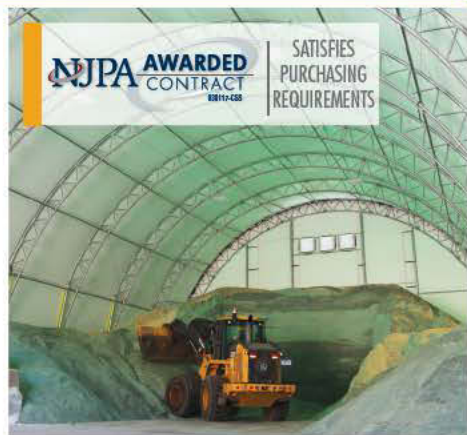
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301

AI Evanston, Ill., provides this many services to its residents. The city hopes to use artificial intelligence to improve efficiency, support employees and better help the public through those 301 services.

Read about Evanston's endeavors in technology that earned it three consecutive Tech Savvy designations on page 30.

50%



The reduction in crime that followed the expansion of Detroit's Project Green Light program, which allows businesses to install cameras that allow police to monitor crimes in real time.

Source: qz.com/1088012/smart-cities-are-great-human-centric-cities-are-again-the-future/

19,000



YouTube amazon

Frisco, Texas', Youtube video enticing Amazon to build its second headquarters within its city limits has garnered this many views as of Sept. 29. City overtures to the electric commerce giant have grown into a subgenre on the streaming service and other social media platforms like Twitter, using the hashtag #HQ2.

Source: www.youtube.com/watch?v=BHztUQIyLAA

180,000



EasyMile's EZ10 bus demonstrated its driverless bus technology in September for the city of Bloomington, Ind. The EZ10 is capable of fitting 12 passengers and has transported over 180,000 people without incident.

Source: www.idsnews.com/article/2017/09/driverless-bus-comes-to-bloomington

\$52.4 Million

The amount of money American cities spent on technology in 2016. Globally, cities could spend upward of \$41 trillion on smart tech within the next two decades.



Source: qz.com/1088012/smart-cities-are-great-human-centric-cities-are-again-the-future/

20%

The amount of steel shavings and carbon particles that Christopher Y. Tuan combines with a regular concrete mix to create conductive concrete.

Learn more about this interesting way to combat snow and ice on page 22.

5,000



Virginia Beach's Balancing Act website has been viewed nearly this many times, with 128 suggested budgets having been submitted by residents. Balancing Act has been an educational tool for the city as it brings citizens into the budgeting process and shows them the challenges of creating a balanced budget.

More can be read on Virginia Beach's Balancing Act on page 18.



Technology improving communication in several ways

By DENISE FEDOROW | The Municipal

We know that technology and social media allow for better and more frequent communication with our loved ones, but how is that transferring to municipal jobs? The answer is in a variety of ways.

According to a Florida International University study by Sukumara Ganapati, titled "Using Mobile Apps in Government," there are two types of municipal apps: enterprise-focused and citizen-oriented apps. On the local government level citizen-oriented apps are the type of technology that is getting priority. Enabling citizens to be better informed

about city happenings and streamlining bill payments and report filings are where most municipalities spend their technology dollars.

Scott Slatton, legislative and public policy advocate for the Municipal Association of South Carolina, affirmed that is what's happening in his state. Slatton said there are numerous examples of using technology to

reach residents, but he couldn't think of any specific examples of municipal managers using social media tools to communicate with employees.

"These same tools that are being used to reach the public could be used to reach employees as well, but most of our cities are on the smaller side where one-on-one personal communication is still the most used," he said.

Texting is widely used to communicate with employees, including group messaging, and obviously, email is still heavily used



A Clemson, S.C., leaf vacuum truck picks up leaves. While out on their routes, public works employees can note brush piles, hanging limbs or other issues that need attention using the city's PinPoint system to notify their supervisor. (Photo provided)

within departments. Slatton said the widespread use of iPads in different municipal departments is also a means of communication for departmental purposes.

Building offices across the state of South Carolina are using iPads to issue work orders and permit requests, he said. Mobile data centers are also being extensively used by police departments, allowing officers to stay out on the road longer. Slatton, who was once a city manager, said he knew from his own experience as a firefighter that “depending on where you are in the state, you could be getting 911 dispatches on text.”

Smart Cities

According to a March 2015 blog post by Ashish Kaushal in NewGen, “Role of Information & Communication Technology (ICT) in Smart City,” the pairing of technology and communications is growing in cities.

“A deeper reliance on ICT is becoming inevitable. Social media, mobility, machine to machine (M2M), Internet of Things (IoT), data, cloud computing, etc. will become the backbone of the next generation of Smart Cities,” the blog reads.

Slatton said the Municipal Association of South Carolina has a technology partner, VC3, that offers cloud computing accounting systems. “They do the accounting for us using cloud-based platforms so the city doesn’t have to develop its own.”

Internet of Things is a concept where objects communicate and exchange



Clemson, S.C., public works employees who spot issues on their regular trash pickup routes — such as brush piles or oddly shaped trash items — can log them into the city's PinPoint system, alerting their supervisor. (Photo provided)

information with each other through wired or wireless networks without any user intervention. One example used in the blog cited intelligent waste containers that can detect load level, which can help optimize the collection routes. The way this works is the IoT connects the end device, in this case waste containers, to a control center where optimization software processes the data and determines the optimal management.

Clemson, S.C.

The city of Clemson, S.C., received a Municipal Association of South Carolina Achievement Award because of its development of PinPoint, a technology geared toward public works but with applications for other city departments. According to Slatton and the citation on the achievement award, Clemson officials met with two ►

local businessmen to discuss a way to simplify departments, particularly public works departments.

The city officials and businessmen worked together to develop technology that would decrease miles driven by collection crews. The primary goal was to make curbside debris removal more efficient, but they also included applications for code enforcement, post-disaster information, collection, municipal risk assessment and other documentation as well as many other data collection scenarios.

The system has three main components: a GPS, Wi-Fi and a touch-screen-enabled PDA; a common Wi-Fi access point; and a desktop mapping and reporting application. The system was designed to be very user-friendly, regardless of prior computer experience.

For example, a sanitation truck driver on their daily route can also watch for piles of leaves, brush or appliances that are left curbside and simply push the touch-screen button corresponding to that situation. The computer records the GPS position, date, time and category selected, and at the end of the day, the driver wirelessly uploads the data to the public works administrator's computer. The administrator uses the information to plan the next day's debris removal.

The application can be used by other departments, too. For example, the police department could use it to report potholes, streetlights out, etc.

The PinPoint remote computer and field camera can also be used for code enforcement — photographing, categorizing and mapping problem areas such as illegal dumping grounds, hazardous building conditions, vacant lots or facility infrastructure issues. The system

can also help in emergencies by accurately locating, categorizing and quantifying damage.

The MASC felt that PinPoint is a win-win for taxpayers, city employees and administrators.

As far as other “enterprise-focused” technology, Ganapati

said that human resources functions lend themselves well to mobile optimization. Employees can also access informational apps in real time. Those apps include directory searches, organizational and operational procedures and other content management systems that can be accessed spontaneously.

“There is a greater degree of integration between line workers in the field and back office workers. Field case management, road and rail management, inventory control and supply chain management are all areas that have potential efficiency gains with mobile use,” Ganapati said in his report.

“The pairing of technology and communications is growing in cities.”



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The city of Hampton, Va., has a social media policy for employees but was unable to be reached before going to print. According to the policy online revised in July of 2014, "The city of Hampton understands that social networking and Internet services have become a common form of communication in the workplace and among shareholders and citizens. Employees who choose to participate in social networks as a city employee should adhere to the following guidelines."

Those guidelines include such things as notifying their supervisor or IT department if they intend to create a social networking site or service to conduct city business while authorizing department heads to allow or disallow employee participation in any of the social networking sites.

So while municipal departments are putting their citizens first when using technology for communication, technological innovations are bound to continually change the way city employees and managers communicate with each other as well. 



Intelligent waste containers will streamline the waste industry by detecting load level, optimizing collection routes. Optimization software will then enable management to examine the data and make informed decisions. (Shutterstock.com)



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Conductive concrete shows promise in snowy northern states

By BARB SIEMINSKI | The Municipal

It seems like a dream come true, especially for the U.S.'s northern regions that get blasted with snow, making roads and sidewalks dangerous to navigate. What we're referring to is real: There is a way to keep roads, driveways, sidewalks and tarmacs safe and clear of the white stuff that kids find so enjoyable.

But — you knew there was a caveat coming, didn't you? — like all dreams, there are real obstacles before we can even partially live out the winter fantasy of no more shovels, snowplows, cans of deicer, kitty litter or road salt.

The technology of conductive concrete has been around for at least a couple of decades, but the biggest hurdle is cost. There is hope, however. According to an article posted in

January 2016 in The International Society for Concrete Pavements, the Federal Aviation Administration is funding research to make conductive concrete more affordable.

Christopher Y. Tuan, PhD, P.E., S.E., F.ASCE, professor of civil engineering at the University of Nebraska-Lincoln, has been successful in producing a recipe for the special concrete. He adds 20 percent worth of steel shavings and carbon particles into

the standard concrete mixture, in combination with the right amount of electricity to thaw out snow and ice during storm season. Despite the electricity used, his conductive concrete remains safe to touch. The end result is a more successful choice than regular concrete combinations that are currently used on sidewalks, driveways, roads and airport runways/tarmacs.

In 2003, Tuan became the first in the world to implement conductive concrete for deicing when he installed a heated deck system for the 150-foot Roca Spur Highway Bridge in Lincoln, Neb. According to the 2008 report "Implementation of Conductive Concrete for Deicing (Roca Bridge)," the new formula being tested at the University



LEFT: Airport tarmacs — like this one at John F. Kennedy International Airport — are one potential use for conductive concrete, one of the reasons the Federal Aviation Administration is funding research into its use. While currently costly to install, conductive concrete shows potential for saving money in the long run with its durability and reduction in maintenance costs associated with snow and ice. (Shutterstock.com)

of Nebraska-Lincoln “uses byproducts from the coal and steel industries to reduce costs 60% compared to earlier trials ... Conductive concrete also has the potential to become a very cost-effective bridge deck deicing method ... (and) the technology provides an environment-friendly solution to address the looming crisis of water supply contamination by road salts, particularly on bridge decks over streams and rivers in the cold regions.”

During the testing process, Tuan begins by mixing the steel fibers and carbon powder, which are conductive, into the concrete. This mixture is poured into test slabs and then embedded with electrodes that, when plugged in, send electricity through each slab, generating heat. Once the conductive

ABOVE: Christopher Y. Tuan kneels beside his conductive concrete that makes pavements safer to navigate. Tuan was the inventor of the exciting technology that quickly melts snow on roads, sidewalks, driveways and airport tarmacs. (Photo provided)

concrete is poured into the forms for the test slabs, a thermocouple wire is stuck to the center of the test slabs to measure their temperature. A variety of differently mixed slabs are then kept in a freezer at 25 degrees, and the test slabs are hooked up to 110 volts of AC power. The controls start the power when the temperature drops to 35 degrees, and if the temperature rises to 55 degrees, the power shuts off automatically.

“It can also be turned on remotely to catch big snowstorms,” Tuan said of the Roca Spur Bridge, adding that the power used to generate the bridge “could run 23 hair dryers at the same time.

“It’s not cheap to build these roads, but once they’re in place, they require little maintenance, and lab tests show they are almost twice as strong as regular concrete.”

Tuan, who appeared on the CBS show, “The Henry Ford’s Innovation Nation,” last January, said that traditional deicing and salt use on the roads can gradually erode the pavement and create unsightly

potholes. Additionally, there is the cost of plowing. All of these downsides of regular concrete could be addressed by using conductive concrete.

“The cost of deicing the bridge during a three-day blizzard usually costs only \$250 with conductive concrete, which is vastly less than the cost of plowing and chemicals, and it doesn’t wear down the road,” Tuan said. “However, right now conductive concrete costs about \$350 per cubic yard as ▶

On the Web

Below are some fascinating videos showing Christopher Y. Tuan’s method and conductive concrete at work melting snow and ice:

- www.youtube.com/watch?v=KILg5T6ZeNE
- www.youtube.com/watch?v=ab7_rYnp3lY

opposed to regular concrete. Of course, regular concrete does not have the deicing function.”

He noted, “Current codes and specifications do not have applicable provisions to conductive concrete, which impose constraints to its use. Because conductive concrete technologies are relatively new, technical information and test data about its applications need to be made available to architects and engineers who would specify it for their deicing needs in the projects.”

Tuan has done a driveway entrance in Omaha and also a handicap-accessible walking ramp last year at the College of Business building at the University of Nebraska-Lincoln. He is currently pursuing projects with several municipalities and airports. Additionally, work is underway more responsive sensors and controls that can turn on automated concrete slabs when blizzards approach and shut them off when no longer needed.

