

# **PUBLIC WORKS**

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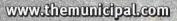
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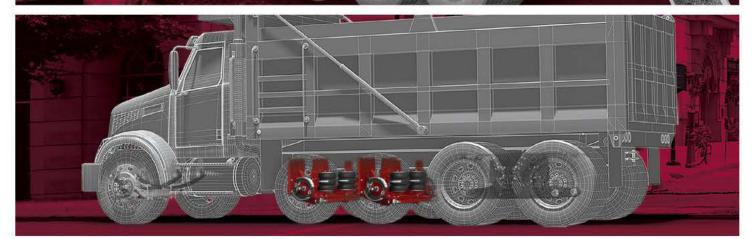
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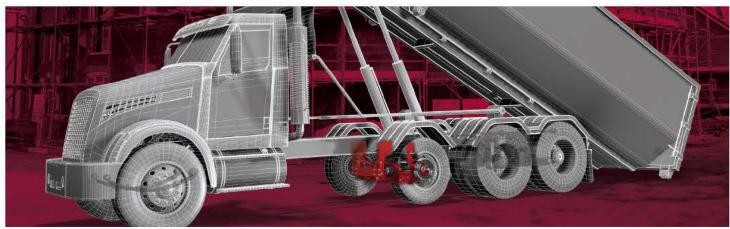
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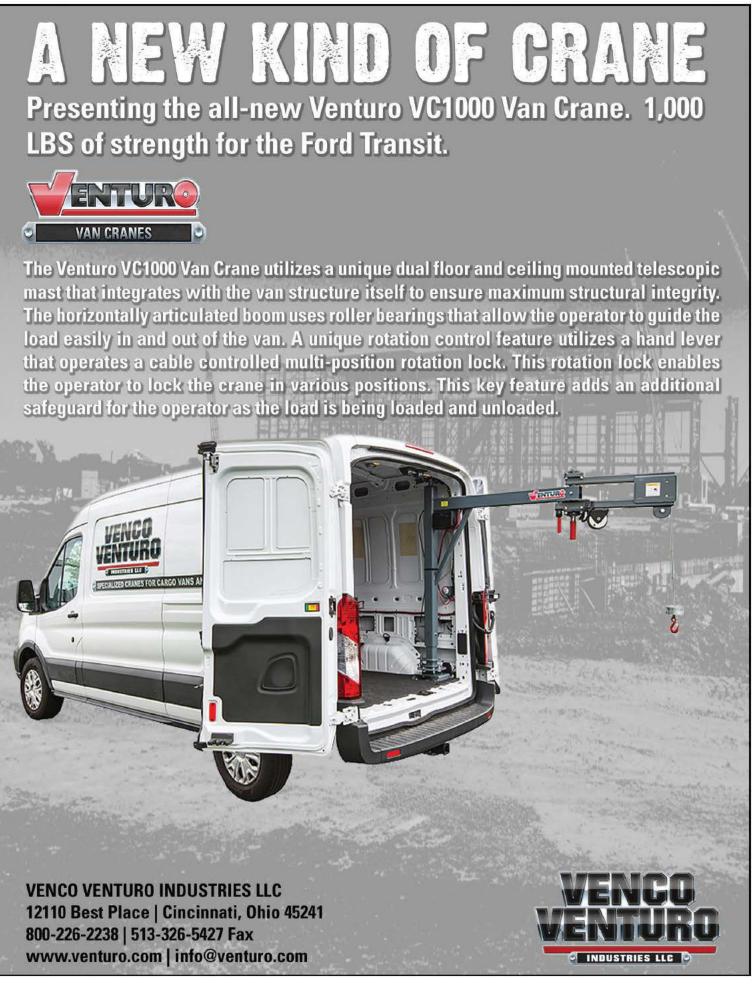
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#### On the Cover

Durable and transferrable, Switch-N-Go Detachable Body Systems will be the ultimate tool for any municipality. There's a reason the Switch-N-Go brand has become so popular, so fast, across the nation: Find out what it is by visiting www.switchngo.com. (photo provided)







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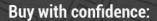
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# Images of the future



Jodi Marlin | Editor

N ONE PARTICULAR EVENING recently, I tried but failed to follow a sloppy "Contagion" story plot on prime time TV; failing miserably, I defaulted to checking the day's top stories on my phone.

Normally I'm good at scrolling past anything work-related after 10 p.m. That evening, though, one transportation headline begged for a click. It read "0 to 400 in mere seconds: Welcome to the age of hyperloop."

Hyperloop ... and I've barely codified the challenges public works will face during the second decade of the millennium should autonomous cars become a viable transportation option.

The next big thing is always in development, and transportation engineers are likely well aware that, in their case, it's already being tested in the Mohave Desert. "It" is a futurist's transportation dream that will forever change Americans' expected level of service for getting from one location to another.

This high-speed land transportation option is in the works by several companies, including Hyperloop One, which performed that first real-world test of the concept. Similar to a train, it's expected that hyperloop compartments will travel along a rail; but advanced magnetic levitation technology will enable them to reach speeds approaching 750 miles per hour. Holy G-forces, Batman.

According to USA Today, hyperloop pioneers say the technology—improved from that currently being used by maglev trains in Europe and Asia—can sustain very high speeds using precious little energy. They also assert that the propulsion process produces no carbon emissions, and will actually be comfortable for passengers because the acceleration will be gradual. I don't know that I'm convinced 2 Gs could ever be comfortable; but I'm just as curious about what the development of a hyperloop system means for public works entities across the country. Among the issues it seems to raise are land rights, the status quo that rail and air travel providers will want to protect, and funding for the public infrastructure facilities that will service this new mode of transportation.

Hyperloop One CEO Rob Lloyd is quoted in the USA Today article as saying he thinks that if support for the idea continues, the company could be moving cargo across the country by 2019 and passengers by 2021. That seems ambitious; but even if he's off by a few years, it still looks as though the hyperloop has great potential to significantly alter the U.S. transportation landscape.

In other recent news, the American Medical Association reported in April that life expectancy among the poorest residents of the U.S. — those

in the

lowest quartile — is, even in the 21st century, affected by where they live. But NextCity.org's coverage of the new research noted optimistically that "... the pattern didn't hold everywhere. In some cities, like New York, Miami and Birmingham, Ala., the poor have seen rising life expectancy this century and live nearly as long as their middle-class neighbors, suggesting that small-scale, local policies to improve public health can lengthen life spans, despite income inequality." (nextcity.org/daily/ entry/poor-americans-life-expectancycities-healthy)

Those policies include expansion of preventive healthcare like vaccinations and mammograms, a portion of local taxes directed to hospital care for those who can't pay, a countywide ban on smoking in restaurants and workplaces, and philanthropic campaigns to improve health, as well as wide access to social, educational and economic opportunity.

Just something to chew on as the volatile general election draws near.

In this issue of The Municipal, meanwhile, we'll look at practices used by communities that are trying to create more responsible and responsive gas and electric utilities; and at the use of dynamic message road signs to improve motorist safety rates and decrease gridlock and driver frustration. We hope these and other features will help you form a vision for the community that could be, with your help and under your direction. Have a great summer.



### **MUNICIPAL SPECIALISTS SIMPLIFY THE BUILDING PROCESS**





# **The value's in the versatility** *Switch-N-Go truck bodies*

**O ONE HAS YET DARED TO SAY** that state and local governments have pulled out of the recession. After eight long years, municipal bonds remain at a 15-year low. Personnel retirements are still only occasionally being replaced with new hires and equipment requests that were previously postponed are still met, more often than not, with sighs and gnashing of teeth.

Nobody's reality is back to what it once was. Because doing more with less has become the new standard, firefighters, parks and recreation directors, fleet supervisors and public works have to be more versatile in the course of their workday than ever before — and so does the equipment they depend on to do it. Today's cities and towns need equipment solutions that perform more than a single task, and do it well. The price tag of a new work truck is high to begin with. Add the maintenance costs, and the total cost of ownership over a five- or eight-year period is almost as much as the truck's purchase price.

But truck bodies can be a tremendous source of savings in regard to diverse performance and hauling needs. Why buy three trucks when a single cab and chassis with a detachable drop box, dump body, equipment body and storage body from Switch-N-Go offers both a time and significant cost savings year-round?

Switch-N-Go is a detachable truck body system manufactured by Deist Industries Inc., of Hadley, Pa. It mounts to mediumduty work chassis/cabs with 12,000, 15,000 and 18,000 loading capacities: the 15,000 and 18,000 pound systems come in electric over hydraulic or in full hydraulic. The system can be used on cab-over or conventional trucks, Class 3–6 (13,000–33,000 gross vehicle weight) and 60-inch cab-to-axle through 138inch cab-to-axle Ford, GMC, Isuzu, Dodge, Mitsubishi, International and Hino models.

"Municipalities love SNG because of the total durable and transferrable bodies they can use in all situations: highway maintenance, salt spreading, bridge maintenance and repair, street cleaning and repair, demolition, rail and tree care, landscaping debris cleanup and others," said SNG Vice President of Sales and Marketing Omar B. Sandlin II. The 11-520-15E-PW SNG hoist system is the company's best-selling municipal product and permits 11-foot bodies to be safely and efficiently loaded and unloaded at ground level. Additionally, SNG's larger full hydraulic system, the 14-620HD-18H, provides fast and aggressive loading and unloading for heavier loads and repeated maneuvering all daylong.





#### LEFT:

Switch-N-Go truck body systems provide 50-degree dumping ability and ground-level loading and unloading. (Photo provided)

#### ABOVE LEFT:

Switch-N-Go systems mount to chassis of up to 33,000 GVWR and are offered in 12,000-, 15,000- and 18,000-pound winch models. (Photo provided)

#### ABOVE:

What downtime?

With up to 12 tons of dump capacity, Switch-N-Go truck bodies have the volume to keep the number of return trips low. One truck provides a fleet of opportunities. (Photo provided)

Traditional and conventional permanent

bodies takes two or three operators a long

time to convert a truck from a dump to a salt

spreader, or to add high chip sides and a roof.

SNG allows the transition to happen in three

minutes and as often as they or the depart-

ment manager would like, and the process

With SNG a city utility can trim extending

branches that rest over the edge of roads

and highways, and parks departments can

clear trails and trim trees — then drop an

SNG chipper bodies in multiple areas for

cleanup, using only one work truck. It's

nothing to see eight to 10 SNG chipper

bodies along state highways as well, sitting

on the ground with cleanup crews manning the site, while the truck is off setting up

"This is one of the most valuable tools a

Safely, efficiently and cost-effectively: That's how the job gets done with Switch-N-Go detachable truck body systems. For more information, visit www.switchngo.com, or

municipality could invest in to make the most of their fleet budget and available staff while still providing a level of service that has come

requires only a single operator.

other jobs with other bodies.

to be expected," said Sandlin.

call (888) 311-0867.

#### Versatility when it's needed the most

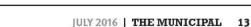
In early spring, the weather can vacillate backand-forth quite often. A warm week could be followed by a sudden snowstorm bringing several inches of snow. "The previous week, when a street crew might have been working with a dump bed on projects, they now have to scramble and fight the storm," said Sandlin. "With SNG you can simply unload the dump bed onto the ground and pull up a V-box spreader. You're ready to go in three minutes' time."

Once the storm is over, there's no need to leave the V-box spreader on the truck in anticipation of another storm in the extended forecast. Take advantage of the good weather by pulling up the dump bed and getting to work immediately. Operators without SNG leave the V-box spreader or tailgate spreader attached to the dump bed all winter long until they're sure the weather has changed for good. This inherently causes lost opportunities for work to be completed because the dump bed is not accessible.

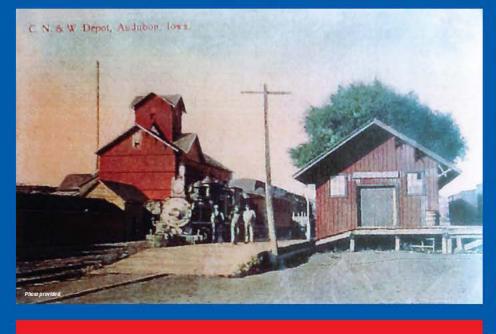
Emergency readiness ratchets up the value of Switch-N-Go's versatility. Not only can SNG trucks have a salt spreader ready for that unexpected snow storm in a matter of minutes, they can pick up flatbeds filled with sandbags and travel to the staging area to assist in situations of flooding or high water. Cleanup from the fury of hurricanes and tornados can also begin immediately when a city owns a fleet of Switch-N-Go trucks: It can rapidly set 40–50 debris boxes into directly hit zones, with the use of only one or two trucks.



ities the flexibility they must have for every season. (Photo provided)



# Chicago, Rock Island and Pacific Railroad Audubon, Iowa



Audubon, Iowa, was platted by a railroad, settled through the invaluable efforts of two highly energetic real estate promoters and named after a vaunted ornithologist and artist who may or may not have passed through the area 35 years before.

During the 19th century the Chicago, Rock Island and Pacific Railroad was granted 163,000 acres of choice land by the U.S. government to ribbon its iron lifeline of commerce from coast to coast. A significant stretch of those acres ran through the heart of lowa, where the tiny municipality of Audubon, population 2,072, is located.

The site was a fortuitously situated stopover for people and cargo, so the railroad platted the town on Sept. 23, 1878.

Three weeks later, on Oct. 15, town lots were auctioned off by public-spirited land agent Ethelbert Freeman and Civil War veteran Charles Stuart. Every lot was snatched up that day for the aggregate price of \$6,190, and by nightfall several buildings were already in the process of construction.

Building continued vigorously throughout the winter. Within two months more than 50 homes and businesses dotted the former wilderness, including, according to a resident who recorded the progress, "one bank, five general stores, one jewelry store, two hotels, one restaurant,

Although no records indicate ornithologist John James Audubon lived in or visited the area, his name was applied to the settlement as an honor. (Lee Snider Photo Images / Shutterstock.com) three meat markets, three blacksmith shops, one harness shop, two coal yards, two lumber yards, one elevator, three grain dealers" and a school house "with 14 scholars and Bob Hunter, teacher."

Over the next several years the population exploded. The 1880 census counted 792 residents in the town. By 1900, 1,866 people lived there, reflecting 235 percent growth in Audubon's first 20 years.

