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† Data rates may apply.
The APWA Reporter, the official magazine of the American Public Works Association, covers all facets of public works for APWA members including industry news, legislative actions, management issues and emerging technologies.

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Debris management plans aid in managing an effective response

Bo Mills, PWLF
APWA President

Each week we hear the gentle rumble of solid waste collection in our neighborhood. For some, there are multiple bins of sorted waste materials, others possibly a couple of carts, and those that stack bags at their curbs. Regardless of what form it takes, the public interacts with public works personnel in an essential service for their community, solid waste management. Many of our programs consist of some of the most environmentally sensitive and, therefore, critically important services offered directly to our communities.

There is an often forgotten aspect of solid waste management we may not think of in our daily lives—debris management. When natural disasters strike, whether it is by earthquake, flood, hurricane, tornado or wildfire, there is an abundance of debris that needs proper disposal in a timely manner. Debris management after these events is vital to the recovery process for public health and safety; complying with state and local regulations; conserving disposal capacity; reducing the potential risk of injuries; and minimizing or preventing environmental impacts.

I have experienced several debris management situations in my career in Germantown, Tennessee. The one that will stay with me is an ice storm in February of 1994. After six weeks of intensive cleanup involving several contractors, mutual aid and City employees, we had moved and disposed of 228,000 cubic yards of material. Debris management is one of many competing priorities that agencies must manage during such events. The development and implementation of a debris management plan during such an event will be the greatest aid in properly managing an effective response. In our case there was no plan; therefore, we had to put in place, while meeting Federal Emergency Management Agency (FEMA) guidelines, both collection and disposal contracts. In developing a debris management plan, collaboration among state and local governments and partnerships with private sector experts is essential to creating a thorough plan.

In the event that a disaster becomes elevated as to require assistance from FEMA, having debris management plans will help protect against the pitfalls of costly missteps and absence of assistance. Ensure that your plan outlines your specific needs in your area and is consistent with FEMA requirements to meet expectations and ensure a full and proper response. Reach out to your state and FEMA representatives to have them provide assistance during your planning. Having these plans in place will allow you, the public works professional, to focus on the recovery and not so much on establishing these contracts.
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Late last year, the American Public Works Association conducted an informal, online survey, asking members to name the single most important technology for public works professionals in 2018. Almost 900 of you responded, and from your answers, APWA gathered considerable data, narrowing the list to the top five. In descending order, they are:

1. Geographic Information Systems (GIS) and Mapping
2. Autonomous/Connected Vehicles and Equipment
3. Drones and Unmanned Aerial Vehicles (UAV)
4. Asset Management
5. Global Positioning Systems (GPS)/Autonomous Vehicle Location (AVL) and Telematics
According to your responses, these cutting-edge endeavors are most influencing—or are trending to influence—how public works departments are using technology this year. As one significant outcome of your votes, each of the five is being featured in this year’s APWA educational offerings. On the following pages, public works professionals who are experienced, knowledgeable users of these technological advances share their thoughts, as well as their predictions on what the future may hold.

APWA is establishing the Top Five Technologies survey and report as an annual service to members. At a time when technological change can be measured in nanoseconds, forward-looking public works professionals are focusing on longer-term trends that position their communities to benefit from the convenience and efficiency of technology. It promises to bring additional added benefits to public works departments, with special emphasis on attaining new levels of safety, economy, sustainability and service.

GIS: Improving Performance and Accountability

With good reason, public works professionals consider Geographic Information Systems, or GIS, the most trending and relevant technology advancement for the field in 2018. With the ability to capture, store, manipulate, analyze, manage and present spatial or geographic data, GIS can provide virtually any public works department with a powerful and versatile data infrastructure.

GIS helps users to gather and understand data, make better operational decisions and report meaningful results to stakeholders. When shared internally, GIS-generated information demonstrates the value of investments to the leadership and strengthens new budget requests. When results are released to taxpayers, they see how well their money was spent.