Another research-and-development possibility of keeping the roadways clear is very much in its infancy and involves the use of paraffin oil — phase change materials or PCMs — in concrete to store energy, which is later released as heat. Research on this potential solution is being led by Yaghoob Farnam, PhD, assistant professor of Drexel University College of Engineering in Philadelphia.


Tuan added one caveat for conductive concrete:

“Please be advised that cc is not for DIY projects like the Quikrete you buy from Home Depot. The end user would need to hire an



This photo is actually from a four-hour time-lapse video showing conductive concrete melting fresh snow from its surface during a winter storm in Omaha in December 2015. (Photo provided)

electrician to supply power to the concrete. Some engineering is required,” Tuan concluded.

Tuan invites readers to contact him for more information at ctuan1@unl.edu. 

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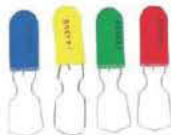
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Virginia Beach invites residents into city budget planning process



What if citizens had complete control over their city budget? No holds barred, no dreams too big or small. In this world, citizens get to shift money around, fund their most burning desires and lay off the items they feel get too much attention.

While this scenario sounds like a complete fantasy, one Virginia city is shifting this dream one step closer to reality. Sort of.

Government officials in Virginia Beach, Va., started searching as long as a decade ago for a tool or program that allowed residents to engage with the city's budget. About two years ago, they stumbled across Balancing Act.

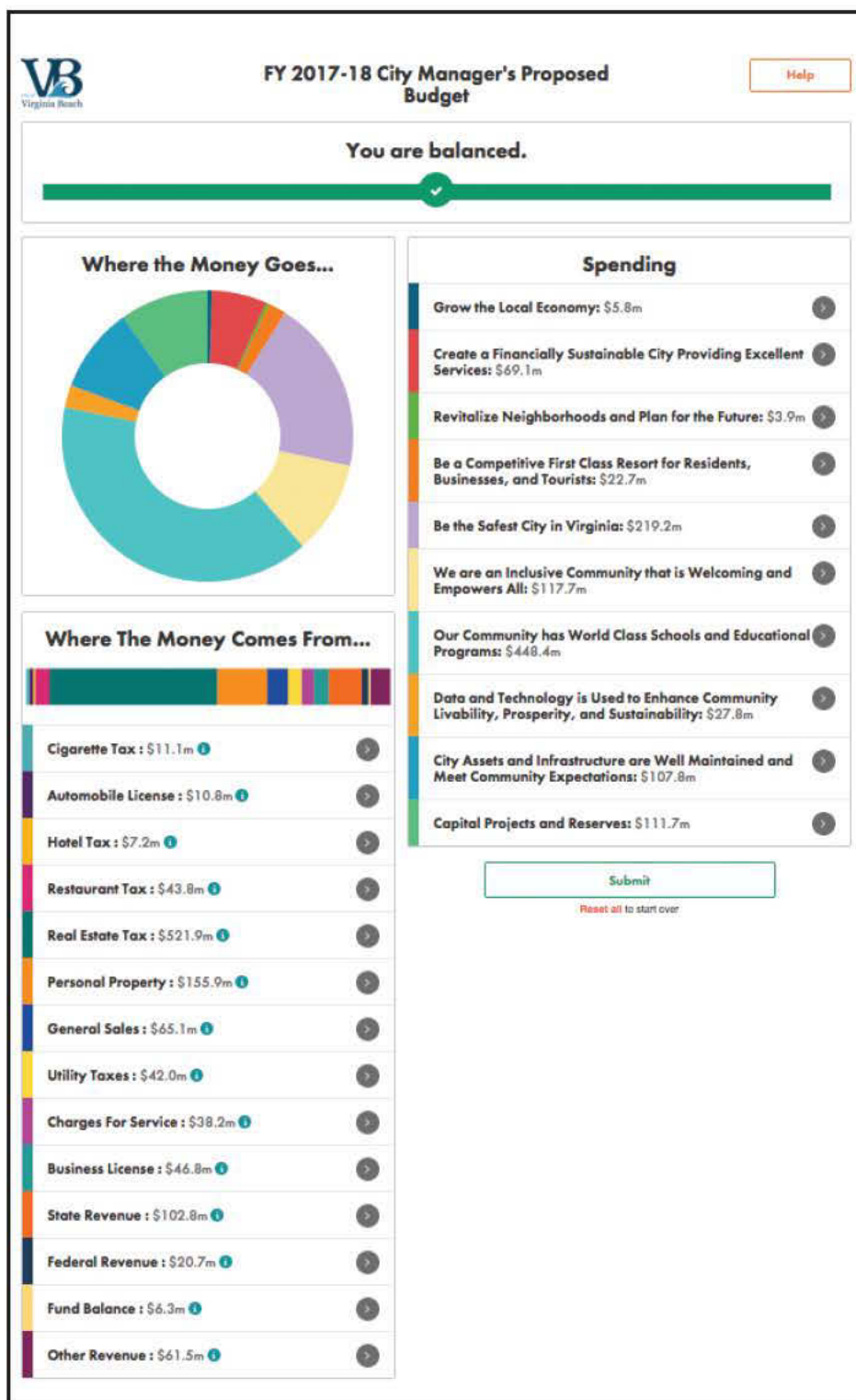
Balancing Act is an interactive website that allows users to try their hand at allocating funds while requiring them to balance spending and revenue. This is all done online through a website created specifically to meet the city's needs.

"We're constantly trying to improve our citizen outreach, particularly with the budget process," Virginia Beach Budget and Management Services Administrator Jonathan Hobbs said. "We host plenty of town halls on the topic, but you only reach a certain segment of the population through meetings in a physical location. We wanted to give people another vehicle to engage, and that's what Balancing Act does."

Designed to open citizen's eyes to the challenges faced when creating a budget, the tool sparks a conversation between residents and local officials about how money should be divvied up amongst the needs of the city.

"Sometimes when you say \$1 billion, it seems like a large number," Hobbs said. "But when you break it down and see what it takes to run a municipality of this size, it puts that number into perspective. People have learned a lot about the budget process through this; it's sparked conversation."

The website features a big circle chart with bold colors outlining each of the city's needs, including local economic growth, capital projects, a rainy day fund and taxes on local amenities such as hotels, restaurants and ▶



LEFT: Virginia Beach, Va., has welcomed its citizens to get involved in its budget process through the use of Balancing Act, an interactive website. The only catch is citizens have to make sure their suggested budgets are balanced before hitting submit. (Shutterstock.com)

ABOVE CHART: Pictured is the screen that welcomes residents to Virginia Beach's Balancing Act interactive website. Balancing Act has enabled the city to become more transparent. (virginiabeachva.abalancingact.com)



Education is another area where residents can suggest allotting more funds. (Photo provided by Virginia Beach)

real estate. Users may click on any item in the budget and decide to raise or lower the allocation to meet their desires. When they're done, so long as the budget is balanced, they have the option to submit their suggestions to the city for consideration.

Virginia Beach has used Balancing Act for two fiscal cycles. The website is rolled out when the city budget is presented to council members in March, and citizens have almost two months to play with the numbers and submit feedback to officials.

"One of the best things about Balancing Act is it doesn't allow you to submit an unbalanced budget," Hobbs said. "Balancing Act is a teaching tool that allows people to get involved and learn more about the budget, but it also allows them to engage and give that feedback to the city council."

Over the last two budget cycles, the site has been viewed nearly 5,000 times and 128 budgets have been submitted. Hobbs said submitted budgets are taken seriously and citizen feedback is important.

"A week or two prior to the budget vote, we compile the information from the website and the city council has an opportunity to review it," Hobbs said. "This site is one of a multitude of ways citizens have to interact with city council, but (it) hits a group of people who might not ever engage in a public setting."

Feedback from the website combined with citizen comments at town halls and other venues contribute to the council's ultimate decision regarding the budget. Most recently, Hobbs said, an outcry heard across all mediums prompted



Balancing Act educates residents on where funds go and where they come from. It also enables them to provide feedback on where tax money should go, from the city's fire and police departments to public works and capital projects. (Photo provided by Virginia Beach)



Residents can suggest allotting more funds toward "Be a Competitive First Class Resort for Residents, Businesses, and Tourists" through Virginia Beach's Balancing Act to promote the city's attractions. (Photo provided by Virginia Beach)

council members to decide to allocate more funding toward the improvement and reconstruction of stormwater projects across the city.

Another selling point of Balancing Act, Hobbs said, is the ability for local governments to remain completely transparent with their citizens and for citizens to understand the complexities of budgeting in a simple way.

"Being transparent is important to our council, and this lets us do that in an easy way," Hobbs said. "The website is very intuitive. That's what we liked about it. It's

a powerful tool, but it's not overly complicated and people can figure it out easily."

Cities looking to add a layer of transparency and citizen engagement they've been lacking might look into Balancing Act, Hobbs said.

"Based on our experience, this tool has been nothing but positive," he said. "The cost in relative terms is minimal for the tool that you're getting. Some people like to engage in face-to-face conversations and others prefer to play junior budget analyst online, and that's OK. Either way, we want to hear your input." ■

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By ANDREW MENTOCK | The Municipal

Since its inaugural year in 2014, the Public Technology Institute has awarded a few select cities and counties with its annual Tech Savvy designation. PTI offers this designation because it believes in the importance of recognizing those local government agencies that are using technology in a wise and effective manner — particularly, those agencies that have a plan for technology within their entire enterprise.

Even though competition for the award is stiff, Evanston, Ill., has won it every year.

"Our residents have a high standard for services and they expect that the city is leveraging technology as much as possible," Evanston's Chief Information Officer Luke Stowe said.

"Not only for delivery of services, but to be as efficient as possible with taxpayer dollars."

PTI is also impressed with how well Evanston's employees work together.

"Elected leaders, the city manager, departments and the IT department are enablers for technology to improve service delivery and

citizen engagement throughout the city," Dale Bowen, deputy executive director for program development at PTI, said.

In fact, the entire city is very encouraging when it comes to technological growth.

"(What) the city council and city management expect year in and year out is that we're implementing the best technology that's available to us at that time," Stowe said. "But also doing (it) in a responsible way, as well."

This type of citywide cooperation is key to receiving PTI's Tech Savvy designation.

"Part of PTI's mission is to raise the profile of the role technology plays within government service delivery," Bowen said. "Technology cuts across all areas — administration, public works, public safety — and it's the

LEFT: Located north of Chicago, Evanston offers views of Lake Michigan and is also home to Northwestern University, Rotary International's world headquarters and more. (Photo provided)

infrastructure that many city and county services depend on such as communication, data-sharing (and) information flow.”

There are several technological facets that PTI noted Evanston does exceptionally well. These include quickly providing employees with secure access to relevant information and services, maintaining long-term ownership of data and implementing sustainable technologies while also pursuing opportunities for green initiatives.

For years, Evanston has been one of the leaders when it comes to implementing innovative green initiatives. One initiative that it is looking to utilize more is sensors to determine air quality and pollution levels in and around the city.

“I think, even though we’re only a population of 75,000, we try and run with the biggest cities and counties as much as we can,” Stowe said. “We try to keep up and be competitive and leverage technology as best as we can.”

Stowe said that receiving the award each year is “validation that we are on the right path.” However, he knows that he and the city of Evanston can’t be complacent. Technology changes rapidly every year, so while Evanston is thrilled with their Tech Savvy designation, they know there is no guarantee that they will get it next year.

That’s why Evanston is already looking at what it can do to improve in the upcoming year. It is looking at technologies such as blockchain, augmented reality and virtual reality. Stowe, however, already has an idea of what he and his staff will implement next.

“I think AI, or artificial intelligence, is probably the thing that we’re most interested in right now,” he said. “It can help make city employees more efficient in their roles. I think it can also provide better customer service whether it’s through IT services, supporting our (over 1,000) employees or using AI to better serve the public through our 311 services.”

Stowe hopes that AI could help them better serve community members who are frequently on the go. AI can do this by automatically giving suggestions to problems, ►



Evanston’s 311 initiative includes a call center and online citizen support center to answer questions, provide 24/7 access to city information through a web portal, streamline citizen’s access to city services and more. Pictured is Sandra Hernandez, a 311 service desk officer. (Photo provided)



The Public Technology Institute noted that Evanston’s elected leaders, city manager, departments and IT department are enablers for technology to improve service delivery and citizen engagement throughout the city. (Photo provided)

providing frequently asked questions or even sending them to articles that can help provide quality self-service options.

For as advanced as this technology is, Stowe thinks other small towns should be encouraged by Evanston's technological success.

"Ten to 15 years ago, cities would have to spend a million dollars or more to have (technology this sophisticated)," he said. "Today government agencies can take advantage of new technology that's now affordable and easier to implement and manage going forward."

That's why a critical component of Evanston's success in implementing state-of-the-art technology is that it is very careful with what it spends its time and money on. Stowe and other members take great pride in trying to find the most efficient ways to spend money when it comes to the hardware and software that Evanston purchase.