Freeman, dubbed "The Father of Audubon," was — and remains — the town's singularly most celebrated denizen. Audubon's first permanent resident, he was unanimously elected its first mayor and served as fire chief, waterworks and electric light plant manager, school board member, county treasurer and member of several Masonic groups. He also owned half of the town's only bank. Noted for his generosity, Freeman helped establish lodges, a Grand Army post, band and drum corps, a fire department and the county fair.

Stuart was a Vermont native, reared as a farmer, who took up work in Chicago. He bought large tracts of land in lowa and founded the town of Stuart before migrating to Audubon. He was instrumental in moving the Audubon County seat

> from Exira to Audubon the year after the town was founded.

> > Audubon was incorporated in 1886, and though its population has leveled off, the small town – less than two square miles in area – is still recognized for its nearly unprecedented growth rate more than a century ago.

> > > М





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### 'Magic Capital of the World' *Colon, Mich*.

Welcome to a town literally named after a punctuation mark ... a town whose charm compels visitors to stay for life, even if they intended only to pass through ... a town with more abracadabra per capita than anywhere else on the planet.

Welcome to Colon, Mich., the "Magic Capital of the World."

The small municipality, population 1,159, located about 20 miles north of the Indiana border, acquired its moniker in the summer of 1926, when famed magician Harry Black-stone's wife plunked down a deposit to purchase Angel Island in nearby Sturgeon Lake for an off-season retreat. Blackstone found the island ideal for refitting old equipment, building new effects and relaxing between performance seasons. The location, soon to be known as Black-stone Island, contained a frame house for a residence and a large barn for storing stage equipment and the animals used in Blackstone's acts. He lived in Colon until 1949, when he moved to California for health reasons; he remained there until his death in 1965. He said, however, "I would rather live in Colon than anywhere else in the world." He got his wish, of sorts; he is one of more than 30 magicians buried at Lakeside Cemetery in Colon.

Blackstone enraptured the townspeople with lawn parties and magic shows, using the island venue as a warm-up before resuming his annual worldwide tours. The family instantly melded with the community.

In 1927 Australian magician Percy Abbott visited Blackstone Island en route to a United States tour. After a time of fishing and relaxation — and meeting his future wife — Abbott



**LEFT:** Magician Harry Blackstone, far right, a name known throughout the Midwest during the first half of the 20th century, discovered the community of Colon, Mich., in 1926 and is responsible for initiating its rise to fame as the "Magic Capital of the World." (Photo provided)

**ABOVE:** Even the legendary comedian Bob Hope was drawn to the magic community that developed in Colon during the earlyto mid-1900s. (Photo provided)

**BELOW:** In 1927 Australian magician Percy Abbott, left, visited Blackstone Island. He decided to settle in the community and open a magic shop with Harry Blackstone. That arrangement dissolved, but Abbott reopened his own shop, which today remains the world's largest outlet for magic props and related items. (Photo provided)





scrapped the tour and settled in Colon for a lifetime stay.

Blackstone and Colon partnered to open a magic shop in town. The arrangement was dissolved after 18 months due to a misunderstanding, however, and the shop closed.

Abbott reopened his own shop, which today remains the world's largest outlet for magic props and related items. Two more internationally renowned magic stores — The FAB Magic Company and Sterlini Magic Manufacturing — have since joined Abbott as mainstays of the local commercial landscape. Every year the three companies and other sponsors host several events that draw thousands of magicians from six continents and double the size of the population for days at a time.

The Abbott Magic Get-Together is the largest of the festivals. Every August more than 1,000 magicians descend upon the "Magic Capital of the World" for four days of shows, seminars and competitions. The festival hosts close-up shows for magicians only, as well as public shows in the jam-packed high school gymnasium. The FAB Magic Company employs woodworkers, seamstresses, artists and metal workers to produce quality magic props. Its annual festival in July features a magic camp for all ages. This year's festival takes place July 20–23.

For the past two Aprils the third festival, a one-day 31 Flavors of Magic event, has been staged at the high school. Hosted by magician Ron Carwell, it includes public shows and magic lessons for every age.

Carwell and others also put on a Sharing of Magic every October. The event is a "big benefit show for the local food pantries," said Edith Doenges, president of the local chamber of commerce. "It is magic giving back to Colon. The local Lions Club gets in on the act, too; it stages the popular Halloween Fest. It's a Houdini-type thing."

Every Saturday from May through October, magic shows attract tourists from around the country. The town even constructed a "walk of stars," similar to Hollywood Walk of Fame in the forecourt of Grauman's Chinese Theater.



**ABOVE:** On several occasions in the past, the city's downtown was closed to traffic and pedestrians so that groundbreaking magical tricks could be performed including one involving release from a straightjacket while suspended, upside down, by a heavy chain. (Photo provided)

**LEFT:** Rick Fisher, president of the downtown development association and owner of FAB Magic, recognizes the importance of Colon's worldwide reputation.

"If you took the title out of this village, it would be just like any other village," he said. "It's amazing." (Photo provided)

"Eventually we will have a star for everyone famous who has been in town," said Doenges, citing such notables as Jack Benny, Edgar Bergen and Charlie McCarthy.

Though magic pervades the local culture — the school's mascot is a top hat-doffed white rabbit — magic is not the only draw. "People also come for the fishing," said Doenges, who has plied the sporting good

> trade for half a century. "We have six or seven big lakes." The town trumpets the "familyfriendly angle," she added. "If dad and child or mom and child are into magic, you have to have something to entertain the rest of the family. You have to think about the whole family, and we are building on what we have."

itterstock photo

# Focus on: \_\_\_\_\_ Public Works



#### FEATURED PHOTO:

Electric utilities are still the target of takeovers by communities looking for lower-cost service and a more responsive supplier. Acquiring the capability to provide one's own electricity is a lengthy process, however, and it accumulates up-front costs as well. (Shutterstock photo



#### 62 percent

The reduction in workforce achieved by the Jefferson County Public Utility District in Washington since municipalizing its electric utility in 2013. During the last three years, it has provided 100 percent carbon-free electricity to the region, hired 25 new employees, enhanced customer service, been responsive during storms and has not raised customers' rates.

Read more about municipal electric takeovers on page 32

#### 50 years

Number of years the 61-year-old Tappan Zee Bridge, which crosses the Hudson River in New York, was meant to last, given that it was built during a period of shortage in construction materials that followed the Korean War. The bridge is currently undergoing reconstruction using accelerated bridge construction methods. (Shutterstock photo)



11

Learn more about this building method on page 24

#### 2,000 +

According to the Florida Municipal Electric Association, in the United States there are more than 2,000 municipal utilities serving 14.7 percent of the nation's electrical needs — or one in seven Americans.

(Source: publicpower.com/floridas-electric-utilities-2)



Amount of time for which Greensboro, N.C., downtown business owners petitioned the city council in May to allow patrons to park for free. The need for parking revenue had reportedly driven local law enforcement to aggressively ticket even the most minor infractions, driving business away from the area. (Source: www.greensboro.com/ news/greensboro-business-ownerssay-free--hour-parking-might-help/ article\_4aaaeoae-4d88-5409-a465bzaze801cf51.html.)



The city of El Paso, Texas installed 1,000 100-watt Washington Postlite II LED luminaires to replace 175-watt metal halide decorative fixtures. The upgrade resulted in a **100 CONTENT** reduction in energy and **10 PERCENT** increase in light levels

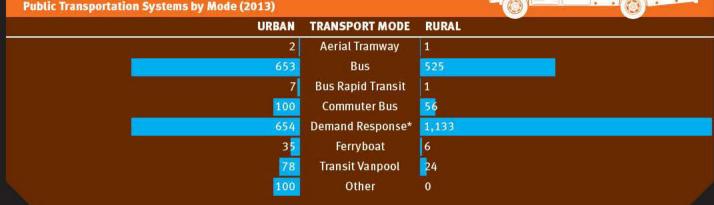
See the full case study on page 28

#### **DEMAND RESPONSE**

The only mode-of-transportation category in which the number of public transportation systems in rural areas outnumber (Source-www.onto.com/resources/statistics/F those in urbanized areas, per the American Public Transportation System 2015 Fact Book.

(Source: www.apta.com/resources/statistics/Documents/FactBook/2015-APTA-Fact-Book.pdf)





#### Focus on: Public Works

# **Dynamic message road signs**



By BARB SIEMINSKI | The Municipal

ITY THE POOR CONESTOGA travelers of the 1800s heading west. They had no way of knowing if a band of renegades was around the next bend, or if a herd of bison was ready to thunder their way down the canyon. They had no advance notice of tornadoes, blizzards or golf ball-sized hailstones. In short, they didn't have the luxury of dynamic message road signs to warn them of impending dooms or delays.



Dynamic message signs — also termed changeable or variable message signs — are programmable traffic control devices that display messages composed of letters, symbols, graphics or all three. They are used to provide information about changing highway conditions in order to improve operations, reduce accidents and inform travelers. These signs may inform drivers to change travel speed, change lanes, divert to a different route or to simply to be aware of a change in current or future traffic conditions.

According to the U.S. Department of Transportation, Office of the Assistant Secretary, there are many levels of such signage, including dynamic message signs, variable message signs, portable dynamic message signs, construction warning signs and portable changeable message signs, to name just a few.

"The most important value of a dynamic sign board is its use as a tool for traffic management operators to alert drivers of an imminent, unexpected life-threatening hazard," said John McClellan, Minnesota DOT freeway operation supervisor. "A stalled vehicle or crash could be blocking the lane, or the first responders at the scene of that accident — just around the curve or on the other side of the hill. It's a short, visible, high-profile message that something unexpected is about to happen in the next few seconds, and it doesn't require anything more for the driver than looking straight out of their front windshield."

The Regional Transportation Management Center in the Minneapolis/St. Paul area deploys messages for these critical hazards every day, sometimes multiple times a shift. Coupled with a robust camera surveillance system — to assist in confirming and precisely locating the incident — and integration with the state patrol 9-1-1 emergency dispatch

A stalled vehicle blocks the center lane in free-flow traffic, with the two occupants running to the shoulder. The Minnesota Department of Transportation uses dynamic message road signs to alert drivers to this kind of imminent, unexpected, life-threatening hazard. (Photo provided by Minnesota DOT)



This snapshot illustrates how the message fields of a DMS are filled in and deployed. (Photo provided by Minnesota DOT)

 TRAVEL TIME TO:

 63
 12
 MI
 12
 MIN

 275
 24
 MI
 24
 MIN

An Ohio DOT dynamic message sign shows travel times. (Photo provided by Ohio Department of Transportation)

and Minnesota DOT F.I.R.S.T. responders, roadway emergencies are prevented from becoming tragedies.

"Less life safety-critical, but still very valuable to the public day-to-day, is providing drivers with additional information to guide their decisions — such as advance warning of closures or unusual delays, and travel times, so drivers can make alternative choices or at least know what to expect," McClellan said. "That's what the signs are best at — delivering very short, traffic-related messages in a standard and predictable format for comprehension in the short amount of time drivers have to read them while passing by."

Minneapolis has several electronic DMSs downtown, which it uses for event parking and for turn prohibitions on certain streets, he noted.

"Everything I've heard is that they are happy with them and I see them used whenever I go downtown." There's no question that dynamic message road signs are extremely helpful; not only in emergencies, but also in providing immediate, nontraffic information such as Amber Alerts, Silver Alerts and a host of other pertinent announcements.

Just like anything else, security should be a consideration in the operation and deployment of dynamic messages signs. McClellan said that for the Minnesota DOT, security comes down to strong doors, good locks, knowledge of who has the keys and restriction to high-impact areas.

"The hacking incidents I can think of have been portable message boards left on the side of the road at night, in unlit areas, with the hatch for the keyboard unlocked and a log-in password that's either the manufacturer default or the hatch itself."

These are electronic devices, he noted. They need power and a place to be mounted where they are protected from vandalism, theft and damage from vehicles. They need a reliable communications network to program them and verify they are operating correctly, reliable software to control them and appropriately trained staff to operate and maintain them. "But because of their visibility, mistakes or malfunctions will be obvious and well-documented by the public on social media," he said.

David Rose, communications manager of the Ohio DOT, said his department gained another kind of benefit from the use of dynamic message boards.

"We've been successful in using the signs as part of our safety awareness campaign," he said. "For example, every week we update total traffic deaths on Ohio's roads as part of our safety awareness campaign. We've received very positive feedback and are in our second year of doing this."

Cheryl Lowrance, principal Intelligent Traffic System engineer with Virginia-based Noblis, handles DMS content and analysis for the U.S. DOT.

"We report benefits, costs and lessons learned on projects that have been deployed based on evaluation, reports and other sources of information," she said. The benefits included vehicle speeds decreasing significantly in work zones where DMSs >

"The hacking incidents I can think of have been portable message boards left on the side of the road at night, in unlit areas, with the hatch for the keyboard unlocked."





were used to inform drivers upstream. The benefit-to-cost ratios for six dynamic message signs on two freeways ranged from 1.38:1 to 16.95:1, based on total crashes; however, hazard warnings posted during incidents were ineffective at reducing secondary crashes. When the link travel times posted on the DMS were twice as long as typical travel times, drivers began to favor alternate routes.

The Ohio DOT worked with several peer departments before building out its ITS, which consists of dynamic message signs, cameras and speed and weather sensors. Statewide, there are 130 message signs, 500 cameras and over a thousand sensors, according to Rose, who added that the message boards are placed mostly around six major Ohio cities — Akron/ Canton, Cincinnati, Cleveland, Columbus, Dayton and Toledo.

"These ITS assets work together to provide real-time traffic data to the public, the media and businesses, all in an effort to reduce congestion and improve safety on Ohio's highways," he said. Resulting data is packaged and presented within www.ohgo.com, the state's premier traffic website. In addition, ODOT has a centralized Traffic Management Center that operates 24/7, 365 days a year. Its operators are the eyes and ears of Ohio's transportation system and work directly with law enforcement and first responders to better coordinate and communicate incidents, which are communicated on OHGO.com and through the DMS. TMC operators also work with 22 Freeway Service Patrol responders,

A hacked North Carolina dynamic message sign warning of zombies in the area. (Photo courtesy of www.securityforrealpeople.com) who assist with incidents on the ground. In April alone, the FSP responded to 5,620 such incidents, which were mostly a combination of disabled and abandoned vehicles and actual traffic incidents. ■



"Because of their visibility, mistakes or malfunctions will be obvious and welldocumented by the public."