“With millions of dollars in assets owned by the community, GIS tells us precisely what’s there, how it’s being used, and its condition,” says Matt Steging, Knowledge Management/GIS Manager for Olathe, Kansas. “We integrate our GIS with other systems, such as our Computerized Maintenance Management System (CMMS), to help the city do a better job of keeping up with inspections and work orders.”

He explains that in concert with CMMS, GIS joins 21 databases together—for example, mapping where all manholes are located in a certain area. “Or, if it’s been determined that 25 percent of all water hydrants should be inspected this year, the system will analyze the location of each one in a given area and create work orders based on the proximity of each hydrant,” he continues.

In Olathe, a city of 150,000 in northeastern Kansas, the Public Works Department encompasses a broad range of services—from stormwater to traffic operations. In his role as Knowledge Manager, Steging works with individuals in various departments to collect their data and use it.

“The city started in the mid-1990s to develop a GIS mapping program,” he says. “Today, it has advanced considerably. Public works departments expect the system to be there—accessible and reliable.”

Steging believes GIS is moving toward web-based systems and away from desktop-command software. Also, Nelson and Steging agree that 3-D map-
ping is the next step for them in the GIS evolution. Nelson observes that if Overland Park’s infrastructure were available in 3-D, it would be useful when planning new fiber optic lines, for example. “Unfortunately, it takes time to enter the necessary data for 3-D mapping, and we’re already busy 100 percent of the time,” he says.

**Autonomous & Connected Vehicles: It’s A Long, Winding Road**

In 1953, a short story by science-fiction writer Isaac Asimov included autonomous cars with “positronic brains” that communicated via honking horns and slamming doors. Last year, the film *Blade Runner 2049* opened with an android policeman nearing his destination in a three-wheeled autonomous flying vehicle.

Such fanciful scenarios are not pie-in-the-sky. The automotive industry is investing heavily in R&D for fully autonomous vehicles, or AVs, that operate without driver intervention. In reality, however, AVs could still be a good 20 years away, according to Tim Austin, P.E., of Kaw Valley Engineering in Wichita, Kansas.

He’s optimistic that connected vehicles—an incremental technological advance—will have their day much sooner. Austin, who chairs APWA’s Subcommittee for Connected Vehicles and is a Past President of the National Society of Professional Engineers, calls them an “emerging concept.”

“The ‘connected vehicle’ term started appearing over 10 years ago in Google searches,” he says, “and now it’s part of the vocabulary as the industry works to enhance vehicle use through broader use of broadband and other communications networks.”

Since 1997, when GM introduced Onstar in several Cadillac models, the connected car has made remarkable advances. Today, an array of on-board sensors, cameras and radar applications warns drivers of an imminent danger so they can take action; some, such as autonomous emergency braking and adaptive cruise control, actually intervene.

The next big thing is expected to be vehicle-to-vehicle (V2V) technology so cars can speak to each other, as well as V2X, or vehicle-to-everything, including infrastructure, and V2P, vehicle-to-pedestrian. The primary purpose of these technologies is to improve safety. V2V enables vehicles to continually communicate to others around them so each is aware of the others’ speed, heading and direction. V2X can alert drivers to hazardous road areas as well as provide automatic control of signal timing, speed management, and operating transit and commercial vehicles.

AVs, while further down the road, have captured considerable attention. In late 2017, Audi announced that its new A8 would let drivers read the paper or sightsee, provided they are prepared to take back the wheel after a warning. At the January 2018 Consumer Electronics Show in Las Vegas, Phantom Auto demonstrated the first remote-controlled car on public roads.

Such advances are paving the way for a momentous transformation in transportation; called the Intelligent Transportation System (ITS), it will make driving and traffic management both better and safer for everyone. But Austin points to two major obstacles that first must be overcome: (1) no one standard is emerging for the communications infrastructure, and (2) the overarching question is who will pay for it.

“There are many unknowns in the industry’s rush to these new technologies and in being one of the first.
to market,” he warns. A 2014 report from the National Highway Traffic Safety Administration cites the issues, including the need for secure communications systems, manufacturers’ liability concerns and privacy. Another is whether consumers will agree to periodically obtain new security certificates from the dealership—or opt to drive with non-functioning V2V capabilities.