However, Evanston does have one significant advantage over most other small- to medium-size cities: It is right next to Chicago. Evanston's IT employees take advantage of this proximity by having regular conversations with Chicago's IT and information personnel, even collaborating with them.

Additionally, Chicago sets the pace when it comes to what new technology Evanston decides to implement.

"Chicago is arguably the best or one of the best cities in the country at using open data and predictive analytics and data analysis to better deliver services," Stowe said. "And there's no question that being next door to that puts extra emphasis on what we're trying



Evanston, Ill.'s, proximity to Chicago has encouraged it to adopt new innovative technologies that have earned it a Tech Savvy designation from the Public Technology Institute for three consecutive years. (Photo provided)

to do with open data. Obviously, we're not at their level, but we're definitely trying to compete as much as we can on a smaller scale."

As the years go by, technology advances further and faster than ever before. In order to keep up, communities like Evanston are always thinking one step ahead. And as long as they are, PTI will be there to recognize them as Tech Savvy in order to encourage other communities to do the same. M

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*Drones are able to travel over all types of terrain and provide vantage points that wouldn't be available normally.
(Photo provided)*



Acting on drone technology today can save lives tomorrow

By ELISA WALKER | The Municipal

TECHNOLOGICAL ADVANCEMENTS not only help first responders work more efficiently, but also keep them safe while on the job. Drone technology is ever changing, having made strides in the past few years, but its fluctuating nature hasn't stopped fire and police departments from experimenting with it. The primary use for the drones has been for search and rescue cases. The technology cuts the search time down significantly and lets first responders act more quickly.

Technology in fire departments

Fire departments have been using drones for search and rescue cases as well as checking for hot spots, which can be difficult to find at ground level. Bargersville, Ind.'s, fire

department used a grant to purchase a drone with various cameras to attach. The different cameras are special; some are designated for daytime to get good pictures and videos from an aerial view while others are used at night to display heat signatures, making it easier to track people.

Before investing it's important to outline what the drone will be used for in the department, which will help determine what kind of technology would be appropriate for those operations. Insurance is another factor to consider when adding new field technology to the department.

"There's a million different uses for drones," explained Chief of Training and Safety Eric Funkhouser. "Every day you find new ways to use it. The drone even has a way to carry a

life jacket to someone in the water. We use the drone to search large areas a lot faster than before. We can search a whole field in minutes with 10 people in the field, walking it, but the drone can do a quick scan and be done."

Bargersville's most recent case in using drones was assisting its neighboring departments by helping locate a missing person who was experiencing medical issues. Drones have also been used to survey damages from natural disasters, have been reported to help in search and rescues, determine how disasters like wildfires will spread, as well as assist emergency management, crew resource management and water rescue operations. They can be deployed within a building to check for survivors and pinpoint their locations while mapping safe paths for them to



Having the ability to carrying and deliver resources when needed, drones can assist first responders in a variety of ways, such as transporting water or life jackets. (Photo provided)



Bargersville's fire department had a smooth certification process because of the consulting company, SkyFire, which was very responsive regarding questions or concerns the department may have had. Even after fees had been paid, members of the department can still call and ask questions. (Photo provided)

take. Drones can also help firefighters see if water is hitting the necessary spots in a fire.

"Really the initial startup is the hardest part for any department," Funkhouser said. "You can't just buy it and start using it legally so we contracted SkyFire Consulting. They assisted us and we used them to get our certification through the (Federal Aviation Administration). That isn't an overnight process. The biggest challenge was waiting to get all of that started. The best money we spent was

working with that consulting company. They helped us on a daily basis."

He added, "I would recommend looking into a consulting group. You can look through all the paperwork and submit it yourself, of course, but it was a nice thing for us. They were able to tell me exactly what we needed, when and then submitted it for me. They'd explain the process. Once we got approval, they walked us through and trained us on the drones as well as the rules and regulations. It



Bargersville's thermal imaging camera helped its fire department quickly locate a missing person with medical issues. Since Bargersville Community Fire Department is one of the only departments with drone technology, it is able to assist neighboring counties and departments in times of need. (Photo provided)



While the task of becoming certified to use drones can be overwhelming, the payoff of having this advanced technology is in how many people have been helped. (Photo provided)

was money well spent with everything they taught us. It made the process very smooth."

Police departments using drones for safety, not enforcement

When it comes to police departments, citizens are generally more concerned in terms of law enforcement and privacy issues. In the rural mountainous area of Stafford County, Va., the sheriff's department's drone technology was more openly accepted.

"It's been very positive in dealing with citizens," Captain Ben Worcester said. "There will be some citizens who will have issues with privacy and civil liberty concerns, but some have come to bat for us. They've seen what it can do to help the community. The primary usage is for public safety rather ►

than law enforcement. We have a big emphasis on ground search and rescues for an elderly person with Alzheimer's or young children. We use it to find people who wander off and are in immediate danger."

Those within the department have been pleased with the way they approached the certification process and building the new program. While the department was fortunate enough to utilize its asset forfeiture fund for the program without using tax dollars or grants, Worcester commented that perhaps he would've made the budget larger as technology has been rapidly changing and new pieces are becoming readily available.

"One of the most notable cases we used a drone in was a multiple armed robbery suspect who fled from a deputy in a vehicle and went on pursuit," Worcester commented. "The person slid into a residential area and bailed out on foot. The drone was deployed in total darkness. It ended up being a 10-hour manhunt in a thick wooded area. The drone found the suspect four different times before the final apprehension occurred. If it wasn't for the technology, then suspect probably wouldn't have been captured."

Jumping over inevitable hurdles

There are hurdles to jump over to attain proper certification, but drones help departments work smarter — not harder. The certification process is extensive and departments need to remain informed on current rules and regulations set by the FAA. Departments need to be familiarized with their airspace jurisdiction to avoid congestion if airports are present. Ensuring a safe flight with other air traffic is important, often requiring knowledge of aviation lingo and vocabulary to avoid any possible miscommunication.

"When we first started, we didn't have authorization to fly at night time," explained Funkhouser. "Then two months later we got it. Rules and regulations change almost daily. In six months we've already gone through a lot of changes so I can't even imagine what the next two years will hold."

Stafford County did not invest in a consulting company like Bargersville, requiring it to research and educate officers on the FAA rules and regulations. Self-educating may seem tedious but it does make the certified officers much more thorough in understanding how everything will work



Search and rescue missions are one of the primary reasons fire and police departments are looking into drone technology. (Photo provided)



Getting an aerial view can be beneficial in multiple ways, whether its surveying damage or just getting interesting shots of the city. (Photo provided)

together. Researching the technology as well as the rules can be difficult as they are altered often.

While new drones are streaming into the marketplace and new camera features are emerging, these rapid technological advances shouldn't prevent fire and police departments from taking advantage of what's available to them in the present. Securing funding for technology may be

difficult, but there are many opportunities for grants.

"I don't know when this is going to stop changing so I think now is the time to act," Worcester said. "The technology that exists today is going to save lives. By waiting, you're not helping the community, in my opinion. With this technology you'll find people who need to be found. That's enough reason to act." ■



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Mercy's Virtual Care Center provides telehealth services and is a part of the Mercy Hospital network, which is a significant employer in Chesterfield, Mo. (Photo provided)

Chesterfield, Mo.:

Location drives growth

By LAUREN CAGGIANO | The Municipal

Chesterfield, Mo., may be a small city, but what it lacks in population it makes up for in economic development and growth.

Chesterfield is located about 25 minutes west of downtown St. Louis, along the Interstate 64/U.S. Highway 40 corridor. The city was formed in 1988 and has grown to almost 48,000 residents today. With that population growth comes a need for facilities in which people can live, work and play.

Libbey Tucker, Chesterfield's assistant city administrator, said the city has seen steady economic growth in the past three or four years. The retail sector, in particular, has ballooned. According to Tucker, the population's high median income of \$92,571 and average consumer spending of \$1.1 million

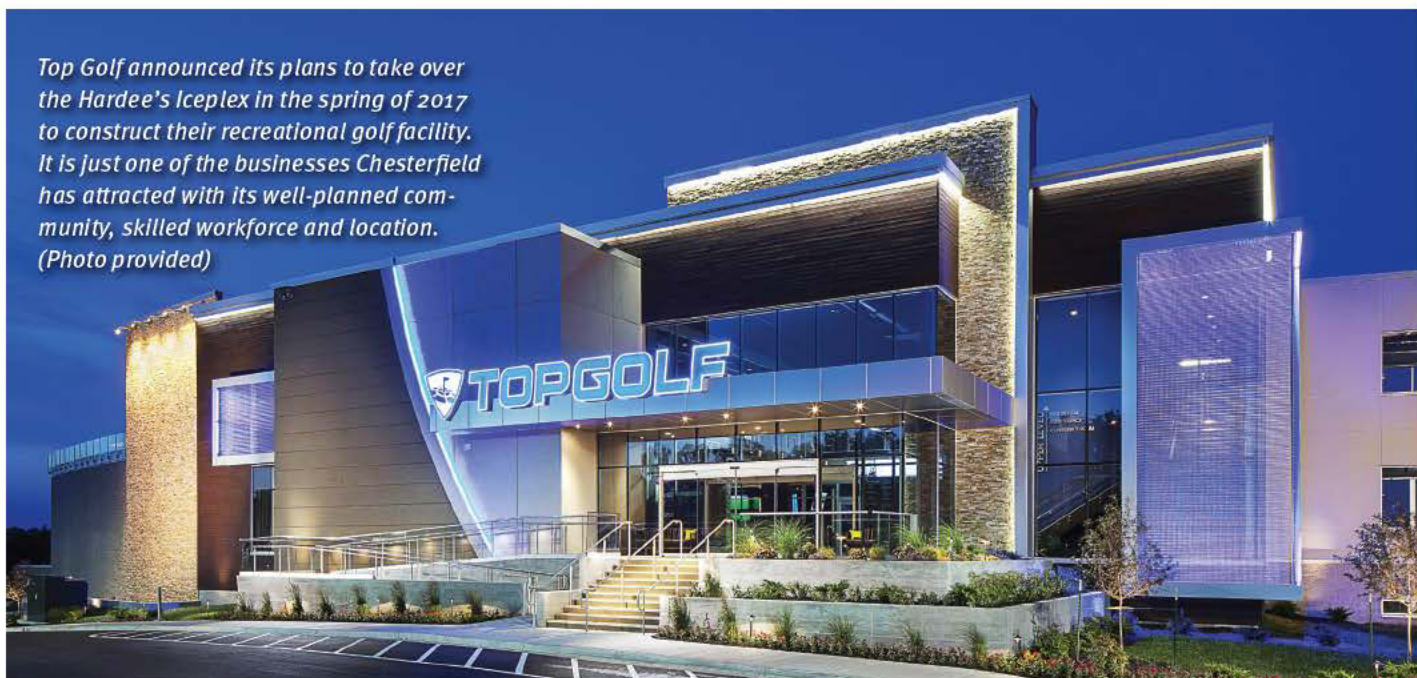
within a 3-mile radius of city-center make Chesterfield attractive for retailers.

If past success is indicative of future growth, retailers are in good shape. The Chesterfield Valley, located in the city's western corridor, adjacent to I-64, is filled with retail, office, light industrial and warehouse facilities in addition to hotels. Businesses in the Valley comprise 44 percent of licensed businesses within Chesterfield, according to data supplied by the city. The Valley is home to Spirit of St. Louis Airport, located on 1,500 acres and home to 150 different businesses, employing an

estimated 4,000 people. Chesterfield Commons, known as the longest retail center in the country, contains more than 2 million square feet of retail space.

With retail activity comes revenue in the form of sales tax. Businesses in the Valley generate \$7.4 million in sales tax for the Parks Sales Tax Fund and Capital Improvement Fund for the city of Chesterfield and an estimated additional \$2 million in utility taxes and associated fees, according to that same data. Additionally, the Valley generates \$8 million in sales tax that goes in the county's sales tax pool that is distributed to cities based on their population. Chesterfield received approximately 6.5 percent (\$520,000) of that \$8 million in 2016. Another \$15.1 million and \$33.8 million is generated

Top Golf announced its plans to take over the Hardee's Iceplex in the spring of 2017 to construct their recreational golf facility. It is just one of the businesses Chesterfield has attracted with its well-planned community, skilled workforce and location. (Photo provided)



and distributed directly to Saint Louis County and the state of Missouri, respectively.

Of course, this success is not in a vacuum. Chesterfield's activity is due to a perfect storm of sorts.

"Our growth has a lot to do with location," she said. "We are located along the highway, which means easy access for shoppers and workers to get on and off the highway," she said.

Speaking of access, the city has also made a point to serve young families and older residents alike through its parks and recreation programming. For example, Chesterfield Amphitheater in Central Park holds 4,000 people. They host outdoor concerts throughout the summer, which Tucker said are consistently well attended. Another event, the annual Taste of St. Louis, draws a wide audience and has put them on the map. Known as "The Ultimate Food Experience," it's a three-day festival that offers foodies from around the region the opportunity to sample delicious food in a wide array of culinary delights from the region's finest restaurants, along with live music.