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Focus on: Public Works



### **Accelerated bridge construction**

By DENISE FEDOROW | The Municipal

#### Bridges are vital to the transportation system, but in practically every state, a number of them have received failing grades and need to be replaced.

One way that federal, state and local officials are addressing the problem is by knowing their ABCs — accelerated bridge construction. Accelerated bridge construction uses prefabricated components instead of cast-in-place to repair or rebuild the structures.

Prefabricated bridges have been used for some time for temporary bridges, but John Simkulet, P.E., bridge department manager at Greeman-Pederson Inc., New York, noted they are being used more often in a permanent capacity. His firm has some experience with prefabricated bridges, mostly with components like three-sided boxes or trusses for pedestrian bridges.

"They definitely have their place and their application," he said.

#### History

According to the Federal Highway Administration's report, "Pre-fabricated Steel Bridge Systems—Final Report," available at www.fhwa.dot.gov, the first truly modular Construction workers watch as a precast concrete arch is put into place on the Elk Drive Bridge over the LaChute River in Essex County, N.Y. (Photo provided)

prefabricated steel bridge systems were developed in the 1930s for British military serving in remote areas. The main members are trusses composed of panels that are bolted together. The floor then spans between the truss members with a combination transverse floor beams and steel decking or grating. These systems are referred to as panel/floor beam/deck type bridges, and are probably the most widely recognized.

The second-most prominent prefab system was developed in the 1950s as a replacement

**RIGHT AND BELOW:** These photos show the progression of a Bebo system concrete arch.

Using precast concrete components shortens the amount of time in which a project can be completed. There's no need to wait for the concrete to cure in place, something that can take 30 days. It also reduces the impact to traffic. (Photo provided)

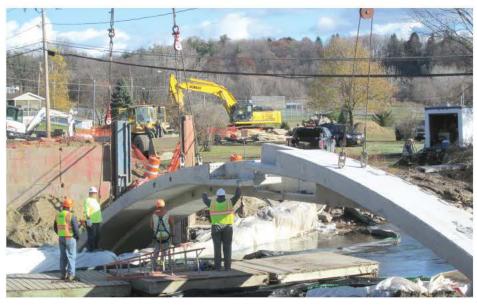
for deteriorating wooden bridges. They used prefab structural steel plate girders or a fulllength truss member with a steel deck on top of the main member, and are known as deck/ girder bridges.

The modern-day prefabricated panel/ floor beam/deck type system was patented by A.M. Hamilton in 1935 and is known as the Callender-Hamilton System. That system was modified by Sir Donald Bailey, a British civil engineer, and was patented in 1943 as the Bailey Bridge. Similar to the Callender-Hamilton System, modifications were made so that long spans would be built in multiples of panel lengths. Load-carrying capacity was increased by utilizing double trusses in vertical and horizontal planes.

The Bailey M2 Military Bridge is still being used by the United States military and is also sold to state departments of transportation for temporary bridges.

The third generation system is the Acrow Bridge, patented in 1973 and updated in 1990. It is lighter than the original designs, with trusses that are 50 percent deeper, 50 percent stronger in bending and 20 percent stronger in shear. The current Acrow Bridge and Bailey Bridge systems can span up to 450 feet, offering width accommodations of three lanes of traffic. Sidewalks can also be cantilevered on either side of the bridge. The Acrow Bridge is used in both temporary and permanent structures.

Other bridge systems, all based on the original design, include the Maby Johnson Bridge — with modifications mainly to design — and the Janson Bridge, which addressed fatigue performance the earlier systems did not, since they were built to be temporary. The Quadricon Module Bridge System is widely used in Asia and expected to last 75 years, but whether it adheres to U.S. standards still needs to be investigated.









The arch on the completed Elk Drive Bridge is a Bebo system by Contech Engineered Solutions. The headwalls were also precast; the stone pattern was stained in the field to give it the look of natural stone. (Photo provided)

#### PBES

A prefabricated bridge element and system has several components. Depending on need, it can involve just certain elements of the superstructure or substructure, the entire system to build a new bridge from the foundation, all the structural elements and the process to put the structure in place — whether by self-propelled mobile transport system or conventional lifting equipment.

In cases where the structural elements of the trusses or girders are still sound, and there's only deterioration to the deck panel, just one length of concrete deck can be replaced. In a case like this, the prefabricated panel can be installed in just hours, during the night, to greatly reduce the traffic impact.

#### **Benefits**

The biggest benefits to a PBES are the amount of time saved, the controlled environment where the components are made and increased safety. According to the ABC system, considerable time is saved at every level — from fast-track contracting using the construction manager/general contractor method, to the foundation and embankment by using elements such as geosynthetic, reinforced soil and expanded polystyrene geofoam, which is lightweight and can be cut to whatever shape needed.

With this method, bridges can be built in a matter of days, not months. In the traditional method, concrete decks have to be cured for 30 days.

Prefabricated concrete decks and steel trusses and girders are also made offsite in controlled environments, allowing for more uniform components.

"You also don't have to worry about the weather as a restriction," Simkulet said. "They can work year-round." In some cases, prefabricated elements are made nearby but not directly on the bridge.



#### **DID YOU KNOW?**

#### "We have to follow the different pieces and inspect in each facility as well as on site."

Another benefit is that there's flexibility to the design, so it can be easily modified for unforeseen site conditions. The Federal Highway Administration also stated that with PBES there is less impact to the environment, since there is less heavy equipment on site.

Using a PBES method means increased safety for workers and the general public. A PBES reduces the amount of time in the work zone, and using a self-propelled mobile transport system eliminates having workers up in the air. According to Simkulet, this significantly reduces work zone time and workers being exposed to traffic.

The bridge system is reportedly easier to maintain, because there, are fewer parts. As for cost savings, the FHWA said they could be in the range of 25–60 percent depending on the standard of construction. One graph listed a price range of \$30-\$60 per square foot for precast concrete panel deck, and the cost to move a bridge span at \$200,000-\$900,000.

Having more than one project, to gain economy of scale, is recommended when initially moving to this method. As Simkulet pointed out, "What you don't have to pay for labor in the field, you're paying to the pre-caster — and for transporting to the site."

The Tappan Zee Bridge, which crosses the Hudson River in New York, is currently under construction using the ABC method.

"Every span is being built and assembled in Albany, barged down the river and then set in place. So it's moving very quickly."

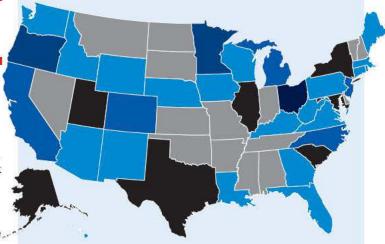
#### Disadvantages

Simkulet said the disadvantage he sees of building with a prefabricated system is the increased amount of plant inspections.

"Now we have to cover where everything is being assembled. We have to follow the different pieces and inspect in each facility as well as on site," he said. Still, the controlled environment is definitely a positive.

In New York, the goal for the accelerated bridge program is to limit the amount of time the bridges are shut down. That goal is currently being met with PBES.

"The impact to society is the reason the industry is moving in this direction," Simkulet noted.  ${\ensuremath{\underline{M}}}$ 



According to the Federal Highway Administration, there are 40 states with one or more prefabricated bridge element and system projects, seven states with 20 or more projects and 11 states actively pursuing this method as standard practice.

20+ PBES BRIDGES: New York, South Carolina, Utah, Texas, Maryland, Illinois and Alaska

16-20 PBES BRIDGES: Ohio

11-15 PBES BRIDGES: Minnesota and Oregon

6-10 PBES BRIDGES: New Jersey, North Carolina, Michigan, California and Colorado

1-5 PBES BRIDGES: Washington, Idaho, Wyoming, Arizona, New Mexico, Nebraska, Iowa, Wisconsin, Louisiana, Kentucky, Georgia, Florida, West Virginia, Virginia, Pennsylvania, Maine, Massachusetts, Rhode Island, Connecticut, Hawaii, Puerto Rico and Washington, D.C.

**STATES WITH NO PBES:** Nevada, Montana, North Dakota, South Dakota, Kansas, Oklahoma, Missouri, Arkansas, Delaware, Indiana, Mississippi and Alabama

Source: www.fhwa.dot.gov/everydaycounts

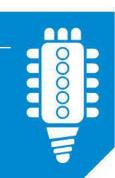




### Acuity Brands Lighting and Controls help El Paso reach sustainability goals, reduce operating costs

#### DETAILS

PROJECT: City of El Paso, Texas PROJECT SIZE: Over 11,000 luminaires and controls LIGHTING SPECIFIER: Johnson Controls LIGHTING MANUFACTURERS: Holophane, American Electric Lighting, Acuity Controls PRODUCTS: Autobahn ATBS and Washington Postlite LED luminaires and ROAM controls



**ABOVE:** When Texas legislators mandated public utilities reduce electric consumption by 5 percent a year over the next 10 years, the city of El Paso's General Services Department had to work quickly to modernize its lighting infrastructure. (Photo provided)



#### The challenge

#### The city of El Paso, Texas, partnered with Johnson Controls Inc. and Acuity Brands Lighting to help support the city's sustainability goals and modernize its infrastructure.

The city's General Services Department worked with Johnson Controls to comply with Texas Senate Bill 898, which mandates that public utilities reduce electric consumption 5 percent each year over the next 10 years.

"The city required a 10-year simple payback," said Harry Romine, Johnson Controls account manager — Municipal Solutions. "Reducing light pollution was also essential, as a city ordinance requires dark sky compliant luminaires."

Working under a tight budget, the city of El Paso secured funding for the remainder of the project by qualifying for a low-interest loan from the State Energy Conservation Office. The city used an Energy Savings Performance Contract and applied under the Texas LoneSTAR Revolving Loan Program, which benefits the city of El Paso and the state by reducing harmful emissions produced by the generation of electricity and the local byproducts associated with consumption of fossil fuels. As a result, El Paso funded an 11,600 unit LED street lighting project without increasing capital expenditures or creating taxpayer burden.

#### Integrated roadway lighting and controls solutions

When working towards sustainability initiatives, installing a complete roadway solution with multiple LED fixtures and controls can be extremely beneficial to maximize savings. The city of El Paso utilized the following roadway luminaires with integrated ROAM controls to achieve its lighting goals.

•Autobahn ATBS luminaires use breakthrough LEDs and precision-engineered optics to provide exceptional illumination while also saving energy. Perfect for replacing 50–150W HPS cobrahead incumbents, the ATBS weighs only 12 pounds and comes in three distributions. Typical service life of 20 years with 60 percent energy reduction can be expected.

• Washington Postlite LED — Glass luminaires are styled to replicate the acorn luminaires that lighted streets in the first half of the 20th century. Designed for superior light control, ease of installation and maintenance, they have a precision prismatic glass optical system for true street lighting performance as well as beauty. They are also available as a certified retrofit kit.

 ROAM is a wireless outdoor lighting management system that delivers the flexible control strategies and scalability required for municipalities. The system provides

an extensive set of diagnostic capabilities and allows the user to remotely control each of the fixtures to ensure optimal usage, as well as managing service through a work order management module.





#### The solution: illuminating the city of El Paso

The project's first phase called for the replacement of 10,600 high-pressure sodium cobrahead style fixtures located within the city's residential areas with ATBS Autobahn LED luminaires from American Electric Lighting. Lamp sizes on the old fixtures included 100, 150, 175, 250 and 400 watts, with the fixtures mounted on existing poles of different heights with varied spacing depending on the pole location.

Installing the lighting has the potential to reduce the city's energy and maintenance costs by 67 percent compared to the operating costs for the previous cobrahead units. According to Romine, the Autobahn LED

LEFT: The project's first phase called for replacement of high-pressure sodium cobrahead style fixtures in the city's residential areas with ATBS Autobahn LED luminaires. Reducing light pollution was also essential. (Photo provided)



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luminaires were selected based on quality, price and the projected 12-years or longer service life.

The city also installed 1,000 100-watt Washington Postlite II LED luminaires from Holophane in the downtown area to replace 175-watt metal halide decorative fixtures. The upgrade resulted in a 50 percent reduction in energy and 10 percent increase in light levels.

#### **ROAM** installation

Johnson Controls, which spearheaded the installation of the project, paired the Autobahn LED with Acuity Controls wireless ROAM system to maximize maintenance savings through enhanced monitoring. Johnson Controls is currently maintaining the LED luminaires and plans to reduce associated costs via proactive maintenance.

"ROAM eliminates the need to send out crews to look for outages or rely on reports from the public," Romine said. "The system will allow us to monitor individual fixture performance and proactively schedule maintenance typically before residents report an outage to the city."

Johnson Controls is using ROAM to monitor and control the Autobahn LED luminaires but may also use the system to monitor and control other lighting fixtures in the future. The luminaires, which are illuminated dusk to dawn, have a 10-year material warranty.

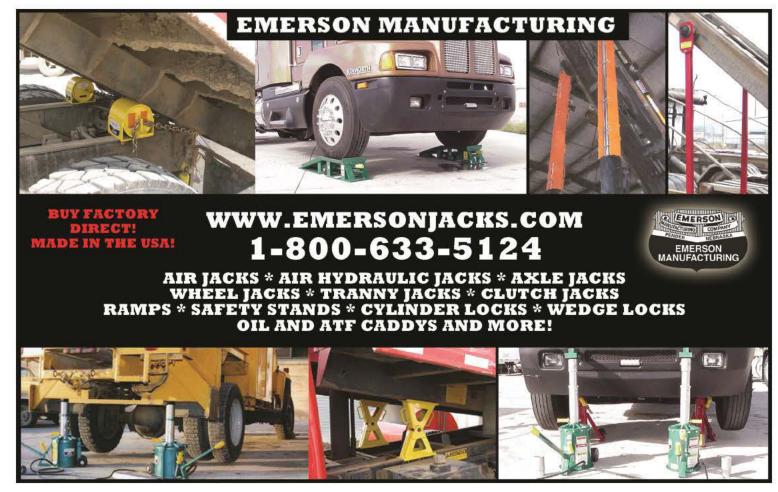
#### The result

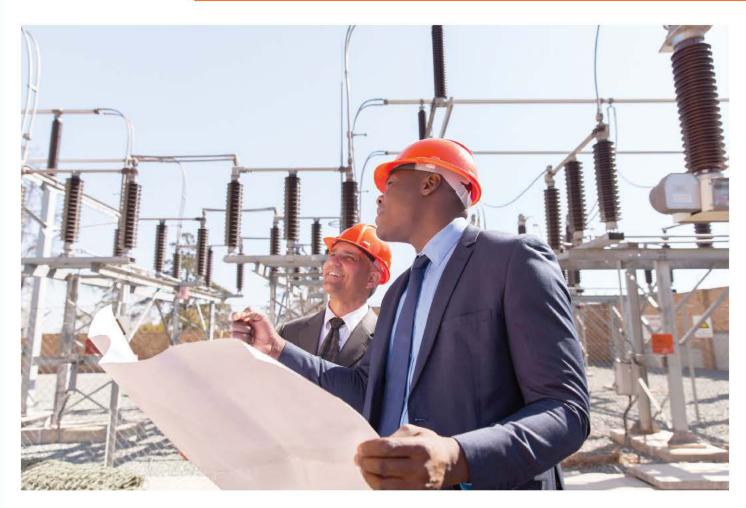
Romine reported the project has been a complete success.