Given the difficulty of trying to plan for a new infrastructure with so many unknowns, Tim Austin recommends that public works departments adopt a wait-and-see attitude—including about possible funding requirements. “The auto industry may even take a cue from the cellular communications providers, who have built their own.”

**Drones & Unmanned Aerial Vehicles: They’re Flying High**

Texas game wardens recently received a camera-equipped drone to help with search and rescue missions. It will enable a real-time HD video feed—including dangerous conditions such as swiftly moving water, downed power lines and hazardous materials.

In Canada, Renfrew County, Ontario, has become the first paramedic service to receive government approval to use drones in medical emergencies. The service can now drop lifesaving supplies like naloxone kits and defibrillators when weather, traffic or other conditions prevent paramedics from reaching patients quickly.

As drone technology drops in price, public works departments are taking notice. Whether the purpose is public safety, construction inspections, erosion control or many other applications, the drone is safer, cheaper and often more thorough than sending up people in a helicopter. A drone with an on-board camera also can easily travel to tight or difficult places, such as underneath bridges.

The word “drone” can have negative connotations because of its association with controversial military uses. Drone advocates often use “UAV” for Unmanned Aerial Vehicle, or “UAS” for Unmanned Aerial Systems which encompasses the vehicle that flies, the ground-based controller and the communications that connects them.

The drone industry got a big boost in 2015 when the FAA granted hundreds of new exemptions for commercially operated drones in the U.S. and also mandated a registry for drones weighing more than 250 grams (8.1 oz.). In early 2018, the registry totaled more than one million, with about 850,000 hobbyist users; interestingly, commercial registrations have been rising, while hobbyists’ decreased.

“In 2016, the FAA issued regulations closely restricting drone usage and who may fly them,” says Mike Sutherland. “These rules, known as Small Unmanned Aircraft Rule, Part 107, also include requirements for pilot certification.”

A long-time drone enthusiast, Sutherland retired in 2016 as Director of Public Works and the Emergency Operations Center in Parker, Colorado. He chaired APWA’s Emergency Management Committee, and with Seth Swaim of WithersRavenel, presented a 2017 APWA Click, Listen & Learn program on drones (“UFO or UAV? The Welcome Invasion of Drones in the Public Works World”).

He notes the FAA restricts drones from flying higher than 400 feet above ground level. Also, they must remain within the visual line-of-sight of the pilot in command and the person manipulating the flight controls, can operate only during daylight, and
Sutherland predicts a big future for drones in virtually every public works department. “In a few years, every public works department will have a certified pilot either on staff or contracted to handle drone needs,” he says.

During the devastating 2017 Atlantic hurricane season, UAVs were used to safely inspect the damage and to search for survivors. “For a fraction of what helicopter time would have cost, UAVs were deployed in Texas, Louisiana, Florida, and U.S. islands and territories,” he says.

In a calmer scenario, a drone can systematically view and photograph a 50-acre property in 20 minutes. An inspector then analyzes the footage and completes the assessment in two or three hours.

Commercial-grade UAVs can cost as little as $1,000, although Sutherland says most public works departments should expect to spend about $3,000 for a heavy-duty drone that can accommodate different cameras or sensors. Several manufacturers make commercial-grade drones, but a recent survey reported that China-based DJI accounts for 70 percent of the market.

Call it a drone, a UAV or a UAS, but it’s almost certain: If your public works department doesn’t already have one, it soon will.

**Asset Management: What It Is … and Isn’t**

First things first: Asset Management (AM) is no more a “technology” than are Risk or Quality Management.

The ISO 55000 International Standard on Asset Management defines it as “the coordinated activity of an organization to realize value from assets.”

Toby Rickman, P.E., PWLF, who heads the APWA National Task Force on Asset Management, thinks the reason why many members considered AM a technology when responding to APWA’s survey last fall is this: Today, public works professionals rely heavily on technology to optimize the resources they have at hand.