Entertainment options are a proverbial feather in the city's cap, but it's the jobs that keep residents there. Fortunately for employers, Tucker said "it's easy to find quality workers," because the population tends to be highly educated. She added that Chesterfield is home to several tech firms, both emerging and established.

The healthcare business is exploding everywhere, and Chesterfield is no exception. St. Luke's and Mercy Hospital are significant employers in the area. Mercy's Virtual Care Center provides telehealth services. The VCC is the command center for the nation's largest electronic intensive care unit and other telehealth services, including telestroke, Nurse OnCall and physician teleconsults. Other plans on this site include expansion and consolidation of Mercy's office headquarters and an outpatient center.

The city is also bullish on a few projects in the works. Bunge, a food grain commodities trading company and ingredient maker, announced plans in March to construct a 145,000-square-foot North American headquarters facility along the I-64 corridor. This \$48.5 million project will retain 550 jobs in the region and add over 200 jobs in the coming years.

Tucker said another win for the city was the announcement that Pfizer and a development partner will construct a new \$200 million research campus in Chesterfield Village at the corner of Olive and Chesterfield Parkway West, adding 80 jobs for a total of 625 employees. Another high point for the city was when Top Golf announced its plans to take over the Hardee's Iceplex in the spring of 2017 to construct their recreational golf facility.

Other companies have identified Chesterfield as an attractive city for relocation.



Pfizer and a development partner will construct a new \$200 million research campus in Chesterfield Village at the corner of Olive and Chesterfield Parkway West, adding 80 jobs for a total of 625 employees. (Photo provided)

Solid Gold Pet moved their headquarters from Greenville, S.C., into existing space. The holistic pet food company will have 25 jobs in Chesterfield and 50 company-wide, while making a \$100,000 investment.

All of this would not be possible without forward-thinking governance. The city and private entities have been responsive in growing alongside the needs of its residents — an example other municipalities can follow.

"Having a well-planned community is important, as is leadership that can see beyond the now and (envision) what might be," said Tucker. ■

Small Iowa cities seize grant opportunities

by SARAH WRIGHT | The Municipal

Cities of 5,000 and smaller in Iowa have been given an unique opportunity to address abandoned commercial and public structures through the Iowa Department of Natural Resource's Derelict Building Grant Program, which was established in 2011. This program offers the financial assistance communities might need to improve the appearance of their streets, revitalize local economies and alleviate the environmental concerns abandoned structures can pose — such as asbestos.

"We've had (the Derelict Building Grant Program) in place for six years now," Scott Flagg, with the Iowa DNR, said. "We've had 199 applications and been able to fund 115 projects."

Using funding from the DBGP, cities are first able to investigate the amount of asbestos present in a building; determine the physical characters and stabilities of their structures by completing structural engineering assessments; and abate identified asbestos. These projects can then reapply for more funding for the following year for additional program-related tasks like building removal or renovation.

Landfill diversion is a major goal of the program, and it is promoted by incentivizing cities and towns to recycle or reuse building materials. DBGP does this by reimbursing 50 percent of demolition and renovation costs based on the percentage cities reuse/recycle with a cap of \$50,000.

"We've reimbursed \$1.8 million and diverted 47,000 tons of construction materials, like brick, wood, concrete, etc., and 593 tons of asbestos," Flagg said. While being environmentally friendly, this diversion has also saved Iowa communities \$1.5 million in landfill disposal costs.

"Once we can get the message out to folks, they embrace it and try to bring (similar efforts) into other areas of their cities," Flagg said. "It's been a huge success."

For Flagg who is not from Iowa, the program has been a unique way to learn the state's geography and its 99 counties, though he said so far the DNR has only had projects in 60 counties; however, it is a goal to expand to those remaining counties. Iowa DNR is also looking into additional programs to help communities, with Flagg commenting that a program to prevent buildings from becoming derelict in the first place is being considered.

"It's been a lot of fun helping all of these communities," Flagg said, commenting that they often have very passionate people who get the ball moving. "Each of these towns need a local champion."

Once momentum is built, Flagg said many of the communities are addressing their derelict buildings and choosing to fulfill local needs, whether by renovating or tearing them down to make way for something else. For instance, this past August, 18 communities were awarded grants, totaling \$350,000. Their projects



This city-owned building in Preston, Iowa, had been vacant for years and will be undergoing remodeling efforts throughout November to become a business incubator thanks to grant funding through the Iowa Department of Natural Resources. As the former clerk's office, Preston was plotted around it, making it important to improve the building. (Photo provided)

The interior of Preston's future business incubator awaits remodeling. This will entail installing drywall and making it wheelchair accessible. The city tentatively hopes to have an open house for the finished project during the last weekend of November. (Photo provided)



included not only asbestos and structural assessments and asbestos abatement, but also major goals and improvements, from a multi-purpose theater to more senior housing and land for development.

For the cities of Preston, Tabor and Carlisle, Iowa, which were among those 18 communities, DBGP gave them the push to satisfy their own communities' needs.

Preston: Incubating business

Preston had an approximately 700-square-foot brick building that had been vacant for years in its downtown. City owned and once serving as the former clerk's office, something had to be done with it. Patti Hoffman, a Preston City Council member and a Preston Growth and Development team member, said both demolition and restoration were considered as options. She, however, completed the grant for restoration first, spurred by findings from an Iowa Economic Development Authority walkabout assessment of Preston's downtown.

"Our Main Street has taken a couple hits," she said, noting they now hope to get the right vendor in the building by turning it into a business incubator, an idea she learned about from another city. "I'm excited at the opportunity to welcome a new business. There are a lot of costs in that first year for new businesses — to have free rent that year is great."

Prior to realizing this dream, however, Preston used the phase one grant to make sure the building was not full of asbestos and structurally sound before any money was put into it with a remodel. After it cleared, she pursued further grant funding through DBGP to develop the business incubator and was successful.

"Scott Flagg has been phenomenal. He is my hero," Hoffman said, sharing how he helped her and Preston through the DBGP process and found resources for her small city. "We would not be where we are without his expertise and support.

"It's so exciting," she added, noting the city has embraced DBGP's landfill diversion goal by finding items in nooks and crannies to recycle and reuse, including a furnace.

As part of the remodel, which kicked off in October, the city of Preston will be working with a lot of skilled volunteers to drywall the building and make it wheelchair accessible while keeping its old vault with its arched



ABOVE and BELOW: Tabor, Iowa, tore down a derelict brick building to create space for a new library, which has been in the planning stage. The yellow house, visible in the after photo below, is currently where the library is housed; it will be taken down once the new library is built. Proposed photo below right. (Photos provided)



VIEW LOOKING WEST FROM MAIN

ceiling. The goal is to complete the remodel in November with an open house the first weekend before December.

"We have not had formal requests but have had several parties express interest," Hoffman said of potential businesses. She hopes to have a business in sometime during December.

Hoffman highly recommended other cities get involved in organizations within their own states. She said, "Networking has helped our city realize grant awards like the (DBGP) and a KaBOOM! grant that sparked the idea for our new playground that opened in May 2017 and more."

Tabor: Making way for a new purpose

Tabor faced a similar situation to Preston: a dilapidated building right on Main Street. "It'd been vacant for probably 30 years or 25 years," Jennifer Williams, a city council member who is also involved in Iowa's Hometown Pride program. "I learned about

(DBGP) through Hometown Pride, and once I learned about it, I brought it to the council's attention and pushed to take advantage of it."

Tabor, however, faced a challenge because it didn't own the building that had once been a restaurant. "The owner wasn't local and didn't care how it looked, only putting in the bare minimal effort," she said.

The city did receive permission to complete the phase one and two DBGP grant from the building's owner, which included surveying the building's structural integrity and testing for asbestos, which it didn't have. "We looked at a remodel, but the cost was far more (than demolishing). Structurally it was just not sound."

The city decided to purchase the building and demolish it to open the way for a new library, something it had been planning. Williams noted it was a long process, but once the purchase was complete, she applied for the additional funding to demo the building and was successful. The building was then demolished in September.

"It was the first building people saw coming through on Main Street," Williams said, noting one business owner had decided not to buy a location in Tabor because of the ►

dilapidated building across the street. Once this got back to the city council, she said they moved very quickly.

Tabor has also espoused DBGP's landfill diversion goal by sending iron to a town with a scrapyard, salvaging old rafters to be repurposed and allowing bricks to be used as fill on properties. "We diverted a lot from landfills," Williams said, though she added the city is still gathering data to determine how much was diverted. "We also used GovDeals.com. The building was full of a lot of junk. They sent out a representative who taped it off and assigned lots. It cleared out a lot of the building — all the tables, dishes. It worked out very well, too."

As for DBGP, Williams said, "It gave us an incentive to push forward once we knew the grant opportunity was there. It helped that there were deadlines to push the council, push the community ... For the most part, it was a positive experience. I would recommend it."

Carlisle: More space for downtown visitors and business

Faced with limited downtown parking, Carlisle looked to DBGP to aid in funding its demolition of a derelict building in its downtown area. "It was a white cinder brick building next to a grassy area and building that used to be a gasoline station," City Manager Andrew Lent said, noting the latter two properties had been donated to the local chamber of commerce for its use.

The city purchased the cinder block building in November 2016 and had it inspected for asbestos prior to the purchase. In December, the



ABOVE and BELOW: With grant money through Iowa DNR's Derelict Building Grant Program, Carlisle, Iowa, demolished this white cinder brick building to make way for more parking and the launch of a park/greenspace/bike hub area. (Photos provided)



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Demolition was completed in Carlisle on Aug. 28. City Manager Andrew Lent estimated during the process that they diverted 89 percent of materials from the landfill. (Photo provided)

city contracted to have the small amount of asbestos present removed. Lent said after the city leaders became aware of DBGP and its landfill diversion reimbursement, they opted to apply for the grant for the building's demolition.

"We took metal from the building to a local metal recycler," Lent said. "Concrete was used to reline our sewer lagoons—to help

prevent erosion." He estimated that about 89 percent of materials were diverted from the landfill.

Demolition work was completed Aug. 28, and the city has kept the building's concrete slab to be used as a parking lot area to support a park/greenspace/bike hub area. Carlisle Parks Department has planned several events in the area while chamber is launching a bicycle-friendly community marketing push to businesses, touting the city's newly constructed 3.2-mile nature trail. By bringing parks and trails downtown, Carlisle hopes to spur economic development by increasing traffic to downtown businesses.

"Recently, we have had one restaurant open up and another expand," Lent said, noting there is still one empty restaurant storefront in the downtown area. With the added parking and addition of a trailhead, it is hoped that opening will be filled quickly.

Of DBGP, he said, "It's one of the easiest grant processes I've done. Our project was pretty basic and we only had to bid out demolition cost (since the city had already removed the asbestos). It's great for smaller cities." ■

Currently, DBGP still has \$50,000 available for asbestos assessment, asbestos abatement and structural engineering assessments. Cities of 5,000 and smaller can also enter the next funding round by submitting their applications by April 4, 2018. For information, contact Scott Flagg at (515) 725-8318 or Scott.Flagg@dnr.iowa.gov.



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Buffalo Green Code moves city toward modern development

By NICHOLETTE CARLSON | The Municipal

Buffalo, N.Y., has spent the last seven years developing and polishing its new Green Code. This will be a development strategy based on the city's comprehensive plan and plan for the future of Buffalo by focusing on four fundamental principles: fix the basics, build on assets, implement smart growth and embrace sustainability.

The Green Code will then translate these principles into a land use plan that will be used to guide the city's physical development over the next 20 years and provide an update to the city's 60-year-old zoning code.

According to information from Nadine Marrero, director of planning, "Buffalo is one of only three cities in the U.S. to toss out its antiquated zoning and land use codes. Our Green Code represents the best ideas, creates more modern development

standards and preserves and builds upon Buffalo's strengths as a great 21st century city that can compete head-to-head with any city in this country."

The mayor's office of strategic planning continues to oversee the development of the Green Code. This has included utilizing specific plans for waterfront and brownfield areas as well as creating a single, citywide urban renewal plan for Buffalo's homestead program.

A citizen's advisory committee and technical advisory committee was also appointed

LEFT: After years of revising the Green Code, Mayor Brown held a signing ceremony on Jan. 3, along with the Buffalo Common Council, to celebrate the approval of the unified development ordinance. (Photo provided by the city of Buffalo)

RIGHT: An infrastructure improvement project in South Buffalo was announced in July by Mayor Brown, State Senator Timothy Kennedy and South District Council Member Christopher Scanlon. This project will support growth and reinforce the goal of making a more vibrant community that is accessible to everyone. (Photo provided by the city of Buffalo)



by Mayor Byron W. Brown to ensure that the public's voice was heard and to provide input on any technical issues.

The components

The goal of the Green Code is to consider land use strategies from a plethora of planning initiatives that frame Buffalo's development and combine it into a code. This framework is based on initiatives that express the community's perspective of the city's comprehensive plan.