**ABOVE:** In certain areas, the next priority was to preserve a historical aspect. Glass luminaires styled to replicate the acorn luminaires that lighted streets in the first half of the 20th century were installed. (Photo provided)

Information provided by Acuity Brands Lighting Inc.





### **'Power' play** Why communities reclaim utilities from private companies

Electric utilities are still the target of takeovers by communities looking for lower-cost service and a more responsive supplier. Acquiring the capability to provide one's own electricity is a lengthy process, however, and it accumulates upfront costs as well. (Shutterstock photo)

By JULIE YOUNG | The Municipal

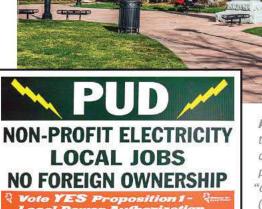
T'S EASY TO UNDERSTAND WHY THE buzz continues about municipalizing utilities. With environmental concerns, reliability issues, rate increases and the desire to infuse more renewable resources into the power grid, it's no surprise municipalities are looking to reclaim their electricity from private companies. It was a trend that was on the rise in 2013; but three years later, has the pendulum swung back? What motivates a community to make such a costly change? What are the advantages of this power play, and are there drawbacks to the conversion?

#### A lengthy process

According to Ursula Schryver, director of education and customer programs at the American Power Association, the municipal takeover of electric utilities continues; but the trend is largely dependent on the community itself and why it is seeking local control.

"It really varies over the years as to why communities do it," she said. "A lot of it is driven by a community wanting more environmentally friendly options, but others may be looking for better reliability or to create something that costs less than a private company. It just depends." One thing is certain: It's a lengthy process that does not happen overnight. When Winter Park, Fla., took over it's electric utility in 2005, it was months before everything was in place and reliability improved for its 14,000 customers.

Schryver said it all begins when a community leader, or the community itself, takes the initiative to make a change. From there, a feasibility study is conducted and a referendum is held to determine the logistics of a municipalowned utility and address other concerns. If both come out favorably, then the process moves forward — including establishing the necessary infrastructure and negotiating with



the incumbent utility to get out from under them. That negotiation can take years.

"Sometimes a utility is not a willing seller," she pointed out. "It's very unusual for them to come to an agreement on price right away, and it's very important to have the support of the whole community (because of the time involved). There are a lot of benefits to making this switch, but you have to know what your goals are and be in it for the long haul."

#### Eye on the prize

Most communities that create their own utility are small, like Winter Park; but on occasion a larger city does it as well. Boulder, Colo., is an example of a metropolis that decided to take control over its electrical service in order to meet environmental goals set by its residents.

In 2014 the city council unanimously decided to create a new public utility that will cost millions of dollars to implement, but one that is more in line with 21st century needs. After the decision was read, Councilman Macon Cowels said the residents who called for the change are envisioning a new world.

"If we want to wreck the natural systems, all we have to do is stick with the status quo. **>**  **ABOVE:** At the urging of residents, in 2014 the city of Boulder, Colo., accelerated an already-begun process to municipalize a privately owned electric utility and offer "cleaner, greener energy" options. (Sign provided; Shutterstock photo)

**BELOW:** More local control, increased reliability and lower rates are the top reasons why municipal agencies continue to look toward creating their own electric utility. (Shutterstock photo)



#### Benefits of electric utility <u>municipalization</u>

#### LOCAL CONTROL

- The city sets its own priorities in order to achieve the most reliable service at a reasonable cost.
- Success is measured by the amount of money that is invested into the local community.
- Public power utilities are owned by the people they serve and are accountable to the same.
- Citizens have input on the way in which the utilities are operated.

#### LOWER RATES

- Not-for-profit power companies typically have lower rates than their private counterparts.
- Revenues go back into the local community.
- They make contributions to the local government in lieu of taxes, transfers to the general fund, and/or free or reduced-cost services to the city.

#### **BETTER RELIABILITY**

- Because they answer to those whom they serve, public power utilities tend to be more reliable than privately owned utilities.
- When outages occur, there tends to be a lower response time.
- When a major outage occurs, publicly owned utilities tend to coordinate with other publicly owned utilities to create a broad network of mutual aid.

Source: blog.publicpower.org/ sme/?p=524#sthash.tfhVVlBy.dpuf







Most of the people in our town are saying we cannot keep doing this ... This is a high calling that we are doing," he said.

Other communities that have looking into the possibility are in the process of doing so or have already done it include Santa Fe, N.M.; the South San Joaquin Irrigation District in California; Hemiston, Ore.; and Jefferson County, Wash.

Despite the expense and delay, these communities say it's worth it. When Jefferson County leaders decided to consider a municipal electric utility in 2008, they believed it would have a favorable impact on the local The Jefferson County Public Utility District in Boulder went online in 2015. (Photo provided; website: www.jeffpud.org)

economy, be better for the environment and would create more jobs.

In a blog post written by Schryver, the Jefferson County Public Utility District began serving its 18,000 customers in 2013. In the two years since it has accomplished quite a bit. In addition to providing 100 percent carbon-free electricity, compared to the electricity provided by Puget Sound Energy prior to the change, it has hired 25 new employees; enhanced customer service; been responsive during storms; and has yet to raise rates.

Jim Parker, manager for Public Utility District No. 1 in Port Hadlock, Wash., confirmed that the change has gone well, but said it has not been a seamless operation.

"We only have 38 employees while other utilities have 100; but we are still working on personnel and trying to get the right people in the right places. It's been a lot of work for me, and I wish we didn't have to incur so much debt; but it's good for the community, and that's what it's all about."







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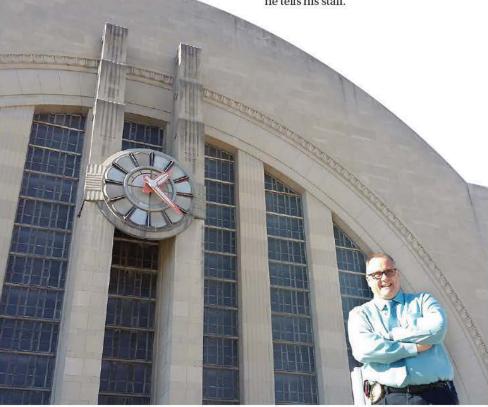
## A history of service for youth

By GARY CROUCH | The Municipal

Joe Middendorf is the director of security and public safety for a Cincinnati National Historic Landmark, Union Terminal, which houses the Cincinnati Museum Center. His purview also includes the National Underground Railroad Museum Freedom Center and the Geier Collections & Research Center, the CMC's consolidated collections storage and research facility.

Since the local Amtrak station is in Union Terminal, and the building is also used for weddings and special events during evenings and weekends, his department is one of two that works around the clock. A minimum of two officers are in the building at all times; more when the museums are open and for special events. "The officers are much more than security guards," Middendorf said. "They have to be engaging while vigilant to something that is out of place; (and) be helpful and friendly to our guests and staff while maintaining order.

"Community-oriented theory, where there is cooperation within departments to solve problems together, and Cincinnati Museum Center security, is everyone's business," Middendorf believes. "Let's work together to make Cincinnati Museum Center the safest," he tells his staff.



His law enforcement career began in 1983 with the Hamilton County Sheriff's Department. He worked as a jailer at the workhouse in Camp Washington. After putting himself through the police academy, he was hired by the Delhi Township Police Department and became the Drug Abuse Resistance Education officer, then a school resource officer. He was later nominated president of the Ohio School Resource Officers Association. He enjoyed a promotion to corporal, and retired after 30 years as the day-shift sergeant.

After retirement Middendorf worked at Western & Southern, where he had been previously employed part-time. There he helped create an armed security division. He learned of the opening for the position of director of security and public safety at Cincinnati Museum Center and has been at there since April 2014.

Middendorf was born and raised in Delhi Township, Ohio, where he coached track in the middle school and was a volunteer soccer coach. He was also very active in Scouting and received the Silver Beaver Award, given to adult leaders who have made an impact on the lives of youth through service to the council. In his free time he enjoys hiking and spending time at the beach.

His work with children was most rewarding to him, Middendorf said. First as a DARE and school resource officer, coach and Scout leader, and now at Cincinnati Museum Center, he continues working at a gathering place for kids.

"My most satisfying years as a police officer were those I spent in the schools. And now I can't be any happier working at Cincinnati Museum Center. The building itself is a national landmark. It contains priceless artifacts, but the most priceless are the people who work here and the guests who visit every day."

Former school resource officer Joe Middendorf, Delhi Township, Ohio, now enjoys working to accommodate the youngest constituency at Cincinnati's Union Terminal and the Cincinnati Museum Center. (Photo provided)

#### M Waste & Water Utilities

## Flint prioritizes getting the lead out



By SARAH WRIGHT | The Municipal

NFRASTRUCTURE IS A GROWING SOURCE of concern, whether pertaining to roadways or water and wastewater systems. Flint, Mich., became a visual example of the U.S.'s failing infrastructure last year, when it was forced to deal with a major water crisis and lead leaching into local businesses and the homes of residents. However, the city's government and residents have shown resilience in the face of the challenge.

During a presentation at the Michigan Municipal League's annual Capital Conference in March, Mayor Karen Weaver pointed out Flint's water crisis could have happened in any city in the U.S.

"I'm always saying that I'm sorry that we — that Flint is the example, but please, please learn from us because if you don't, you've failed your city." When it comes to crumbling infrastructure, she added, "We can't let the issue go away. We've got to keep (infrastructure) in the spotlight."

A Flint native, Weaver became the mayor in November. She has made addressing the city's pipes the first of two major tasks she wants to accomplish; the second is securing financial and other resources needed by Flint's citizens and businesses to recover. Despite the city's water supply having returned to Detroit's water system, lead remains a problem. Weaver noted during her presentation some residents still can't drink or cook with their water. For that reason, she has pushed to launch the city's Fast Start program.

#### They have to go

"The Fast Start initiative is to replace every lead and lead-tainted service line in Flint. And we're now finding that galvanized pipes are a problem," explained Weaver. "We're still working to figure out where lead solder and other types of materials may be creating issues for us."

The city, together with the Lansing Board of Water and Light — with strong support from Lansing, Mich., Mayor Virgil Bernero — have been training work crews on how to quickly and less expensively replace lead-tainted service lines with copper ones. The initial phase of the pipe replacement program was paid for through a \$500,000 contract the state of Michigan entered into with Rowe Professional Services Co., headquartered in Flint.

Since Weaver's plan launched in March, lead-tainted service lines have been replaced in 33 homes — meeting the goal



**LEFT:** Getting the lead out of Flint is a number one priority for Mayor Karen Weaver, who has launched the Fast Start plan to remove 15,000 lead and galvanized steel service pipes. Pictured center and from left, are General Michael McDaniel, lead on the Fast Start plan; Mayor Virg Bernero of Lansing, Mich.; and Weaver, removing one of the lead-tainted pipes. (Photo provided by the city of Flint)

**ABOVE:** Work to remove lead-tainted pipes began in March; so far, service lines to 33 homes have been replaced with copper pipes. The goal is to remove and replace 15,000 lines, but first the city must wait for funding to be made available. (Photo provided by the city of Flint)

for that time span. "We want to ramp that up though, because our goal is to replace 15,000 pipes within the year, at a cost of \$55 million," she stated.

Currently the city is preparing requests for proposals. Once complete, local contractors can bid on the work to replace pipes at another 400 homes, which will be paid for with \$2 million the state reimbursed Flint for what the city paid to reconnect to the Detroit drinking water system in the fall.

The city is also still waiting for state and federal lawmakers to enact legislation that would cover the \$55 million cost of the Fast Start plan. Should the bills pass they would lower the per-home cost to replace the pipes, since contractors would be bidding on \$55 million worth of work, rather than \$2 million. "Since state and federal lawmakers still haven't passed (the bills), Mayor Weaver must work with the money she has."

Kristin Moore, public relations director with the city, noted, "By refusing to appropriate the full \$55 million, it's impossible to get the best deal for taxpayers. But since state and federal lawmakers still haven't passed (the bills), Mayor Weaver must work with the money she has so far to move the Fast Start pipe replacement plan forward toward its goal of getting the lead out of Flint. That's what she is trying to do."

Weaver noted the \$55 million would not include the city's damaged water infrastructure, which Michigan Governor Rick Snyder said could cost \$700 million or more to replace or repair. For that, additional funding sources will be needed.

#### Flushing out the lead

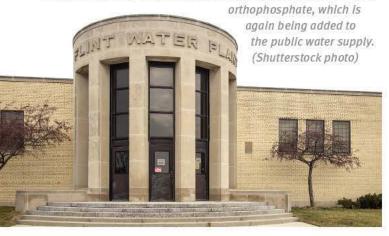
In addition to replacing pipes to get the lead out, Flint worked with the Environmental Protection Agency and the state of Michigan to encourage residents and businesses to flush the water in their homes for a total of 10 minutes a day. This helped remove lead particles and coat the pipes with orthophosphate.

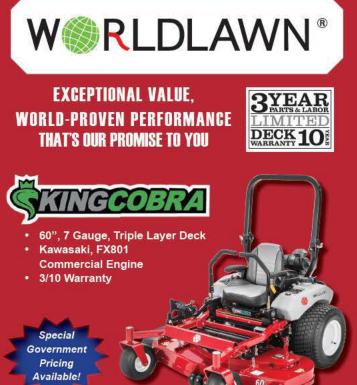
The "Flush your pipes for Flint" campaign launched in May and consisted of a 30-second television ad and 60-second radio ad that urged residents to "Take a Turn" to improve the city's lead-tainted pipes by running their bathtub and kitchen faucets every day for two weeks, starting May 13.