Brownfield opportunity areas present recommendations for both land use and proper zoning after analysis of brownfield areas. These areas are former industrial or commercial sites in which potential environmental contamination may affect its future uses.

A local waterfront revitalization program works to propose development projects on both land and water along the coastal areas.

New urban renewal plans will allow for the termination of Buffalo's 30 existing plans. Relevant portions of the existing renewal plans will then be incorporated into a unified development ordinance. Having a citywide urban renewal plan will help identify eligible areas for the city's homestead program, which allows the sale of city-owned vacant property for one dollar.

These three programs will then be combined into the land use plan that can be used as the physical development guide to grow the economy, strengthen the city neighborhoods and repair the environment.

The land use plan and all of its individual parts will then form Buffalo's unified development ordinance. This ordinance is what will replace the city's previous outdated zoning code and other regulations that control development and present new form-based standards on zoning, subdivision, signs and public realms.

The generic environmental impact statement takes all of these facets into account and presents what the cumulative environmental impact will be for Buffalo after adopting the Green Code. In accordance with the state environmental quality review act, this statement includes all components of the Green Code. An opportunity for community members to submit official comments on the Green Code as a whole, or any of its components, is also included as part of a public review.

The process

Mayor Brown originally introduced the idea of the Green Code on Earth Day in 2010. It was officially filed with the Buffalo Common Council on Oct. 22, 2015. The draft of the generic environmental impact statement was then accepted by the common council on Feb. 16, 2016.

An updated Green Code was released by the mayor and the common council on Sept. 15, 2016. This included the revised urban development ordinance and a public review process, which took 10 months. Hundreds of submitted written comments, 20 public meetings and two public hearings were a part of this extensive process.

The latest version of the Green Code was scheduled for review by the common council on Dec. 20, 2016, along with the potential to repeal the existing zoning ordinances.

After receiving the documents in October 2015, the common council adopted portions of the Green Code including the unified development ordinance, four brownfield opportunity plans and the land use plan on Dec. 27, 2016. In that time the code went through dozens of revisions with over 240 meetings and 6,500 residents participating.

Being the first zoning rewrite in over 60 years, the Green Code was designed to support and strengthen the city's economy as well as promote mixed-use neighborhoods that provide residents with easily walkable streets. As Marrero shared, "The Green Code increases transparency and strengthens process ... It is a living document meant to evolve in the decades ahead to meet the needs and desires of Buffalo residents."

On Jan. 3, a special signing ceremony was held by Mayor Brown and the common council. The unified development ordinance became effective citywide on April 3.

Since April the greatest change has been removing minimum parking standards in an effort to move toward a more market-driven approach. What made a city great 60 years ago is no longer necessarily what makes a city great today. Marrero also relayed the information that "the Green Code embraces the future, implements the community's vision for today and gets residents excited for smart growth." ■



In the loop: GoWesterville keeps residents apprised of municipal projects

By JULIE YOUNG | The Municipal

When the residents of Westerville, Ohio, voted to raise their income tax rate to 2 percent in order to fund some critical infrastructure improvements in 2008, they did so under a few conditions. They insisted that all streets in less than “good” condition be improved to “good” or “better” within 12 years and that they be kept abreast of the projects so that they could keep an eye on their investment.

It was a message the city took to heart, and in order to fulfill its end of the bargain, it created GoWesterville, a communication campaign designed to help residents and visitors stay apprised of roadway, infrastructure and capital improvement projects going on throughout the city.

“We wanted to be as transparent as possible in order to let them know where the construction is, how it is going, what it is costing as well as a timeline for completion,” Christa Dickey, community affairs administrator for Westerville, said. “We tell them everything.”

Planning for progress

Westerville is not unlike any other city in the U.S. — long-term improvements require short-term inconveniences, and in order to help the public navigate those changes and

celebrate those accomplishments, project manager and civic engineer Nate Lane came up with the idea of GoWesterville, an easy-to-use application that allows residents and visitors to see what is happening and where so that they can plan their routes accordingly. MurphyEpson, a Columbus-based public relations firm, then created the campaign for the City of Westerville.

However, GoWesterville is more than an interactive map. It is information that not every citizen always has. According to the city’s most recent survey, 88 percent of respondents indicated that they were satisfied or very satisfied with the overall quality of the city services. However, only 72 percent of the residents indicated satisfaction with infrastructure improvements, which told city leaders that they had more work to do.

In order to address those concerns, GoWesterville not only tells residents where the improvement projects are, but also what they are and how this decision was made so that the public can understand the investments they are paying for.

Improving a city’s transportation network is more than simply resurfacing roads or widening the streets. Long before the community sees a “cone zone,” city planners, engineers and others must first conceive of and design the suggested improvements. They have to take into consideration the traffic forecasts, the needs and input of all users as well as the latest safety and environmental regulations. Naturally, this takes time, expertise and, of course, funding.

Once it’s time to get moving, new questions and concerns arise. How do you keep traffic moving and construction crews safe? Will utilities have to be moved? Asphalt replaced? Traffic signals upgraded? Will curbs have to be repaired, replaced or updated to comply with the Americans with Disabilities Act? Not everything can be done all at once, and the city must prioritize its projects and stretch the public dollars as far as it can. Initiatives such as GoWesterville allow the public to know what the projects

LEFT: Westerville, Ohio, created GoWesterville to keep residents informed on where funds from the 2 percent increase in income tax were going. The website shows what infrastructure improvements are underway and why they were selected. (Shutterstock.com)

are and where they are happening as well as how they are organized and prioritized so that everyone can understand the long-term benefits of doing it this way.


"In 2008, we promised to make improvements to our southern gateway corridor at State Street and Schrock Road. It was 30 years old, and although it was the primary gateway into the city, it was in the forgotten part of town. It was a multi-year project that was completed this summer, and thanks to GoWesterville, we were able to communicate more about this important project and others through the portal as well as the city's website, social media accounts, e-newsletters and eventually test alerts," Dickey said. "We have tremendous reach through this portal. It allows us to communicate with the public in a thoughtful, organized way."

Making an impact

Erica Charles, community affairs specialist for the city of Westerville, said ever since the GoWesterville portal was launched in April, the response from the public has been very positive.

"Residents seem to have a better understanding and warmer reception of the projects that are going on because they have easier access to the information. It's gone so well; we are looking to expand it to include other types of projects such as parks and bike trails as well."

As time goes on and the data comes in on how effective the app is, the city hopes to be able to share its success with other communities so that they can adopt it as a best practice in their own area. Dickey said they have already talked about GoWesterville in their professional organizations informally, and as the platform expands to include other projects that impact residents, she knows its popularity will continue to grow.

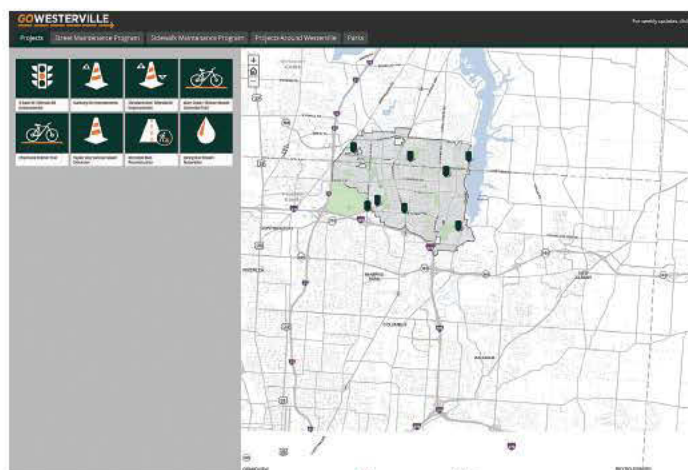
"I remember a time when there were no city pages on Facebook because no one had time to run them, but now everyone is communicating in new and exciting ways," she said. "Platforms such as these are a great way to get the correct information into the hands of the people so that they can be informed about what their community is doing and how it will affect them." 

Some of the projects that are highlighted on the GoWesterville platform:

- South State Street/Schrock Road Improvements
- Cleveland Avenue/Schrock Road Improvements
- Sunbury Road Improvements
- Alum Creek/Sharon Woods Connector Trail
- Parkview Avenue Sidewalk
- Citywide Street Reconstruction & Pavement
- Maintenance



The intersection of State Street and Schrock Road is one infrastructure project that took precedence as the primary gateway into the city. A multi-year project, citizens were kept apprised to its progress via GoWesterville. Pictured is the before and after of this intersection. (Photos provided)



GoWesterville not only tells residents where the improvement projects are, but also what they are and how the city made the decision to pursue that particular project so that the public can understand the investments they are paying for. (Photo provided)

Power hedging for public funds issuers

by BRIAN HODGE

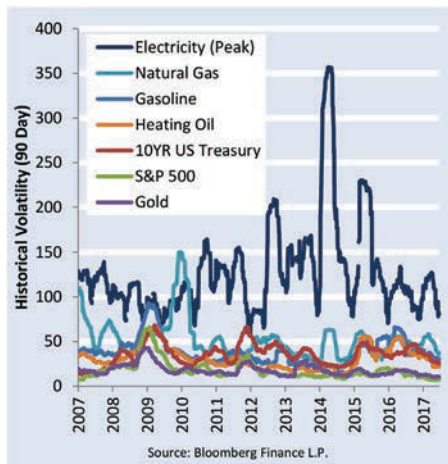
The cost of electricity can materially impact the “bottom line” and the budget process for many public funds issuers including local governments and tax-exempt 501(c)(3) organizations. The U.S. Energy Information Administration expects electricity prices to remain volatile and to continue to increase from 12.98 to 13.41 cents per kWh by 2018. Tax-exempt organizations rarely have room in their budgets to allow for price volatility commonly seen in power and other energy products.

To make matters worse, recent budget cuts proposed by many state and local governments make it more difficult than ever for municipalities to maintain balanced budgets. An unexpected price swing in the power market could force tax-exempt organizations with already strained budgets to make more cuts or risk disruption of essential services.

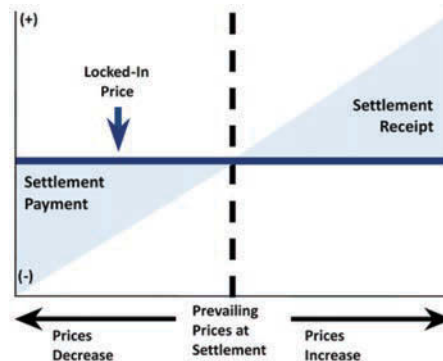
What can you do?

To assist in the budget process, tax-exempt organizations might consider implementing a power hedging program that creates a “price lock” on the cost of power. Power hedging involves stabilizing the price that a consumer pays for electricity over a specific time period. Financial professionals can develop a power hedging program to provide some budget certainty around the volatility in the power market.

A hedge can reduce the effect of price movements on an organization’s electricity bill, and it can provide a tax-exempt organization with more confidence in its electricity budget. While a tax-exempt organization may realize savings through the implementation of a power cost management program, there is no guarantee of savings; rather the purpose of a power cost management program is to provide budget certainty around volatility in the power market.



Over the past 10 years, electricity has been one of the more volatile energy commodities. (Source: Bloomberg Finance)



A power hedging program can reduce price risk and create budget certainty. (Graph provided)

When establishing a power hedging program, tax-exempt organizations should decide which hedging method best suits their needs.

What tools are available?

Producer Price Agreements: Many businesses and individuals already participate in producer price agreements with their electricity providers. By entering into a producer price agreement, a tax-exempt organization negotiates directly with the power provider to establish a fixed price for a specific time period. Producer price agreements are easy to implement. However, it should be noted that the carrying costs, delivery expenses and hedging charges incurred by the provider will all be passed on to the consumer. Furthermore, producer price agreements are proprietary. Data on producer price



Under a producer price agreement, an organization negotiates directly with the provider to establish a fixed price for power. (Graph provided)

agreements is not publicly available, and it can be difficult to determine if a fair market price was achieved.

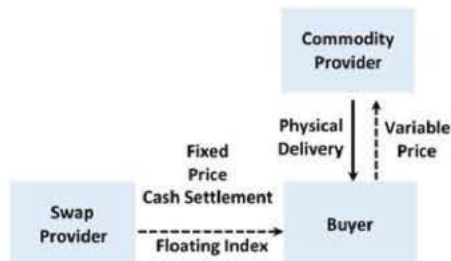
Exchange-Traded Futures: An exchange-traded futures contract allows buyers to lock-in the price of power, by purchasing a contract over an exchange. The price is determined by market participation (hedgers and speculators), and it reflects the spot price of power and future market projections. Since futures are traded on an exchange, they are highly liquid and generally have short maturity dates. While



Exchange-traded futures contracts are highly liquid and generally have short maturity dates. (Graph provided)


counter-party risk is limited by trading through a centralized clearing house, buyers and sellers of futures contracts are subject to daily variation margin which may require a tax-exempt organization to post cash to cover the daily change in the price of the futures contract.