While the long-term goal is to remove the lead, flushing, Weaver said during a news conference, is "an important intermediate step" since it helps reduce the lead levels in Flint's water. Additionally, Snyder announced the state would pay for water used by Flint residents during the month of May to encourage them to participate in the flushing effort.

The city also made it clear to residents during the promotion of "Flush your pipes for Flint" it remains dedicated to the removal of lead-tainted service lines.

Flint worked with the EPA and the state of Michigan to encourage residents and businesses to flush the water in their homes daily during May to help remove lead particles and coat the pipes with







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#### Making the most out of a bad situation

While the water crisis will have long-lasting impacts on Flint, the city is trying to bring something positive out of the situation—namely the Flint WaterWorks program.

The program officially launched March 6 with a host of community partners and Chelsea Clinton on hand. It will provide employment for Flint youth between the ages of 16–24, who will distribute clean water and healthy food and nutrition information, and provide assistance as Flint restores residential services. Flint WaterWorks was inspired by and developed in partnership with Hillary Clinton, whose team helped Weaver as she worked to establish the public-private partnership.

"I am so pleased to begin the Flint Water-Works pilot project this month and to give Flint teens and young adults an opportunity to gain work experience and skills training while making life better for Flint's residents," the mayor said during the launch. "People in Flint have had to rely on bottled water for



drinking, cooking and bathing for far too long while dealing with the city's lead-tainted water, and we must help them get their damaged pipes replaced and provide the water, healthy food and nutrition information they need." The Detroit Water and Sewerage Department is supplying water to Flint during the interim, but lead remains a problem. For that reason, Mayor Weaver has pushed to launch the city's Fast Start program and replace every lead and lead-tainted service line in the city. (Shutterstock photo)



#### "Our goal is to replace 15,000 pipes within the year, at a cost of \$55 million."

WaterWorks will also be tied into Weaver's Fast Start initiative. "We're going to be working with Michigan Works program. These young people will also be in an apprenticeship program, if they so choose, where they are going to be paired with plumbers and pipe fitters and will learn a skill," she said, adding hopefully the youths will choose to stay in Flint with their skills. If they don't, they will be contributing members of any community to which they move.

"The people in Flint are not giving up on our city; we are not giving up," Weaver asserted during the Capital Conference. "Before this water crisis struck, Flint was starting to see new restaurants, growing entrepreneurship and a growing faith in the future. That is something we are going to keep going. We've got to. It's not something I'm doing by myself. I'm doing it because I have a strong city council behind me and we are working together. Even though we don't have all of our powers, you see how powerful we can be when we are together. I'm determine to put us back on the road to recovery, because for me Flint has always been home."



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### The tip of the water <u>infrastructure iceberg</u>

Flint's deteriorated water infrastructure is not unique, agreed Tom Hickmann, P.E., director of engineering and infrastructure planning with the city of Bend, Ore., and Eric LaBelle, P.E., Kennebunk, Maine, public services director. Both men are members of the APWA Water Resource Management Committee. "It's a geographic problem that is worse for older communities," Hickmann said, noting it's more an issue for cities on the East Coast and in the Midwest than cities on the West Coast. "In 2005, (Bend) still had woodstave pipes, but we got rid of them. We have different problems than lead pipes."

"Many cities don't know the size, age and type of material (of their pipes); or the information they have is questionable."

Municipalities have barriers in place to prevent the leaching of lead into citizens' homes. "What happened in Flint was that every safety barrier got crossed," Hickmann stated. One such barrier was the sudden departure from adding orthophosphate, after the water source had been switched: that decision was made by the city's state-appointed emergency manager.

"The real challenge is where the threat (of lead) is: on service lines, which extend from the main to the home," he noted. Municipal governments typically aren't responsible for funding repair or replacement of leaching service lines; rather, they assume responsibility only for the mains, which typically don't contain lead — except for a few older systems that have lead joints. "Usually it is up to the homeowner to pay." To maintain the water system and businesses' and residents' service lines, orthophosphate is added to the water.

"Orthophosphate basically reacts with metal and other materials; it coats and prevents leaching," LaBelle said, noting it takes about a year and a half to build up in the pipes.

When Flint switched to a morevolatile water source— the Flint River— and ceased using orthophosphate, the protective coating gained during previous treatments was stripped away, allowing lead to leach.

"In general, when designing a water system, you want the highest quality of water — not just for health, but to decrease treatment cost," Hickmann said.

Cities are required by the Environmental Protection Agency to regularly test for lead and other harmful



During a presentation in March, Flint, Mich., Mayor Karen Weaver pointed out her city's water crisis could have happened anywhere in the U.S. — and infrastructure and water engineers tend to agree. (Shutterstock illustration and photo)

chemicals, which maintains a list of chemicals that can't go beyond certain caps.

"When we test in homes, we want the water to stay stagnant for about 12 hours," LaBelle said. They then typically draw kitchen faucet water samples from randomly selected homes. "We target homes built before the era of 1986. Those homes are more apt to have lead."

He noted homes are more likely to see traces of lead since the mains are constantly flowing and do not allow for stagnation. If a home or multiple homes test positive, the city can add in additional chemicals to target the lead or other undesirable chemicals.

"On the treatment side, first we'd adjust the pH to six and a half, seven and a half or to eight — sometimes higher than that," LaBelle said. The higher the pH level the less acidic the water is, making it less corrosive. This is done by adding sodium carbonate.

From an operations standpoint, cities also regularly flush the lines. "In our community we flush our hydrants, allowing that water to flow. We do that once a year and also test," Hickmann said.

"There is little political will or desire to set aside money each year to replace aging systems," he continued, noting often bandages are put in place. In insistences where a 50- or 100-year-old system is in use, local governments can get sticker shock when the bandages no longer work. "It's a major investment that is surprising them—it shouldn't." He suggested municipalities routinely set aside 1 to 2 percent to cover such expenses. They should also complete critical analyses.

"Some pockets are far more vulnerable than others," Hickmann said. This makes critical analysis all the more important to identify and then systemically address those vulnerable sections.

He noted, however, there are no standard asset management guidelines in the U.S.

"Many cities don't know the size, age and type of material (of their pipes); or the information they have is questionable," he said. "That makes critical analysis harder. You have to get the data."

Once that data is in hand, cities can strategically and systematically address their water infrastructure needs while gaining a clear picture of the funds required to grapple with current problem areas — and plan for future concerns.

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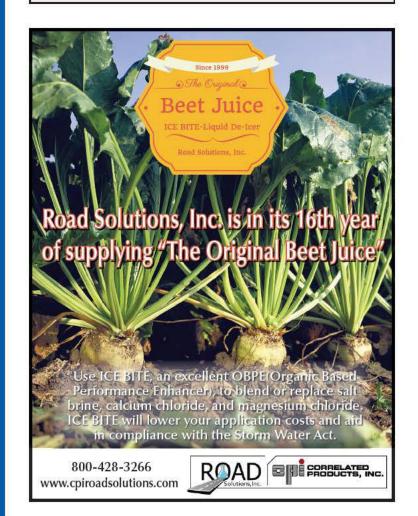
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## **Centralizing a decentralized fleet**

By JODI MARLIN | The Municipal

In the world of fleet management, the issue of the centralization vs. decentralization raises its head cyclically. Fleet centralization can be organizational, procedural and/ or limited to policies. In most cases it's characterized by less duplication, more efficient spending and use of personnel, and a more influential seat of power during budget discussions. (Shutterstock photos)

**VER THE PAST COUPLE OF** decades many municipalities have centralized support services, including IT, procurement, finance and accounting — even facilities. Fleet has not escaped the trend.

That centralization can happen in the form of policy, procedures and/or organizational structure. During an address to fleet managers at the National Association of Fleet Administrators conference in April, Randy Owen, CAFM, senior vice president at Mercury Associates and a fleet management consultant, discussed the process and noted that even large fleets that have not centralized organizationally may have centralized procedurally, most likely in their reporting responsibilities or policies.

Historically, Owen noted, three main rationals are employed when organizations opt not to centralize:

- Within a small department, a decentralized fleet service can be customized to meet the particular needs of that department.
- Fleet mechanics will come to know the department-specific user base, the vehicles and functions they support and the culture of that particular organization. This will result in a higher quality of services.
- The head of a decentralized department can set the level of staff and resources on his own; he can decide what the level of funding and staffing should be, thereby setting the service level at exactly where he or she wants it and avoiding any kind of priority conflicts.

"I think while all of these have merit ... they ignore the trend toward economies of scale that have happened in capitalist economies," he said.

During the centralization process, required investments must be identified so that the costs and implications are fully understood. It's easier to obtain the funds needed for the process at the beginning, rather than later. (Shutterstock photo) Henry Ford's revolutionary production line was among the first to lay out the advantage of paying attention to economies of scale. Ford demonstrated that there are cost advantages, as organizations scale up and get larger, that drive down the unit cost of output and the cost of each labor hour, making organizations more productive on a cost basis because of the ability to spread fixed costs and overhead costs over a larger volume of services or a larger production of output. It has become a tenet of modern economies and industry.

Application of the economies of scale paradigm to fleet translates into a potential to reduce overhead. In cities where, for example, there's a separate code enforcement, public

works, fire and police fleet, there are likely four fleet managers, systems managers, data analysts, spec writers, shop supervisors and parts people. These positions, to a greater or lesser extent, comprise a duplication of overhead.

In a centralized organization, cost savings also result from the sharing of expensive resources such as shops, fuel sites and fleet systems.

"That larger organization is more important and is generally, I think, better able to obtain the investments that it requires to support its customers."



### Tactics for making centralization work



 Have specific mechanics assigned to large customers. When Charlotte, N.C., took over the fire department fleet under Owen's watch, one of the ensuing initiatives was to transfer over one fire department mechanic and have a few other mechanics retrained, ASE-certified and specifically designated to work on fire vehicles. They got

to know the apparatus operators, the captain and the equipment well so the fire department did not feel like it was losing the ability to talk to a mechanic about what was wrong with an apparatus.



• During and after consolidation, an important step for the manager of the centralized fleet to take is to establish a group or committee of fleet stakeholders, managed in an inclusive way.

"Don't let the fleet manager act as the 'car czar,' dictating to customers and ticking them off

because eventually the water cooler complaints will work their way up the chain of command and undermine even noble efforts," Owen said. "It doesn't take a lot of effort to have even quarterly meetings with your customers."

He added, "Even if you have to dig into your own pocket and buy some pizzas, your attendance at quarterly meetings will triple. Of course you're still going to hear some moaning and groaning, but I'd much rather have customers at the table and engaged, passionate enough to tell me what's going wrong, rather than telling me everything is OK but telling the city manager that I need to go."



 Owen believes that a triggering event is required for centralization to take hold, such as a new city manager, major vehicle-related incident or a key retirement. Centralization is hard: it's emotional and political. A trigger that comes from outside the fleet departments, from someone who doesn't have a dog in the fight, usually improves reception of the idea among stakeholders.



• Understand and accept that during centralization, the programs that will be combining will inevitably feel as though they have lost a fight. Take the extra step to make sure those programs have a seat at the discussion table and their voice

is heard. "I think you'll find that they'll cooperate more, and that you'll have a more sustainable organization if you do that."



• Budgets and finances must be carefully scrutinized. In small organizations, things sometimes fly under the radar that perhaps shouldn't; these are likely to be discovered during the centralization process. Know in detail what the costs are of any organization that's going to be merged in,

and what those costs are going to mean for the new budget.

#### continued from page 45



Any sort of organizational centralization is a very large project. Success depends on treating it very formally in regard to the project plan, structure, mission statement, breakdown of tasks with deadline date and budget. (Shutterstock photo)

Formerly, as fleet manager for the Los Angeles County Public Works Department, Owen worked on a centralization project that involved pulling together a flood district, road department, county engineer, waste management district and airport district. One of the first orders of business under the new organizational model was to close redundant fuel sites.

"As silly as this sounds, if you worked for the road department, and across the street was a flood control district yard, you could not fuel at their station and they could not fuel at (yours). And there might have been a city of Los Angeles yard on the opposite corner, but the county couldn't fuel there and the city couldn't fuel at our sites."

Beyond the sharing of resources, centralization lends itself to a reduction in duplication of effort, the sharing of knowledge and best practices and a shared focus on the core mission.

Leaving fleet management to a fleet professional also tends to mean leaving it in the hands of someone who is trained, qualified and able to focus exclusively on fleet-related needs. In contrast, when fleet services are decentralized, there is a danger that any given department head is spending more time managing the support service than on core mission function.

When it comes to management systems, Owen readily admits to believing bigger is generally better: in part because a city with one large fleet organization instead of three small ones will probably be more successful at obtaining a sufficient budget and resources and setting policy.

"It's a larger organization, supported by its customers, making the business case to the city or country manager or elected officials that we need this kind of budget to replace new vehicles, we need this kind of shop, we need a fleet system. That larger organization is more important and is generally, I think, better able to obtain the investments that it requires to support its customers and become an effective fleet organization."

Because centralized operations are more capable of managing changes in work flow, centralization saves money during the occasional



"One size does not fit all. The parks department needs something different than the police department does."

low tide by shifting employees to projects that have come in from another department.

Another way to realize the cost savings of centralization, while preserving the customization features of department-specific fleets, is to customize services by customer base.

"One size does not fit all. The parks department needs something different than the police department does... Some organizations have spares, some organizations have no spares. So the service level commitments to an organization that has

At the outset, carefully document current and desired service levels so everyone knows what the baseline is and how that level will be maintained or improved from here on out. (Shutterstock photo) spares ought to be different than to a customer who only has one hydrovac sewer truck, for instance. That becomes a much more important vehicle than if there's a backup." Service level metrics must be measured and tracked in this scenario so it can be reported that the centralized structure is maintaining or even increasing the level of service that the department enjoyed previously.

"As long as we can agree on what service level you need, and I have the resources and the managerial capacity and talents to meet those service levels, then the customer organization should be OK," is Owen's mantra.



## **Pavement Condition Index**

By BARB SIEMINSKI | The Municipal

M

Streets & Snow

It's summer again, which means that the Midwest and outlying and coastal states are out in force to repair the damage caused by winter potholes and wear-and-tear on local roads.

> Among the factors affecting pavement performance are subgrade soil, pavement material attributes, moisture and temperature. (Shutterstock photo)





When it comes to evaluating pavement for maintenance, resurfacing or rehabilitation, the use of alternate methods depends on community preference. When properly employed, the Pavement Condition Index provides accurate and objective view of actual conditions. (Photo provided by BASF Corporation)

Common rigid pavement issues that are rated by the PCI include joint deficiencies like spalling, faulting, cracking, joint seal damage, longitudinal and transverse cracks, slab cracking, corner breaks and "D" cracking. (Shutterstock photos)

**EFORE PATCHING OR RESURFAC**ing, many communities will consult the Pavement Condition Index. Mohamed Shahin, in his book, "Pavement Management for Airports, Roads and Parking Lots" defines PCI as "a numerical rating of the pavement condition that ranges from o to 100, with o being the worst possible condition and 100 being the best possible condition." The pavement can be distressed by cracks, construction deficiencies, surface weathering, environmental issues or an amalgamation thereof.

A 2011 report, "Street Condition Ratings: Their Use Among North Carolina Cities" by David Ammons and T. Dwight Brinson, noted that "more than two dozen different systems exist, with labels such as Pavement Condition Index, Pavement Condition Rating, International Roughness Index, Pavement Distress Index, Pavement Serviceability Rating and Surface Distress. Not only that, but they observed that some cities did not rate their pavement at all, citing insufficient staff time or capacity as part of the reason for their decision. Some also mentioned the expense of such ratings."

However, the Pavement Condition Index is still widely used by local government agencies, airports and other smaller agencies responsible for managing pavements, according to Hari Kalla, P.E., director of the Office of Asset Management, Pavement and Construction of the Federal Highway Administration.

"Its advantage is that the system has great documentation and is relatively low-cost to implement. The disadvantage is that it is labor-intensive for large systems and lacks the sophistication of the larger systems used by state agencies," he noted. "Its advantage is that the system has great documentation and is relatively low-cost to implement."

"Pavement management systems provide decision makers with information about the financial obligations of owning and operating roadways. PCI is one of the methods to quantify existing pavement conditions that can be later used to estimate how long the pavements will last and how much funding will be needed to keep them in satisfactory condition. It also provides agencies with an understanding of how well alternatives, such as preservation programs, will work in the local community."

Whether alternate methods should be used for evaluating pavement depends on the community.

"What is critical is to capture the most accurate and objective view of actual pavement conditions," said Kalla. "When properly employed, PCI can do that. There are a number of alternate methods that also work very well, each with its own specific issues, costs and labor requirements."

In addition, Kalla referred to the FHWA Guidance on Highway Preservation and Maintenance document published Feb. 25 for the following definitions: ► 1



What is critical	<b>Condition Category</b>	Pavement Condition Index		Conoral Treatment Strategy	
		Upper Limit	Lower Limit	General Treatment Strategy	
is to capture the	Excellent	100	86	do nothing / corrective maintenance	
	Good	85	75	preventative maintenance	
most accurate and	Fair	74	58	resurface	
objective view of actual	Poor	57	40	rehabilitation	
	Failed	39	0	reconstruction	
pavement conditions."				(Data provided by dpw.lacounty.gov)	

**PRESERVATION** consists of work that is planned and performed to improve or sustain the condition of the transportation facility in a state of good repair. Preservation activities generally do not add capacity or structural value, but do restore the overall condition of the transportation facility.

**MAINTENANCE** describes work that is performed to maintain the condition of the transportation system or to respond to specific conditions or events that restore the highway system to a functional state of operation. Maintenance is a critical component of an agency's asset management plan and is comprised of both routine and preventive maintenance.

**ROUTINE MAINTENANCE** encompasses work that is performed in reaction to an event, season or overall deterioration of the transportation asset. This work requires regular, recurring attention.

**PREVENTIVE MAINTENANCE** is a costeffective means of extending the useful life of the federal-aid highway. Some examples of emergency pavement maintenance include tending to washouts, rigid pavement blowups, pumping and water seepage, buckling, freeze-thaw damage and anything that poses a safety hazard.

Other factors affecting pavement performance include subgrade soil, pavement material attributes, moisture and temperature.

Shahin noted that standard practice is to evaluate roads and parking lots with PCI surveys. "The PCI provides a measure of the present condition of the pavement based on the distress observed on the surface of the pavement, which also indicates the structural integrity and surface operational condition — the localized roughness and safety."

The Kentucky Transportation Cabinet has three asset collection vehicles in its fleet. These vehicles collect data automatically, on an annual basis, of the interstate and NHS routes; and on a two-year cycle for all non-NHS routes. Average yearly collection, according to the website, is 35,000 lane miles. This data collection includes automated pavement distress, rutting, cross slope, IRI, faulting, curve and grade, GPS data and roadway images. In addition to network testing, the KYTC also performs IRI acceptance testing for new construction.

Kentucky, however, is not a PCI user, according to Tracy Nowaczyk, operations and pavement management branch manager.

"Kentucky does not use PCI as defined by ASTM methodology. Kentucky uses a pavement priority score that was developed by the University of Louisville to assign a single score to pavement sections and prioritize pavement projects," said Nowaczyk.

"The pavement priority score combines pavement metrics such as cracking distress measures, roughness, rutting and faulting with individual weights."

As far as size of a city making a difference in PCI's usefulness, Nowaczyk continued, "Any region faced with deteriorating pavement networks and restricted funding would benefit from a system of prioritization based on objective pavement condition data and a defined process to select and prioritize projects."





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## Calling 'Code Green' on mental health

#### By JOHN DAVID THACKER | The Municipal

"The sounds of the sirens still make me cringe. I was an EMT for four years, then a medic for four more ... I've suffered from depression on and off for as long as I can remember and yet I always managed to get by, to fight. Now I'm just exhausted. I don't want to fight anymore. I don't want to do anything except sleep, yet still there the nightmares come ... "

- Diana, paramedic, eight years in EMS

These words are from one of hundreds of stories collected and published by The Code Green Campaign, a national nonprofit organization dedicated to raising public awareness of the high rates of mental health issues, substance abuse and suicide among emergency medical services, firefighting and law enforcement personnel.

The campaign's storytelling project provides first responders with the opportunity to relay personal struggles they have experienced on or because of the job. The stories are published anonymously so that other responders will read them and understand that they are not alone in their own struggles. They also help responders who have not experienced the issues firsthand to understand what their colleagues are experiencing.

A new story is published every Monday, Wednesday and Friday on the campaign's website and Facebook page. Over 300 stories are currently available, and new submissions from first responders looking to share their experiences are welcome.

Ann Marie Farina is a paramedic in Spokane, Wash., and president of The Code Green Campaign. In 2014, one of her coworkers committed suicide. The Code Green Campaign was founded later that year by Farina and other EMS professionals who were concerned about the high rates of post-traumatic stress disorder and suicide among their peers. The name "Code Green" was created by combining the color of the green awareness ribbon used by mental health advocates with the code alerts used to designate an emergency patient. Code Green is a call to action on the mental health of first responders.



While studies have been conducted on the mental health of police officers and first responders following large-scale disasters such as Hurricane Katrina and the Oklahoma City bombing, no similar large-scale studies have been conducted on EMS and firefighting teams engaged in everyday operations. Yet the campaign estimates that 15–25 percent of first responders have been diagnosed with PTSD. The rate of suicide among first responders is suspected to be as high as two to three times that of the general population. Substance abuse is also common.

While it started as a storytelling project, The Code Green Campaign quickly expanded to include education and advocacy.

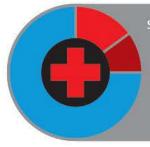
"Our original plan was to do the storytelling project on social media ... and use that to help reduce stigma," said Farina. "I think we existed for about 48 hours before it just absolutely blew up and we realized that we had something much bigger on our hands. We were not going to be just a storytelling project."

The campaign's volunteers, first responders themselves, aim to teach other public safety employees how to care for their mental health and how to recognize mental health issues in their peers. They offer a two-hour continuing education course for public safety departments. The course is offered in-person or online and teaches ways to develop resiliency and recognize the signs of a peer in crisis, and how to initiate helping conversations.

"A lot of people just aren't comfortable having that conversation," Farina said. "They're afraid they're going to make things worse. They're afraid they're overstepping their bounds. They don't know how to start. So we teach people the steps of how to sit down, have that talk — to prepare them so that they can go in with a plan, which tends to make people much more comfortable being able to do that."

The campaign also lobbies for systemic change in how mental health issues are addressed by public safety agencies.

"We would really like to see more education," said Farina. "One of the things we just recently advocated for is adding mental health, mental wellness and resiliency education to the initial EMS training requirements and the recertification requirements. But that's one of those changes that takes time. In the meantime, we would really like to see more agencies providing education for their



Studies have been conducted on the mental health of police and first responders following large-scale disasters, but no similar studies have been conducted on EMS and firefighting teams engaged in everyday operations. Estimates are that 15–25 PERCENT of first responders have been diagnosed with PTSD, leading to suicide, substance abuse and regular binge drinking.



**ABOVE:** Ann Marie Farina, president of The Code Green Campaign, and Flona Campbell, secretary, increase awareness of the risks to good mental health that are inherent to the EMT profession by promoting the campaign at first responder conferences. (Photo provided)

**ABOVE LEFT:** *EMTs* and other first responders can't unsee some of the tragic scenes they are called out to. The first and easiest way to keep such incidents from disrupting one's psyche and leading to detrimental behavior is to talk about how the memory is affecting you — either with coworkers and management, or with a mental health professional. (Shutterstock photo)

people: either creating peer support teams or mental health first aid, anything that really gets it out there, reduces the stigma and improves the atmosphere for people to communicate with each other when they are having problems."

Western Berks Ambulance Association, Berks County, Pa., has utilized resources from the Code Green Campaign. It has placed Code Green Campaign posters in the workplace, and the keys for every vehicle in their fleet are on a Code Green keyring to communicate the department's commitment to caring for its own.

"It helps bring awareness," said Chief Ed Moreland. "We're in that tough-guy culture, and although you can't unsee what you've seen, none of us wants to admit that we really have any problems. So this is kind of the **>**  'Hey, let's pull the shade off of that tough guy image'—it's costing some people their careers. In some cases, self-destructive behavior pushes them out of this line of work."

One of the greatest obstacles to providing mental health services to first responders is the stigma against asking for help.

"Part of the culture of EMS is that we are the helpers, we don't seek help," Farina said. "People are worried that they will lose respect or that their job will be threatened if they ask for mental health resources.

"One of the things we run into is the attitude of 'Well, if you can't handle it, just get out,' but that doesn't actually solve the problem," she said. When public safety agencies provide their employees with training and resources to maintain their mental wellness and resiliency, first responders and the public benefit. "It is worth spending the money on the education to keep your people on the job. We promise."

Chief Moreland agreed. "If we don't take care of our staff, we're not going to be here to take care of the public. It's OK to have a problem, and it's OK to ask for help."

The website of The Code Green Campaign offers a database of national and local crisis resources such as crisis hotlines, treatment centers and retreats. For public safety employees experiencing crisis, the campaign suggests calling Safe Call Now, a 24-hour crisis referral hotline for emergency services personnel, at (206) 459-3020.



Campbell and Annie the goat promote tactics for coping with the stress and trauma of EMT work at a recent event. (Photo provided)





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#### M Holidays

## Springfield's patriotic parade



By ERIN DOZOIS | The Municipal

**ABOVE:** The rural community of Springfield, N.Y., near Cooperstown, celebrates America's Independence Day with an annual parade that has been named one of the best in the country. (Photo provided)

**LEFT:** The Camden Continentals Fife and Drum Corps set the pace and ring a historical note at the annual Springfield Fourth of July parade. (Photo provided)

**BELOW:** Children love to come out for the decorated bike portion of the parade. (Photo provided)

#### Across the country, fireworks light up the sky July 4 in celebration of the nation's birthday; but one small town in New York has grabbed headlines for a historic Independence Day celebration all its own.

Springfield's Fourth of July parade was named one of the best by Conde Nast Traveler magazine in 2013 – a rather impressive accomplishment for a town of only around 1,300 people.

"Springfield is mostly rolling hills and pristine farmland," said Andrea House, publicity coordinator of the Springfield Fourth of July committee. "It's home to

an Amish community whose horsedrawn carriages are a common sight on the roads in town."

### How does this parade thrive in such a small town?

Debra Ann Miller, chairman of the committee for 35 years and counting, maintains the success of the festivities is due to its loyal volunteers.

She and husband Jonathan work tirelessly for months to get the celebration funded and organized. They join with a small but dedicated group of individuals, all of whom play a necessary role — including Town Supervisor William Elsey and Committee Secretary



Janet McCarty and her husband, Keith. The McCartys will be honored in 2017 as grand marshals of the parade.

"We divide up a large job and just get things done," Miller said. "It is a pleasure to work with such a group."

"Many have fireworks and other celebrations, but we have one of the longest-running July 4th parades in the country."



The judges get to work naming 2015's most creative parade entry winners. (Photo provided)

The volunteers are responsible for transforming one quiet, little street into the place to be on the Fourth.

"The parade takes place at the hamlet of Springfield Center," said House. "It's a quaint collection of a couple antique and gift shops, an inn, an auto repair shop, two churches, a post office, fire house and our community center. However, on each Fourth of July the little hamlet is completely transformed as approximately 4,000 people converge to celebrate American Independence, just as they've done here for over 100 years."

Miller said funding for the event comes from individual contributions, local grants, ticket sales from the Glimmerglass Festival's "Town of Springfield Appreciation Concert," proceeds from Brooks' chicken barbecue dinners and Springfield Fourth of July T-shirt and memorabilia sales.

#### What makes Springfield's parade stand out?

"One of the things that makes our parade special is the fact that very few communities in the U.S. have a parade on the Fourth," said Miller. "Many have fireworks and other celebrations, but we have one of the longest-running July 4th parades in the country."

"The Springfield Fourth of July Parade represents the best qualities of small-town America, preserving the traditions of years past with pride," added House. "Watching the parade, people step back in time to the parades of their childhoods or that of their parents or grandparents. Our visitors are struck by the spirit of the town and the celebration, which, no matter your political affiliation, will make you proud to be an American."

The energy in Springfield has become contagious over the years. Participants now travel from all across the country to bring life to the committee's vision.