Over-The-Counter Swaps: An over-the-counter swap is a contractual obligation between a swap dealer and a power consumer in which each agrees to exchange a series of payments based on the movement of a particular power index over a predetermined period of time. A swap dealer is typically a large financial institution like a bank or securities dealer. A tax-exempt organization pays fixed amounts to the swap dealer and in return receives variable amounts based on the movement of a market index. Swaps can be tailored to meet precise power consumption needs, and they can be structured to extend over much longer maturities than futures or producer price agreements.



Over-the-counter swaps can be tailored to meet precise power consumption needs. (Graph provided)

Summary

In the face of a volatile power market, a power cost management program can provide a tax-exempt organization with budget certainty. For years, it has been common practice for investors to hedge the price risk in everything from gold to the S&P 500 even though each of those is much less volatile than power. Maybe the time is right for you to use power cost management tools to protect yourself from price volatility in the power market. 

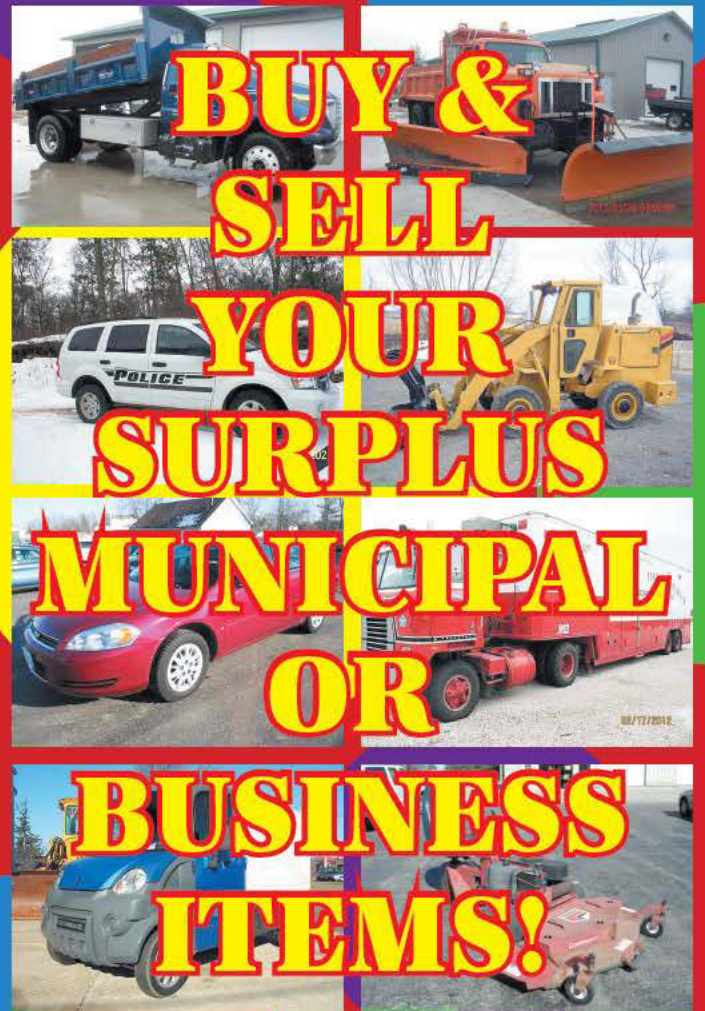
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Collaboration needed to address sea level rise



Natural coastal marshes provide erosion protection and coastal flooding benefits in addition to serving as a pollution buffer. Pictured is the Virginia Institute of Marine Science's Teaching Marsh. (Photo provided)



Volunteers plant marsh grasses on an unprotected beach. Coastal marshes can help protect against the effects of sea level rise. (Photo provided)

by CATEY TRAYLOR | The Municipal

For low-lying coastal cities, the global trend of rising sea levels is not something to be taken lightly.

By 2050, Virginia may experience about 24 inches of sea level rise. In North Carolina, the state's Coastal Resources Commission issued a report advising coastal communities to plan for up to 39 inches of sea level rise by 2100. The state of Florida has created an adaptation plan specifically in preparation of coastal flooding and sea level rise.

And those are just three examples located on the East Coast.

According to Virginia Institute of Marine Science researcher Molly Mitchell, the rate of sea level rise in Virginia is somewhere between 5 and 6 millimeters per year, which is almost twice the global rate.

"The 2 feet of rise in very flat areas by 2050 will mean that the tide will come in further each day. When you have houses built close to the water in low elevation areas, they're going to get water underneath them more frequently. That leads to small inconveniences, like stopped traffic or small basement floods," Mitchell said. "But the capacity of the city's storm management system is where real issues lie. If storm surges come in and the system isn't built to handle

it, areas that used to never be impacted by surges are now in the middle of it."

Additionally, Mitchell cited the economic impact sea level rise will have on coastal cities since waterfront businesses generate a large portion of revenue.

"Look at all of the industry tied to waterfront here," she said. "All of that industry is also impacted. The private impact is what this does to people's homes and belongings. The public impact is what this does to the economy."

Lawmakers in Virginia are not blind to the potential impact sea level rise will have on its cities. According to a study released by the Natural Resources Defense Council, Virginia is listed as one of the 29 states that were "largely unprepared and lagging behind" on planning for climate change at the state level, and that's where organizations like the Virginia Institute of Marine Science come into the picture.

VIMS has an advisory role in the state of Virginia and was approached as long ago as 2012 regarding concerns about sea level

RIGHT: The rate of sea level rise in Virginia is somewhere between 5 and 6 millimeters per year, which is almost twice the global rate. Pictured is a green infrastructure and storm surge inundation map of Virginia created by the Hampton Roads Planning District Commission. (Photo provided)

rise. Between work with localities to learn about their solutions and a cooperative partnership between VIMS, Old Dominion University and the College of William and Mary, significant work has been done to combat the state's poor standing in preparedness.

"We're trying to monitor and project future sea levels based on today's changes," Mitchell said. "We at VIMS put together a projection of current flood areas and what areas are projected to flood in the future. Then, the law and policy schools at the colleges look at the legal responsibilities of the localities versus the private homeowner."

Hot button issues include evacuating residents and how to alter policy for storm surge protection.

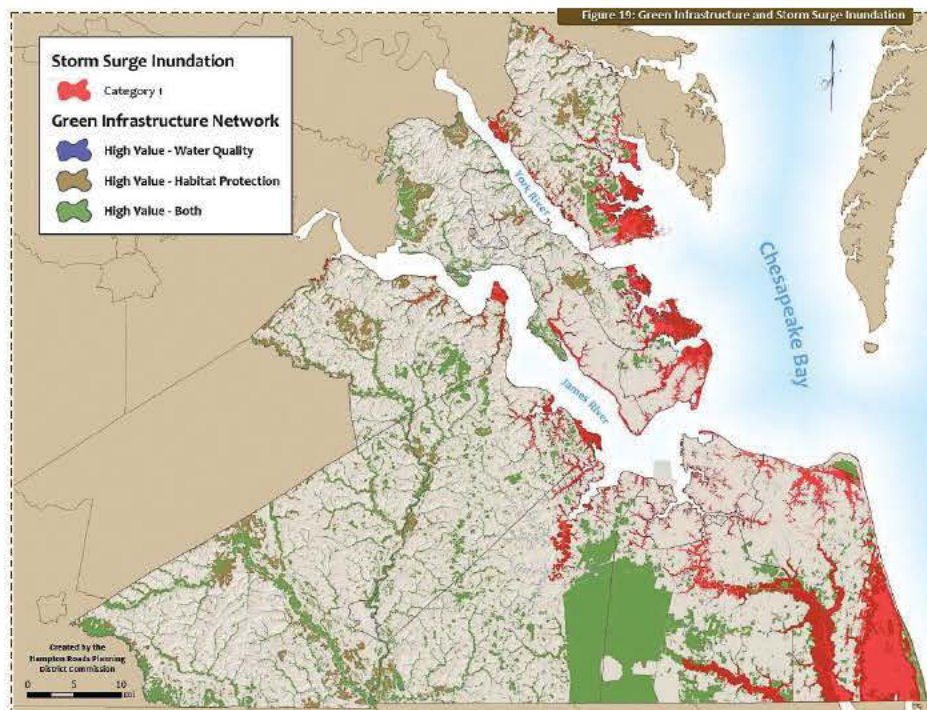
States battling rising sea levels share a common thread: Planning is key, and the plans tend to align similarly.

The Adaptation Planning Committee within the Department of Economic Opportunity in Florida has an extensive webpage dedicated to planning for coastal flooding and sea level rise. The goal, according to the site, is to "become more resilient to the impacts of rising seas over a period of time," and it shares strategies outlining protection, accommodation, strategic relocation, avoidance and procedures.

Additionally, a page dedicated specifically to redevelopment strategies and plans is included, specifically designed to "eliminate inappropriate and unsafe development in the coastal area when opportunities arise."

While all the planning in the world is a great start, nothing can get done without all the pieces falling perfectly into place, largely from a monetary standpoint.

"Adapting to sea level rise is difficult to do on a large scale," Mitchell said. "The cost of putting up levies in a locality is prohibitive. For homeowners, the cost of raising a house is prohibitive. There unfortunately aren't a lot of adaptations to those long-term solutions."



Pictured is the Haven Creek's elevated boardwalk in Virginia. With sea levels on the rise, states and localities will have to plan accordingly when it comes to coastal projects. (Photo provided)

The other struggle, Mitchell said, lies in deciding who is ultimately responsible for sea level rise preparedness: individuals or the local government.

"Do you protect an area the best you can systematically, or do you leave it to each individual property owner to pay for those efforts and adapt individually, knowing some won't be able to afford to," Mitchell said.

The answer, she suggested, lies in the collaboration between citizens, local governments and sea level rise experts.

"This issue needs to be looked at on all levels — individual property owners making decisions for themselves, localities making decisions for the localities, and localities and states collaborating to deal with water passages that lie between county lines," Mitchell said.

But for now, fear not, coastal city residents. "The good news," Mitchell said, "is we have a decent idea of where the sea level rises are heading, which gives us plenty of time to deal with these problems." ■



Encouraging economic development: **Improve marketing and communications**

by TROY KIDDER | TROY ... Pure Blue Creative LLC

One definition of a municipality is “a center for the exchanging of goods and services.” In other words, it’s people and money. Chances are you’re already doing a great job serving the people. You keep the roads repaired and clean, provide safe water to drink and use ... not to mention oversee safety services such as police and fire prevention. The list goes on and on.

All of these contribute to a foundation that fosters an environment of economic development and growth. That ought to be enough; however, there’s more to do: communications and public relations.

Not only do newsletters, websites and videos, done in excellence, improve your image and function within the community, they contribute greatly to the economic development of your municipality.

First, communication creates a “buzz” by making folks aware of all the great services provided by you and your team. Hey, if you don’t toot your own proverbial horn, how will they know? And it’s bigger than that: When people feel safe and the town is running smoothly, it will certainly blossom economically.

In today’s world good communication and marketing must be continual and take

ABOVE: Elected officials and city administrators strive to create an environment of economic development and growth. Communicate your successes using a professional public relations and communications professional, knowledgeable in different media platforms. (Shutterstock.com)

place through several different mediums in order to keep the economic fires burning. The great thing about the digital world is that it not only can benefit you locally, but internationally as well. On the Web, anyone can visit your town or city at any time.

Once again, it’s important to note that the medium is the message. Not all websites or videos are helpful. Websites must be well-written, well-edited and easy to navigate.



There should be clear, crisp photos of community members enjoying your safe and friendly town.

Videos should be no more than three minutes in length and skip the corny voice-overs. That's where it can really help to hire a professional firm that offers turn-key services, so you can stay on task with the literally hundreds of other things you need to do.

The value of this will pay continual dividends. Remember, enterprising people are constantly

require caution. These types of media simply cannot be done haphazardly if you have a high expectation of positive feedback. There is a professional art to social media and it should only be done as a small portion of the communication and marketing plan.

Social media can produce even more trouble than it's worth in some cases, including legal issues for towns, cities and schools, if not addressed properly. There are an awful lot of nonprofits, schools, municipalities and the like out there that think by just having a presence on social media they are in tune with the times. Chances are they are doing more damage than good.