"We have had all sorts of unique entries over the years, from Uncle Sam on stilts to a lighthouse float that came to us from a California winery celebrating its 40-year anniversary," said Miller. "The parade now runs over an hour and includes about 75 entries, although we had 100 entries for our 100th anniversary." >

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CONSISTENTLY LEADING THE WAY ...







Springfield's Fourth of July festivities spill over into other activities as the day progresses. Games and food follow at the community center; fireworks wrap things up in the evening. (Photos provided)

#### Where did it all begin?

The famous Fourth of July parade began all the way back in 1914. Prior to its inception, the town of Springfield celebrated its independence with a bicycle parade, along with various other sporting events such as baseball and a greased pig chase. The first official Springfield Fourth of July Parade was led by a local brass band and followed by a long list of floats and marching groups. The event concluded with a handsome display of fireworks.

"Since then, the Springfield parade and celebration has continued annually," said House, "except for in 1943 when wartime gas rations prevented it and in 2008 when it rained torrentially the whole day."

#### What does it feature today?

"The parade itself celebrates the everyday heroes of American life," House continued. "Fire departments from all over the area are represented with marching groups and fire trucks, new and antique. Many veterans' organizations are represented by marching groups as well. Local organizations such as the library associations, environmental "The parade now runs over an hour and includes about 75 entries, although we had 100 entries for our 100th anniversary."

conservation groups, Girl and Boy Scouts, family farms and businesses, church groups and arts venues enter floats in the parade.

"There are clowns, princesses and new surprises every year," he said. "There is always a wonderful collection of antique automobiles and tractors; children ride decorated bicycles; and lastly come the horse-drawn carriages and horse riders. Cash prizes, ribbons and trophies are awarded to the best in many categories as determined by a team of judges." Parade decorations are expected to reflect the yearly theme, which this year is "Star Spangled Celebration."

#### Why don't you stay a while?

If the parade weren't already enough, Springfield's festivities spill over into other activities as the day progresses. Spectators follow behind it to a celebration that takes place at the Springfield Community Center. It consists of a flag raising ceremony; singing of the National Anthem; and patriotic music by the Camden Continentals Fife and Drum Corps, the Cooperstown Community Band and local musician Fritz Henry. Displays inside the community center include the annual Fourth of July quilt show, a Springfield Historical Society Exhibit and a collection of Revolutionary War era artifacts from the Fort Plain Museum and Historical Park. Taking place on the lawn are a variety of games and raffles, the Utica ZooMobile, bounce houses and face painting. Fourth of July parade merchandise is for sale.

"And of course there's plenty to eat," said House. "Hot dogs, hamburgers, homemade pie, strawberry shortcake, popcorn, Snocones and the famous Brooks' barbecue chicken dinners. All vendors are volunteers for local nonprofit organizations and are raising funds for local programs, including the parade."

Since the parade's 100th anniversary, the Fourth of July committee has added a free evening concert and a well-attended firework display held on the beach at Glimmerglass State Park.



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#### M Conference Wrap-Up

## The Show for Snow 2016



A celebration of the life of urban analyst Jane Jacobs took place in Hartford, Conn., in May as one of several enriching and educational events that characterized this year's gathering of APWA snowfighting professionals. Hartford, one of the oldest cities in the U.S., proved a receptive location in which to honor the pioneer of urban studies.

The Show for Snow brought together snowfighters from every corner of the winter maintenance community for four days packed with the newest equipment and products, opportunities to learn and chances to catch up with winter maintenance professionals from across the country. Participants could also attend a special, extended education session to hear what strategies were employed and what lessons were learned Snow professionals from across the country gathered in Hartford, Conn., May 21–23 for the APWA "Show for Snow" conference and exhibition. (Photo by Rees Woodcock)

during New England's record snowfalls this past winter.

The group paused during its agenda to extend a warm welcome to new snow conference manager Lysa Byous, and on another day a panel of experienced snowfighters gathered a large audience to voice the reasons behind why members of the public don't often recognize their public works employees or give them credit for the level of experience, education and pride they bring to every task. A keynote session on Tuesday morning, presented by comedic motivator Steve Rizzo, made a case for belief in self that resonated with the professional audience.

Amateur photographers were encouraged to send in their best winter maintenance photos from the 2015/16 season for the first Snow Conference Photo Contest. Winners were announced by APWA President Brian Usher at Tuesday's general session and are now viewable through the APWA website.

If you weren't able to make it this year, plan to catch the next gathering of knowledgeable winter weather warriors April 23–26 in Des Moines, Iowa. It will be the sugar rush a snow crew needs to stand up to another unpredictable winter.

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## Upcoming Editorial Calendar

August 2016 *Public Safety* Deadline Friday, July 1 September 2016 *Going Green* Deadline Monday, August 1

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October 2016 Parks & Recreation Deadline Friday, September 2





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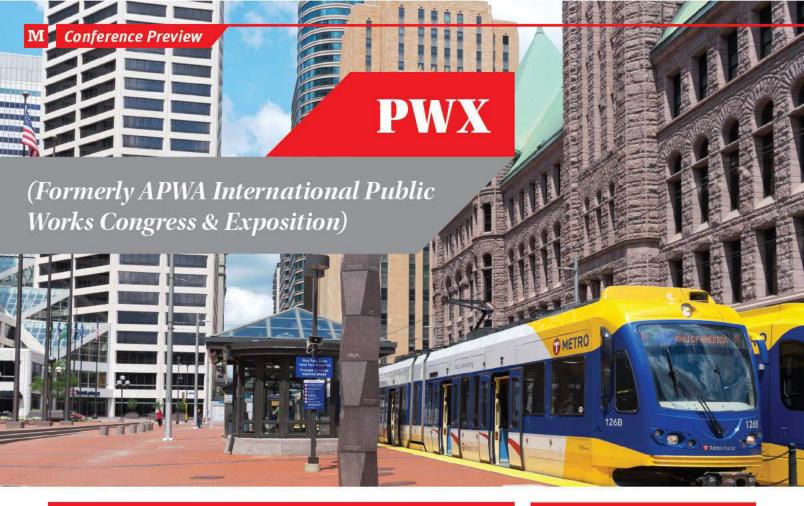
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#### By any name, the annual gathering of public works professionals still stands as the "Best Show in Public Works" for education, networking, new product demonstrations and displays.

The American Public Works Association announced the first rebranding in the event's history following the 2015 congress and exposition in Phoenix, Ariz. "PWX," which stands for "Public Works Expo," was adopted by the organization in response to generational trends in the workforce.

More than just the name, the event itself has been revamped. In this year's host city of Minneapolis, Minn., public works directors, solid waste managers and coordinators, public fleet directors, managers of operations, city engineers, water services directors, sustainability coordinators and others will encounter hundreds of exhibitors and have the opportunity to develop their skills by attending more than 125 outstanding education sessions led by experienced public works professionals. Of course, all education sessions and exhibit showcase presentations are eligible for continuing education credits.

APWA also plans a more integrated presence on the floor of the 15,000-square-foot exposition hall. The "APWA Connect Live" booth will be modeled after the online APWA Connect community and will provide attendees with a place to meet experts, network and ask show and product questions of staff members.

The organization is proud to announce that pioneer astronaut Scott Kelly will give the keynote address at PWX 2016. Kelly's 20-year career reached a new height earlier this year, when he retuned to Earth after a record yearlong deployment in space, and PWX attendees will have the privilege to hear about Captain Kelly's extraordinary adventure firsthand.

Of particular interest to stormwater professionals will be the Public Works Stormwater Summit, taking place over the course of two afternoons. APWA's Water Resources Management Committee plans an event that will feature the latest approaches for stormwater planning and management. There is no additional fee to PWX Aug. 28–31 Minneapolis Convention Center, Minneapolis, Minn www.apwa.net/PWX

attend the summit. Additionally, education sessions on active transportation, emerging technologies, solid waste, flood control and 29 other categories will be offered over the course of four days.

For an up-close view of local public works projects, visit www.apwa.net and check out the workshops and tours scheduled for PWX. Early registration is required. The list of sites includes US Bank Stadium, the St. Croix bridge, the Full Circle Organic Facility and the transportation system serving the Mall of America.

Registration is open at apwa.net/ PWX, and as always, continuing education credits are available. Don't miss the opportunity to hear about exciting new developments in thought, trends and procedures affecting public works today, and to get an up-close look at applications of public works technology in the forwardlooking city of Minneapolis.



**LEFT:** Touted as a city full of opportunities and excitement for young professionals, Minneapolis blends ingenuity and tradition in public works applications that have become national models. Investigate them during the APWA conference. (Shutterstock photo) **ABOVE:** The APWA annual Congress and Exposition has been rebranded as "PWX." Still "The Best Show in Public Works," the event happens Aug. 28–31 this year in downtown Minneapolis, Minn. (Shutterstock photo)



NASA astronaut Captain **SCOTT KELLY** will be the keynote speaker on opening day, Sunday, Aug. 28. Kelly knows a thing or two about pushing one's personal limitations, which will be the topic of his presentation.



"Uncrapify Your Life" is the title of Monday's keynote address, given by motivational speaker JEFF HAVENS. His mission will be to demonstrate how small changes in communication strategies can strengthen relationships, increase loyalty and create a culture of teamwork and mutual respect.



On the third morning of PWX, learn how to identify the behaviors ker that keep people from reaching their true potential — and how to overcome them. The speaker will be CNN commentator and opinion writer MEL ROBBINS.



#### CHARLES MAROHN,

founder and president of the nonprofit organization Strong Towns, will give a keynote presentation Wednesday on its mission to support a model of development that builds financial strength and resiliency within America's cities, towns and neighborhoods. TOPICS, PRODUCTS AND OPPORTUNITIES AT PWX:

- Career and personal development
- Construction management
- Emergency management
- Environment/Sustainability
- Engineering and technology
- Facilities
- Fleet services
- Management
- · Parks and grounds
- Snow and ice
- Solid waste
- Stormwater/Flood control
- Streets, roads, bridges
- Traffic engineering
- Utility and public right-of-way
- Water and wastewater
- Active transportation
- Asset management solutions
- Emerging technologies
- Leadership
- Funding resources and budgeting
- Sustainability
- Workforce solutions

(Photos provided)

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

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

#### AUGUST

Aug. 16–17 Midwest Security & Police Conference/Expo Tinley Park Convention Center, Tinley Park, Ill. www.mspce.com

Aug. 16–18 American Association of Motor Vehicle Administrators Annual International Conference Williamsburg Lodge, Williamsburg, Va. www.aamva.org

Aug. 17–20 International Association of Fire Chiefs Annual Conference & Expo (Fire-Rescue International) Henry B.Gonzalez Convention Center, San Antonio, Texas

Aug. 18–20 Florida Municipal League Annual Conference Diplomat Resort, Hollywood, Fla. www.floridaleagueofcities.com

Aug. 21–24 NIGP Forum — Annual Meeting Gaylord National Resort & Convention Center, National Harbor, Md. nsite.nigp.org/forum2016

Aug. 22–25 StormCon, the SurfaceWater Quality Conference & Expo, & WasteCon 2016 Indiana Convention Center, Indianapolis, Ind. www.stormcon.com; swana.org/events/wastecon.aspx

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

Renaissance Atlanta Waverly & Dobb Galleria, Atlanta, Ga. *www.imsasafety.org*  Aug. 28–31 American Public Works Association Public Works Expo (PWX) Minneapolis Convention Center, Minneapolis, Minn. www.apwa.net/PWX

Aug. 29–Sept. 1 Florida Recreation & Park Association Annual Conference Caribe Royal Resort, Orlando, Fla. www.frpa.org/conference/ confgeneral

Sept. 11–14 Southeast Governmental Fleet Management Association Annual Meeting Myrtle Beach Hotel & Convention Center, Myrtle Beach, S.C.

www.sgfma.org/sgfma.php ?incfile=annual\_meeting

#### SEPTEMBER

Sept. 11–14 Missouri Municipal League Annual Conference St. Louis Union Station, St. Louis, Mo. www.mocities.com/ ?page=AnnConf

Sept. 11–14 American Public Transportation Association Annual Meeting JW Marriott, L.A. LIVE, Los Angeles, Calif. www.apta.com/mc/annual/ Pages/default.aspx

Sept. 14–16 Michigan Municipal League 2016 Convention Grand Hotel, Mackinac Island, Mich. www.mml.org

#### SEPTEMBER

Sept. 22–24 Illinois Municipal League 103rd Conference Hilton Chicago Hotel, Chicago, Ill. conference.iml.org

Sept. 24–28 Water Environment Federation Annual Technical Exhibition & Conference Ernest N. Morial Convention Center, New Orleans, La. www.weftec.org

Sept. 25–28 ICMA Annual Conference Kansas City Convention Center, Kansas City, Mo. icma.org/en/icma/events/ conference

Sept. 25–28 International Economic Development Council Annual Conference Cleveland Convention Center, Cleveland, Ohio www.iedcevents.org

Sept. 26–28 F.I.E.R.O. Fire Station Symposium Sheraton Ridge Raleigh Hotel, Raleigh, N.C. www.fierofirestation.com

Sept. 26–30 Emergency & Municipal Apparatus Maintenance Symposium Ohio Fire Academy, Reynoldsburg, Ohio www.oaevt.org

Sept. 26–28 Midwest Green Fleets Forum & Expo Greater Columbus Convention Center, Columbus, Ohio www.cleanfuelsohio.org/ midwest-green-fleets-forum-expo

#### OCTOBER

Oct. 3–7 EMS World Expo & World Trauma Symposium Ernest N. Morial Convention Center, New Orleans, La. emsworldexpo.com

Oct. 4–5 Sustainable Cities Network Growing Sustainable Communities Conference Grand River Center, Dubuque, Iowa www.gscdubuque.com

Oct. 4–6 Pennsylvania Municipal League 117th Annual Summit Lancaster County Convention Center, Lancaster, Pa. www.pamunicipalleague.org

Oct. 4–6 American Road & Transportation Builders Association National Convention JW Marriott Tucson Starr Pass Resort, Tucson, Ariz. www.artba.org/news/trainingevents/national-convention

Oct. 4–6 2016 Indiana Association of Cities & Towns Annual Conference & Exhibition French Lick Resort, French Lick, Ind. www.citiesandtowns.org

Oct. 5–6 Location-Based Social Media Conference (Latitude) Navy Pier, Chicago, Ill. geofeedia.com/latitude-2016

Oct. 5–8 National Recreation & Parks Association Annual Conference

America's Convention Center, St. Louis, Mo. www.nrpa.org/conference2016



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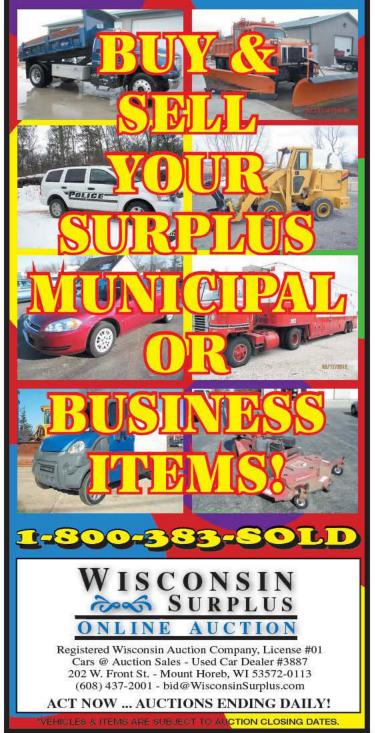
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#### APWA 2016 Top Ten Public Works Leaders of the Year announced

KANSAS CITY, MO. — The American Public Works Association announced in May the selection of 2016 Top Ten Public

Works Leaders of the Year Award recipients. This year marks the 56th anniversary of the Top Ten Leaders awards, which is one of the most coveted and prestigious awards presented by the APWA association.