Great municipalities don't just happen; they are planned. The same is true of communications and marketing. So as you continue to do an admirable job of serving your municipality, creating a safe environment for people to live and prosper, please keep in mind that communications must be ongoing. It must be done in excellence in several mediums, especially in today's digital

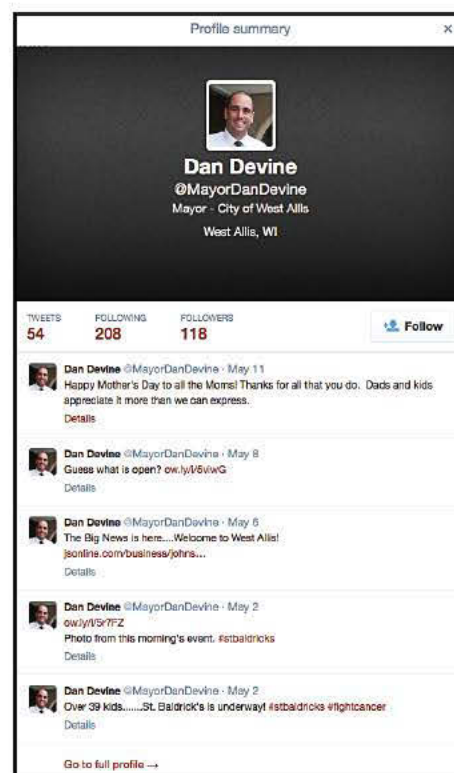
"When people feel safe and the town is running smoothly, it will certainly blossom economically."

looking for safe towns and safe schools to raise their kids, find good jobs and build businesses: places that have a flair for the future with a foundational understanding of everyday goodness. A well-produced website with a professional video can articulate this.

Social media, such as Twitter and Facebook, can help as well; however, they also

LEFT: Not only do high-quality newsletters, websites and videos improve a city's image and function, they also contribute greatly to its economic development. Create a "buzz" by making folks aware of all the great services provided by you and your team. (Shutterstock.com)

BELOW: Social media, such as Twitter and Facebook, can help articulate a city's desirability; however, they also require caution. A marketing and communications professional can ensure that these types of media are managed in a way that invites positive feedback. (Shutterstock.com)



world, or growth will be hindered and economic opportunity lost. All in all, the digital world offers great opportunity to promote your excellent community. **M**

Troy Kidder is a former assistant town manager, former school teacher and a communications and marketing professional. He serves communities across the country with communications and public relations solutions. His website is www.purebluecreative.com or contact him by email at troy@purebluecreative.com.



Downtown revitalization: *A boon for local economies*

By **BARB SIEMINSKI** | The Municipal

City sidewalks, busy sidewalks. Dressed in holiday style ...

Indeed, downtown city sidewalks are coming back into fashion all yearlong. And as increasingly more visionary municipalities shed their old downtowns' ashes, the fresh ambience they create is attracting people of all ages—benefiting businesses and cities on the whole. In “Regenerating America’s Legacy Cities,” a 2013 report from the Lincoln Institute of Land Policy, the authors say strong local leadership, a shared community vision, inclusive growth, creative problem-solving, crowd-sector collaboration and placemaking are the tenets of success for these types of revitalization efforts.

Boosting revitalization efforts

Shannon Haney, executive director of Main Street Batesville in Arkansas, gave some tips of incentives that may attract businesses to a new downtown locale.

“We’ve put a lot of work into paving the way for relocating or starting up a business downtown,” she said. “As a certified organization of (our) state’s Main Street Arkansas and the national Main Street

ABOVE: Pocket Park in Batesville, Ark., is a unique park space created out of an empty lot where a building had burned. Equipped with stage and electrical outlets, it serves as a free community event space for nonprofits and civic groups. It is also the location of the farmer’s market. (Photo provided)

America program, our district’s businesses automatically have a team of free consultants—an interior designer, an exterior facade designer, a historic tax credit consultant and a business consultant. Also, as a certified Main Street organization, we are to give out mini-grants each year to downtown businesses.”

Another resource is also available, with Haney noting, “A local bank, Citizens Bank, has started a grant program in addition to our own for downtown businesses, and they are also providing easier access to capital with low-interest downtown loans.”

In addition to funding improvements, Main Street Batesville and the city of Batesville host events and festivals all yearlong in the downtown area, attracting both residents and new visitors. Other means of



*Shannon Haney,
executive director
of Main Street
Batesville*



The Paper Chase Bookstore has been in existence in Batesville, Ark., since the '70s. In front of it are two new street-side flowerbeds — 48 now line the street. (Photo provided)



Glens Falls, N.Y.'s, revitalization efforts have attracted both residents and businesses to its downtown. (Photo provided)

attractions have been investing in infrastructure projects over the past four years.

"We've completed an all-new pocket park for community events like the farmer's market, and we're in the process of cooperatively building a new one," Haney said.

She added that another part of these building projects include working with the city to pave the way for loft apartments and lodging, which will be a huge boost to their local economy. The organization is also supporting local sustainable business practices with its plan to fund a series of customer relations workshops.

Haney said, "Through our associate organization, the Batesville Downtown Foundation, two remaining empty storefronts have been purchased and are being renovated for occupants. This is the only place in town that has an organization constantly working to bring people to your business doors for you."

Glens Falls, N.Y., is just beginning its revitalization journey after six months of planning and another three months of state review, said Ed Bartholomew, president of Economic Development Corporation of Warren County and the local administrator of the Downtown Revitalization Initiative.

"We applied for and won a \$10 million dollar award by the Capital Regional Economic Council in competition against other municipalities on Aug. 18, 2016. This competitive DRI grant is an initiative of Governor (Andrew) Cuomo's downtown revitalization program," Bartholomew said. "Though we are in early stages of the event, earlier efforts include utility reconstruction, streetscape improvements, individual building renovations, walkability and traffic improvements have been ongoing for approximately 10 years."

The effect of the award has heightened interest in Glens Falls' downtown, both from regional store operators and developers. For example, earlier this year Northeastern Fine Jewelry, which has three other stores, opened its fourth store in downtown Glens Falls, utilizing an existing storefront once occupied by Scoville Jewelers. Future additions include the relocation of SUNY Adirondack's culinary school

to the downtown; the construction of a farmer's market on South Street; new streetscapes and infrastructure on Park, School, Elm and Exchange streets; and a downtown park on South Street with green infrastructure.

Prior successful planning grants and proposed downtown projects for Glens Falls include the 2011 U.S. Department of Housing and Urban Development Community Challenge, a sustainable planning grant initiative advocating the public arts trail, a focus on arts and entertainment, plus the development of mixed-use residential projects with parking; and the 2015 Upstate Revitalization Initiative, where downtown Glens Falls was selected as one of two prime areas for large-scale revitalization efforts by the Capital Region's Economic Development Council.

As for changing the attitude and overall image of downtown Glens Falls, Bartholomew said, "This has primarily been achieved by trumpeting each project and gaining momentum to continue additional investments. The commitment of downtown businesses and the arts

and entertainment community has created wonderful collaboration and a very positive attitude with results."

He added, "Cost-wise, Glens Falls and affiliated economic agencies expended approxi-

mately \$40,000 to \$50,000, plus countless hours by key staff contributed to our renewal efforts."

Elizabeth City, N.C., has also embraced revitalization through a team-oriented approach, according to Deborah Malenfant, executive director of Elizabeth City Downtown Inc. She noted that her harbor-front city's renewal efforts and events began years ago when the organization was originally formed to beautify and revitalize the downtown while maintaining its historical integrity.

"We are working on placemaking initiatives to create public spaces for the community to come enjoy being downtown," Malenfant said.

Successful revitalizations bring people downtown for the holidays

Thanksgiving through Christmas marks the biggest retail shopping season in the U.S., with a Visa Insights report noting an uptick ►

"Successful revitalizations bring people downtown for the holidays"

in holiday spending in 2016 versus the past five years. Cities, through continued enhancements, can harness some of that holiday season spending. Bartholomew recommended a collaborative effort between the city, members of the local business development district and the arts and entertainment communities to attract Black Friday shoppers and beyond.

For Batesville and its mom-and-pops stores, Black Friday doesn't offer much; however, the city does look forward to the following Saturday. Haney said, "The day after Black Friday is known as Small Business Saturday, and that's a day we care about a little more because it's more 'us.' Yes, there will be sales, but also there will be activities on the street for kids, opportunities to meet the people who made the thing you're buying, food, music and places to lounge. It will be a day to converse with your neighbors, rather than push them down rushing toward a checkout line."

Elizabeth City is much the same, with Malenfant saying, "We also coordinate, host and partner with other organizations and individual businesses to promote holiday shopping. We don't focus on Black Friday as much as we do the Small Business Saturday



Downtown Glens Falls decks itself out in lights during the holiday season. (Photo provided)

initiative." She noted, " (Small Business Saturday) is held each year on the Saturday between Black Friday and Cyber Monday to encourage the support of small businesses nationwide. This is an American Express-sponsored event that ECDI supports and promotes."

Elizabeth City Downtown Inc. also presents key events, which the city supports, to attract visitors. Some of these include First Friday Art Work, Holiday Celebration and Downtown Illumination, the Christmas parade and the lighted boat parade.

Revitalization doesn't come without its challenges, with some people proving resistant to change. But with all the benefits to local economies all yearlong, the benefits outweigh the headaches and a united front can help overcome any challenges. Haney said, "We could never have done this without the cooperation of the city, the county, local financial institutions, local businesses sponsors and volunteers. Other cities now contact us and want to know how we did a streetscape so quickly and so cheaply, and now, four years later, the answer is with help." ■

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Renaissance Hotel, Columbus, Ohio
www.omlohio.org

Nov. 5-9 2017 American Water Resources Association Annual Conference

Red Lion on the River-Jantzen Beach Hotel, Portland, Ore.
www.awra.org/meetings/Portland2017/

Nov. 6-9 Campus Fire Forum 2017

Chapel Hill, N.C.
www.campusfiresafety.org

Nov. 7-10 Fire Findings Investigation of Gas and Electric Appliance Fires

Fire Findings laboratory testing facility, Benton Harbor, Mich.
firefindings.com/training/seminar/investigation-of-gas-and-electric-appliance-fires

Nov. 8-10 Water & Wastewater Equipment Manufacturers Association 109th Annual Meeting

Omni Scottsdale Resort and Spa at Montelucia, Scottsdale, Ariz.
wwema.org

Nov. 8-10 Sweeper Summit 2017

Hilton Palacio Del Rio, San Antonio, Texas
www.sweepersummit.com

Nov. 10-15 IAEM Conference and EMEX

Long Beach Convention and Entertainment Center, Long Beach, Calif.
iaemconference.info/2017/

Nov. 15-18 National League of Cities City Summit

Charlotte, N.C.
citysummit.nlc.org

Nov. 15-18 EMS Associates Summit 2017

Provo, Utah
emsassociates.com/join-us-in-provo/

Nov. 28-Dec. 1 Florida Parking Association 2017 Annual Conference and Trade Show

PGA National Resort and Spa, Palm Beach Gardens, Fla.
flparking.org/december-conference/

DECEMBER

Dec. 1-2 Iowa Society of Fire Service Instructors Annual Instructor's Conference

Ames, Iowa
www.iasfsi.org/events

Dec. 5-7 Groundwater Week

Nashville, Tenn.
www.groundwaterweek.com

Dec. 5-7 Power-Gen International

Las Vegas Convention Center, Las Vegas, Nev.
www.power-gen.com

JANUARY

Jan. 2-4 2018 Northern Green Trade Show

Minneapolis Convention Center, Minneapolis, Minn.
northerngreen.org

Jan. 5-9 American Correctional Association 2018 Winter Conference

Marriott World Center, Orlando, Fla.
www.aca.org

JANUARY

Jan. 15-16 FDSOA 30th Annual Apparatus Specifications and Maintenance Symposium

Scottsdale, Ariz.
www.fdssoa.org

Jan. 17-18 FDSOA Annual Health and Safety Forum

Scottsdale, Ariz.
www.fdssoa.org

Jan. 17-20 Fire-Rescue East

Ocean Center, Daytona Beach, Fla.
www.ffca.org

Jan. 17-20 2018 Piedmont Fire Expo

Twin City Quarters/Benton Convention Center, Winston-Salem, N.C.
www.forsythcountyfire-rescue.com/expo.php

Jan. 22-25 Heavy Duty Aftermarket Week 2018

The Mirage, Las Vegas, Nev.
www.hdaw.org

Jan. 24-26 U.S. Conference of Mayors 86th Winter Meeting

Washington, D.C.
www.usmayors.org/meetings

Jan. 30-Feb. 1 2018 Indiana Parks and Recreation Association Conference & Expo

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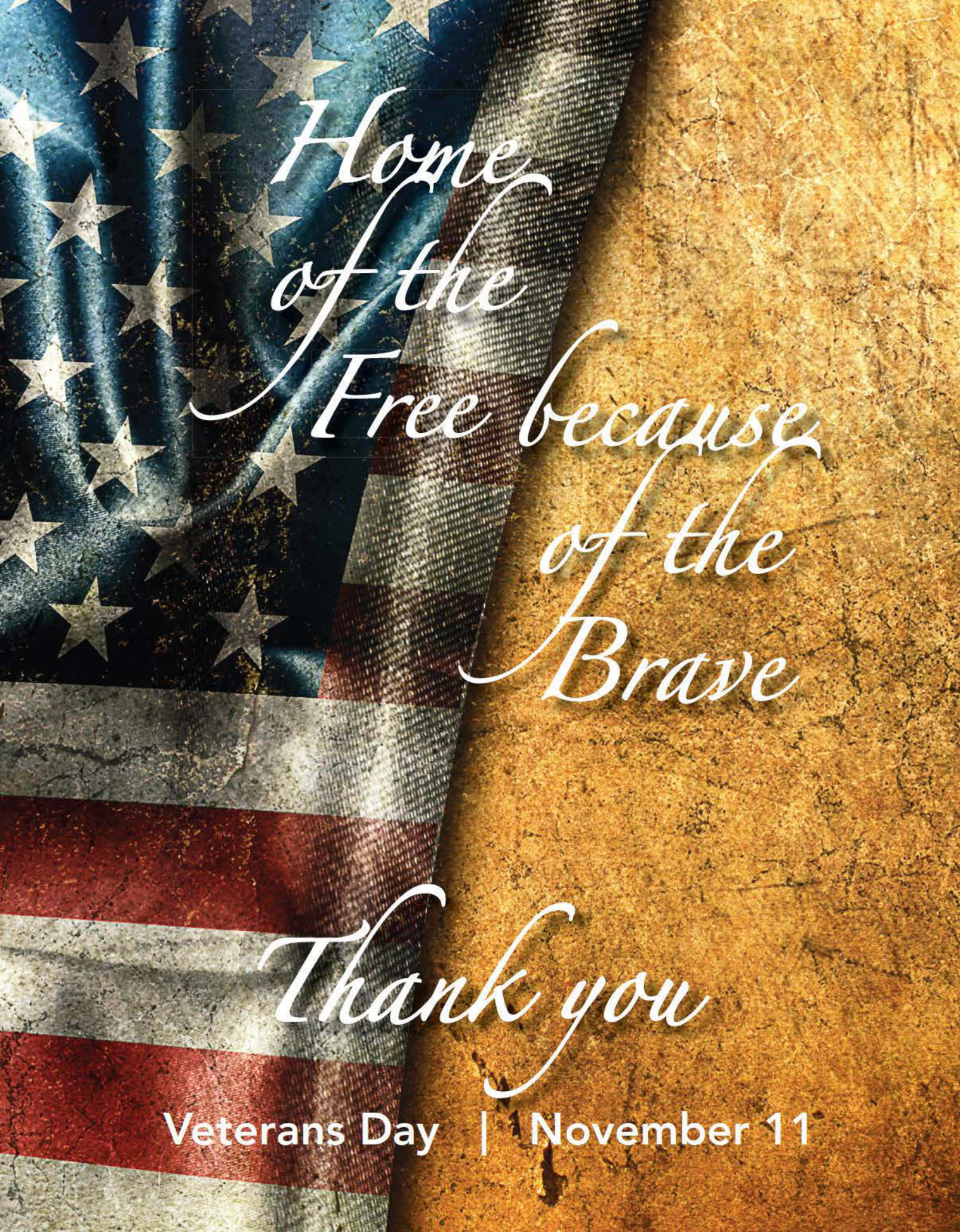


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William “Bo” Mills assumes presidency of APWA 2017-18 National Board of Directors

KANSAS CITY, MO. — The American Public Works Association announced that Germantown, Tenn.’s, Public Works Director William “Bo” Mills has assumed the presidency of the national board of directors at the recent APWA PWX Conference held in Orlando, Fla., Aug. 27-30. Elected by the association’s nearly 30,000 members, Mills leads the association with APWA’s new President-Elect Jill Marilley, HDR senior construction manager in Bellevue, Wash., and Immediate Past President Ron Calkins, PWLE, public works director (retired) of Ventura, Calif. Mills continues his six years of service on the 17-member board of directors and will also serve as the past president during 2018-19.



Mills has a 32-year working career and has been the director of public works with Germantown for 13 years. His duties include the direct supervision of the programs and personnel associated with the following areas: animal control; parks/right-of-way grounds maintenance; State Street aid; stormwater maintenance; street maintenance; water production and distribution; sewer collection; and many utility-related capital improvement plan projects. Prior to becoming the director of public works, Mills served Germantown as assistant director of public services for seven years and solid waste coordinator for six years. He has spent his entire working career with the Germantown Public Works Department.

Mills has been an APWA member since 1989 and has been active on both the chapter level — through the Tennessee Chapter’s West Branch — and national level. For more information on APWA President Mills, contact APWA Media Relations and Communications Manager Laura Bynum, lbynum@apwa.net.

2017 Gold Medal Awards for Excellence in Parks and Recreation announced

ASHBURN, VA. — The American Academy for Park and Recreation Administration, in partnership with the National Recreation and Park Association, is pleased to announce the recipients of the 2017 National Gold Medal Grand Plaque Awards for Excellence in Park and Recreation Management. The sponsor of the Gold Medal Awards program is Musco Lighting LLC.



The 2017 Gold Medal Grand Plaque recipients are:

Class I (population 400,001 and over)

- Johnson County Park and Recreation District, Shawnee Mission, Kan.

Class II (population 150,001 – 400,000)

- Grand Prairie Parks, Arts and Recreation Department, Grand Prairie, Texas

Class III (population 75,001 – 150,000)

- Roswell Recreation, Parks, Historic and Cultural Affairs Department, Roswell, Ga.

Class IV (population 30,001 – 75,000)

- Bismarck Parks and Recreation District, Bismarck, N.D.

Class V (population less than 30,000)

- Itasca Park District, Itasca, Ill.

Armed Forces Recreation Award

- Marine Corps Community Services – Marine Corps Air Station, Cherry Point, N.C.

State Park Systems

- Arizona State Parks and Trails

Founded in 1965, the Gold Medal Awards program honors communities throughout the United States that demonstrate excellence in parks and recreation through long-range planning, resource management, volunteerism, environmental stewardship, program development, professional development and agency recognition. Agencies are judged on their ability to address the needs of those they serve through the collective energies of community members, staff and elected officials.

NAFA representatives discuss 11 essentials of fleet management with Chinese delegation


PRINCETON, N.J. — NAFA’s influence in global fleets continues to expand. On Aug. 22, representatives of the association met with Xue-Liang Tao, PhD, director of Department of Policies and Regulations, National Government Offices Administration, Beijing, China. Accompanying him were 21 delegates from his department — policies and regulations — who handle asset management, property management and financial management. They met with Kate Vigneau, CAFM, NAFA’s director of professional development; and NAFA Treasurer David Hayward.



David and Kate presented a 60-minute overview of “The Eleven Essentials of Fleet Management.” The 11 essentials are a terrific foundation for the new fleet manager and can serve as a report card for experienced fleet managers to determine the areas where they are succeeding as well as areas in need of improvement.

There was a lively Q&A session after the presentation, which lasted nearly an hour. The Chinese delegation was particularly interested in the need for a dedicated fleet management information system and NAFA’s Sustainable Fleet Standard.

These government representatives share many concerns with North American fleet professionals, such as the high fatality rate on Chinese highways. This led to a discussion on the role of the driver and the vehicle in traffic safety. They also expressed the need for standards and benchmarks in fleet utilization and optimal lifecycles.

China has embraced the principles of the sharing economy, and carsharing in particular, which NAFA can learn from as it explores and promotes mobility management. One of the delegates explained that she is accustomed to sharing space, tools and cars so applying these principles to mobility management is second-nature. 

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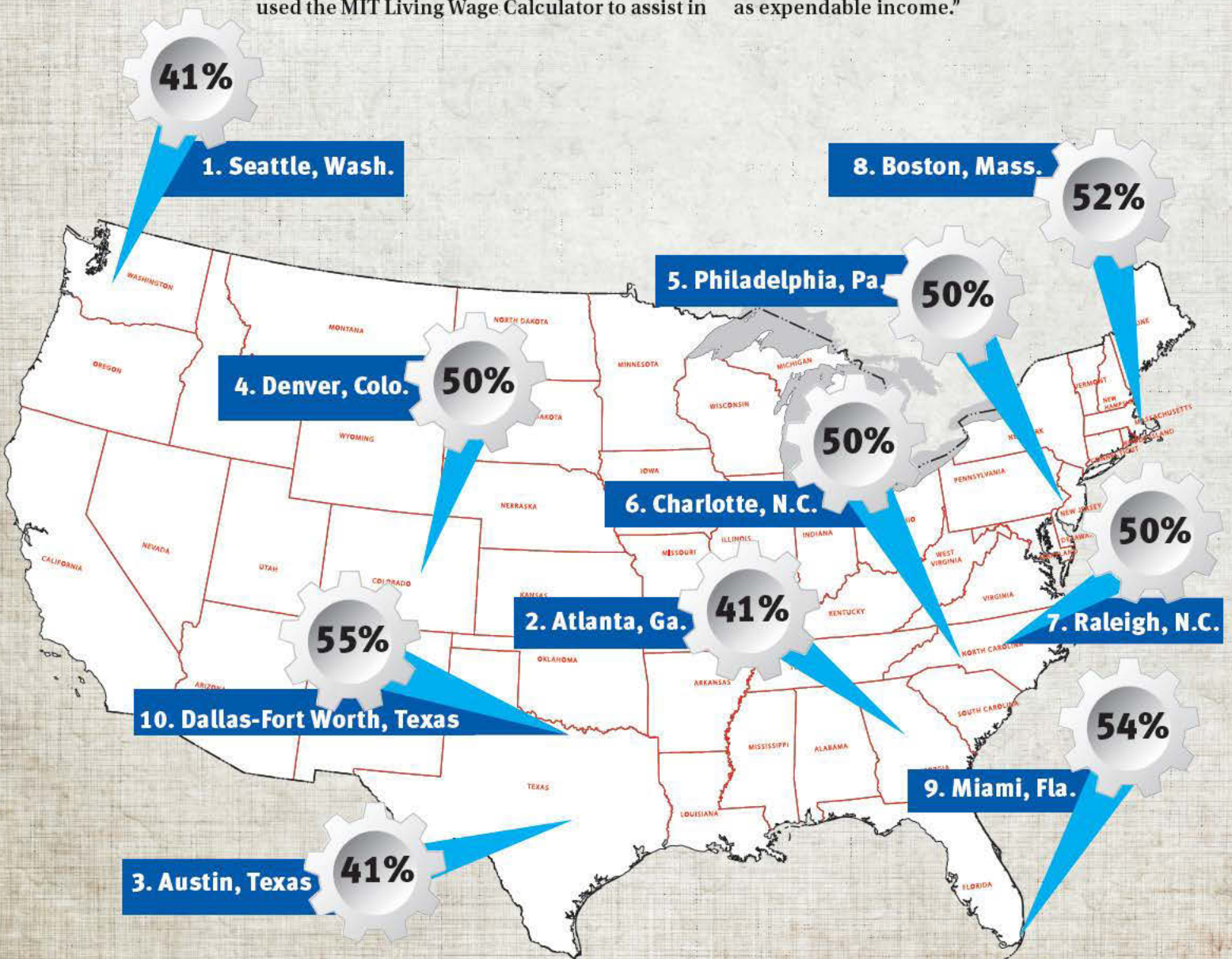
Ten tech hubs with the best value

Paysa recently completed several lists detailing cities outside of Silicon Valley that have their fair share of tech jobs. Lists included cities with the best tech job salaries, the highest and lowest cost of living — leading up to the grand reveal of the ten cities that offer the best overall value for tech jobseekers.

To create these different lists, Paysa “extensively analyzed our databases for cost of living expenses and salaries in cities for tech jobs. We used the MIT Living Wage Calculator to assist in

the calculation of average cost of living. Finally, we utilized Zillow, an online realty site, to project how much it would cost to buy or rent a house in the cities listed.”

The best value list looked specifically at the cost of living versus salary. Seattle topped the list despite not being in the lowest cost of living cities. Paysa notes, “(Seattle) does so well because only 41 percent of the salary is allotted to cost of living, meaning that 59 percent is left as expendable income.”



Source: www.paysa.com/blog/2017/05/03/tech-jobs-in-non-tech-hubs/

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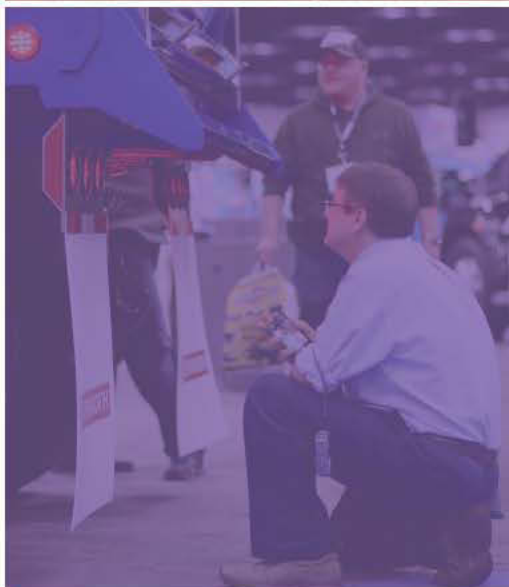
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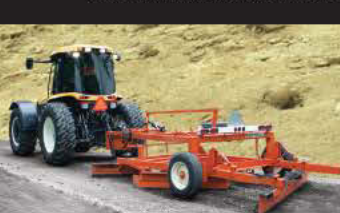


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