The 2016 Top Ten Public Works Leaders list consists of Kenneth Eyre, P.E., senior associate, Greeley and Hansen, Alexandria, Va.; John Herzke, P.E., PWLF, vice president of municipal services, Clark Nexsen, Virginia Beach, Va.; Dena Mezger, P.E., director of public works, Lee's Summit, Mo.; Diane Nakano, P.E., assistant general manager, Sacramento Regional Transit Dist., Sacramento, Calif.; James "Jim" Neal, P.E., public works director, Charleston County, North Charleston, S.C.; Bob Patterson, P.E., director of public works, Pendleton, Ore.; James "Jim" Proce, MBA, PWLF, assistant city manager, Rowlett, Texas; Paul D. Wiegand, P.E., SUDAS program director, Iowa State University, Ames, Iowa; Clark Wantoch, P.E., PWLF, executive director, Wisconsin Concrete Pipe Assoc., Milwaukee, Wis.; and Walter "Walt" Veselka, P.E., PWLF, public works director, Bristol, Conn.

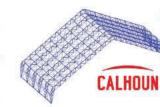
Each of the Top Ten Leaders are recognized for their achievements in engineering or administration, including career advancement; contribution to technology or job knowledge; commitment to the profession as evidenced by education, training, certification or registration; and continuing education, as well as professional excellence and service to the community in large and small municipalities.



### Construction begins on Sellick Equipment's multimillion dollar facility expansion

**HARROW, ONTARIO, CANADA** — On April 20, at the age of 97 years, Walter Sellick, along with sons Howard Sellick, president; David Sellick, vice president; and grandson Colin Sellick, systems manager, had a ground breaking ceremony for a new multimillion dollar, 120,000-square-foot facility.

"In order to compete on a global scale, we needed to expand and build a state-of-the-art plant," said Howard. Sellick Equipment has manufactured rough terrain and truck mounted forklifts for over 47 years for a variety of industries, including building supply yards and engineered wood products, automotive recycling, oil field services, mining and military applications. In recent years, a new generation of forklifts was introduced featuring enhanced ergonomics, environmentally friendly diesel engines and increased lift capacities. Sellick products are supported by a nationwide dealer network providing superior parts and service needs.



#### Calhoun Super Structure, Natural Light Fabric Structures join forces

TARA, ONTARIO, CANADA — Calhoun Super Structure announced a joint venture with Natural Light

Fabric Structures at the eighth annual

dealer conference at Niagara-on-the-Lake on April 20. This alliance expands the Calhoun product line to include Natural Light fabric buildings.

The joint venture was a natural fit for both companies. For over 20 years, Calhoun, a Canadian-based company, has crafted the strongest, most reliable engineered fabric building on the North American market. The team of Natural Light Fabric Structures, based in Minnesota, offers decades of experience in general and fabric building construction, steel fabrication and manufacturing engineering. The alliance with Calhoun will enable easy, crossborder access to both product lines and allow for the sharing of design and engineering expertise.

#### Three public works agencies receive 2016 Snow and Ice Control Awards

KANSAS CITY, MO. — Three public works agencies have been selected to receive the American Public Works Association 2016 Excellence in Snow and Ice Control Awards. Established to promote excellence in the management and administration of public

works snow and ice operations, the awards promote best practices in snow and ice removal while

minimizing environmental impacts. This year, they were presented at the 2016 APWA North American Snow Conference, May 22–25, in Hartford, Conn.

The three recipients were: Longmont, Colo., Department of Public Works and Natural Resources: Buffalo Grove, Ill., Public Works Department; and the Orangetown, N.Y., Highway Department.

#### National contest challenges transportation students to improve roadway safety

**FREDERICKSBURG, VA.** — The American Traffic Safety Services Association announced in May a "Traffic Control Device Challenge" in partnership with the Transportation Research Board. The challenge will focus on how America's roadway system must change to accommodate both human and machine drivers. This challenge is designed to promote innovation and stimulate ideas regarding traffic control devices with a goal to improve safety on the nation's roadways. Eligible

Sellick and Calhoun images provided: Others: Shutterstock photo

participants are individual high school, community college, 🕨

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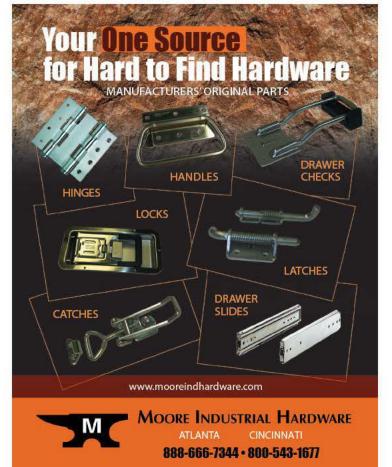
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#### News & Notes

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Submissions must be an original design or modification of an industry-accepted design or product. A panel of TRB experts will judge entries based on the ability of the idea to address a specific roadway problem, how easily it can be understood by all road users, its applicability on a nationwide basis and its feasibility for implementation.

Up to 12 finalists will be invited to display their ideas at the 2017 TRB annual meeting in Washington, D.C. From those, first, second and third place winners will be selected to present their concepts to the roadway safety industry at ATSSA's annual Convention and Traffic Expo, Feb. 12-14, in Phoenix, Ariz. Interested students can find an application packet at tti.tamu.edu/documents/ proposals/2017-TCDC.pdf

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



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## **Celebrating parks and recreation in July**



By ROXANNE SUTTON | Guest columnist Senior Marketing and Communications Specialist, National Recreation and Park Association

ARKS AND RECREATION - IT MEANS A LOT OF THINGS. IT'S a municipal department, a field of study, a TV show, a public service, a set of city facilities and more. Beyond that, park and recreation departments also serve as community health resources, public gathering spaces, celebration centers and open space preservation areas. The myriad roles that parks and recreation plays in our communities is one of the reasons we need a month to highlight and celebrate how those roles impact our lives.

This July will mark my fourth year as part of the National Recreation and Park Association's Park and Recreation Month team. Throughout that time I've learned a lot about why we celebrate, the history of the month and the amazing ways local park and recreation departments make the month their own.

The more things change, the more they stay the same (sort of)

Park and Recreation Month has always been a national effort carried out on the local level in park and recreation departments throughout the country. While we have officially been celebrating

July as Park and Recreation Month since 1985, the celebration of the month goes back much further than that-predating the formation of NRPA. The earliest record I could find in NRPA's archives is an October 1965 letter from Joseph Prendergast, the then-executive vice president of the National Recreation Association. In the letter, he informs members that they plan on expanding the awards for National Recreation and Park Month in June, but due to the recent realignment of the orga-

nization under the National Recreation

and Park Association, they will keep the same system in place for 1966's celebration.

We also know that in 1966 the theme of National Recreation and Park Month ("recreation" and "park" were later switched for unknown reasons) was "Free Time - Horizons Unlimited." It's fascinating to look back and see that things were both very similar and very different than they are today. The focus on promoting the benefits of parks and recreation to all people, regardless of their age or economic status,



Your imagination is the limit when it comes to celebrating National Park and Recreation Month. In 2014 the Charleston County Parks and Recreation Commission in South Carolina took that year's Park and Recreation Month challenge to get outdoors seriously, moving their staff meeting to the city's Splash Zone water park. (Photos provided)

remains the same; as did the production of a media toolkit. The differences? Well, 50 years ago there was an assumption that free time was increasing at such a high rate that people would not know how to effectively manage their leisure time. While that may seem laughable, I know many of us would agree there is still an opportunity to educate the public on the effective use of free time.

Jump to 1985 and you've got then-Vice President George H.W. Bush and Walter Payton, hall-of-famer and star running back of the

> Chicago Bears, endorsing July as Park and Recreation Month. The decision was made to move the month to better accommodate school schedules, as many children are still in school during the majority of June. In that initial meeting in the vice president's office, Bush said, "I commend the National Recreation and Park Association, for they remind us how precious and wonderful life is." Today, 31 years later, we hope our work around Park and Recreation Month still reminds people how wonderful life can be.

"Fifty years ago there was an assumption that free time was increasing at such a high rate that people would not know how to effectively manage their leisure time."

#### Making Park and Recreation Month your own

It never ceases to amaze me how we, the NRPA staff, can come up with an idea and park and recreation departments will take it to the next level and beyond. This is by far my favorite part of putting together our activities for July every year. Yes, sitting down to plan the month, brainstorming ideas and seeing the graphic design elements come to life are all fun and exciting, but nothing beats seeing the first municipality put their own spin on it. >

Over the years, Park and Recreation Month participants have done some amazing things. In 2014, Charleston County Parks and Recreation Commission in South Carolina took our challenge to get outdoors seriously. They moved their staff meeting to Splash Zone, one of their water parks. The humorous photo garnered lots of social media attention and demonstrated that it is easier to

get outside than you may think.

Also in 2014, Garner Parks and Recreation celebrated Park and Recreation Month by creating a song and dance called the Garner Shuffle. As part of the challenge to get people outside, they taught the shuffle via YouTube videos and then had everyone perform it publicly outside at one of their July events. It was a fun and creative way to celebrate parks and recreation, as well as hometown spirit.

This year Park and Recreation Month is all about the superheroes and superpowers of parks and recreation. We've had fun planning this July's

activities, because it's not hard to find all the ways in which parks and recreation acts like a community superhero. From protecting our environment to providing safe places for all people to come together and get healthy, parks and recreation does a lot. In addition to our usual toolkit materials, this year we've created a comic book that helps tell parks and recreation's story through the Park and Rec Brigade. Another way we're celebrating is by recognizing some of the top park and recreation superheroes out there, thanks to nominations from their peers. We're also hosting a monthlong photo contest with weekly prizes and challenges.



Getting involved in Park and Recreation Month is super easy. Just go to www.nrpa.org/July to find posters, graphics, the comic book, a media toolkit, contest information and much more.
The goal of Park and Recreation Month is to bring awareness to just how much parks and recreation does in each of our communities, so we try to provide as many ways to do that as possible.

I encourage you to find ways to celebrate your community's park and recreation efforts. Whether you are a city with a large park and recreation department or a small municipality without a formal department,

there are easy ways to celebrate. Just hanging the poster around your municipal buildings or registering your participation and support of the month goes a long way to show that parks and recreation are indeed a very important part of each of our lives. This July, if nothing else, get out there and spend some time at these great public spaces. ■







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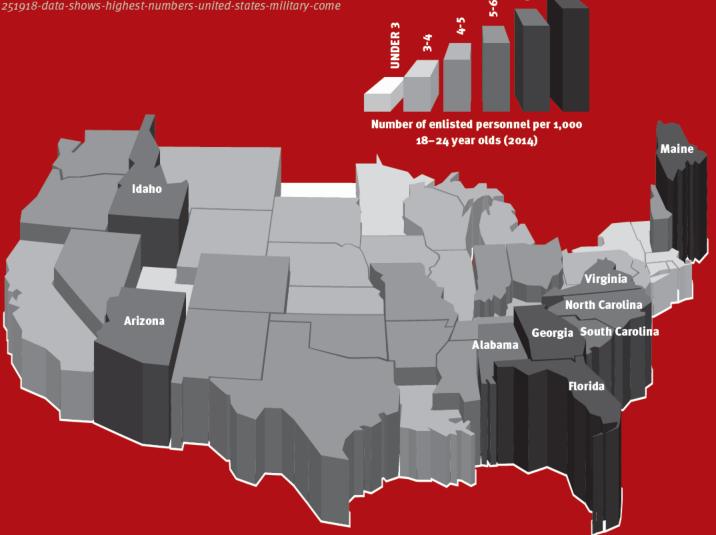
## **TOP 9 patriotic states by number of enlisted personnel**

## In 2015, Business Insider magazine published a map of the number of enlisted personnel by state, with information dated from July of 2014.

The map showed the number of enlisted personnel per 1,000 18- to 24-year-olds and was provided via request to the U.S. Department of Defense. Three states have more than seven, while an additional six states had five or six young people enlisted for every 1,000 residents in that age group. Overwhelmingly, these nine states were located in the South—specifically the Southeast United States. Notably, people between the ages of 18 and 24 from Florida, Georgia or Maine are about twice as likely to join the armed forces than their counterparts in states like North Dakota or Utah. DoD spokesman LCDR Nate Christensen hazarded a guess as to why. "One reason might be exposure to large military bases in states where there are higher enlistment rates," he was reported as saying in the accompanying article. Florida and Georgia are both home to a large number of Navy, Marine, Army and Air Force bases. Maine remains an anomaly; however, an argument may be made for the closely held patriotic sentiments of many of the state's residents.

The states with more than seven enlisted personnel per 1,000 18- to 24-year-olds are Florida, Georgia and Maine. Idaho, Arizona, Alabama, North and South Carolina and Virginia are the states with six or seven enlisted personnel per 1,000 18- to 24-year-olds.

#### Source: www.ijreview.com/2015/02/ 251918-data-shows-highest-numbers-united-states-military-come



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