“IT hasn’t been too many years since we’ve been able to walk onto a field with a smart phone and assess a physical asset we’re responsible for,” he says. “We’re using new technology and new skills, but implementing what we have more effectively and efficiently.”

Chris Champion, CPEng., was CEO for 15 years of the Institute of Public Works Engineering Australasia (IPWEA) where he led the organization to become internationally recognized for its work in infrastructure asset management. “An organization’s AM system is the people, processes, tools and the resources involved in the delivery of asset management,” affirms Champion.

“An AM Information System, or the technology, is merely a component,” he says.

Another reason why asset management is top-of-mind for public works professionals is growing concern about the financial and service sustainability of roads, bridges, water supply and other infrastructure networks. Champion comments, “There is increasing recognition that organizations have been making short-term decisions about investment, maintenance and renewal that are not sustainable over the long term.”

He describes the situation as “the perfect storm of a steadily shrinking funding base, low affordability, aging infrastructure, and areas of both growing and declining population creating huge challenges for infrastructure managers.”

Champion adds, “International AM practice addresses these challenges with six questions: What are my required levels of service? How will demand change over time? What is the current state of my assets? What are the risks they may not meet current and future demands? What is the long-term service cost? What is my best long-term strategy for operating, maintaining, replacing and improving assets?”

Rickman, who is Deputy Director for Planning and Public Works for Pierce County, Washington, says, “Whether we’re in Miami or Maine, all APWA members are taking care of the same infrastructure. We have so much in common, and we should try to learn from each other.”

When it wraps up later this year, APWA’s Asset Management Task Force expects to provide members with tools...
they need to develop their asset management systems, enhance their awareness of AM, and further their efforts in advocating for it in their organizations. A standardized road map for implementing asset management in public works will be included.

**Develop a long-term strategy to sustainably manage and deliver your community’s desired and affordable service levels.**

“Tools that will soon be available on APWA’s website include a self-assessment tool, a template for reporting to elected officials and the public, and a draft road map with case studies for developing an AM system,” states Rickman.

“We also are leveraging what has been achieved internationally,” he adds. “British Commonwealth nations traditionally have a strong federalization of their infrastructure and some funding in Canada is now tied to asset management requirements. Federal funds earmarked to rehabilitate infrastructure demand a guarantee that the money will be used wisely.”

Concludes Chris Champion, “International best practice has asset and financial managers working collaboratively on long-term financial need forecasts. It’s about the lowest long-term cost, rather than short-term savings—a long-term strategy to sustainably manage and deliver your community’s desired and affordable service levels.”

**GPS/AVL/Telematics: Interconnected Applications = Telematics**

In the survey to choose the most important technology for public works in 2018, APWA members voted a collective fifth place to global positioning systems, automatic vehicle location and telematics.

But Lloyd Brierley prefers to use the umbrella term “telematics” when referring to these interconnected fields; they encompass telecommunications, vehicle technologies, road transportation and safety, as well as aspects of electrical engineering and computer science.

Brierley should know. As General Manager of the Fleet Services Division for the City of Toronto, he oversees using telematics as a data-driven tool to help lead a very large and complex fleet.

As of December 2016, more than 4,000 city-owned or contracted vehicles were equipped with one or more forms of telematics, under the city’s many fleet operations. The Fleet Services Division provides overall telematics vendor and contract management for the Public Works Fleet, including issue resolution and process development. Overall, Toronto, which is the fourth largest city in North America, has about 10,000 on-road vehicles, plus more off-road and specialized equipment to help serve its population of almost three million people.

The fleet uses a range of telematics solutions including basic and advanced GPS. The basic unit supplies information on speed, braking and distance traveled. The more advanced units include additional features, including sensors for vehicle operating devices such as snowplows, salters/sanders, telescopic booms and other specialized equipment. When combined with the GPS, the sensors deliver information on the vehicle and the operating device.

“The City of Toronto has been using telematics since 2003,” says Brierley, “and its usefulness as a data-driven tool is still emerging.” A member of the APWA Fleet Services Committee, he notes that most public works organizations implement telematics to improve safety, better manage fleets and improve emergency capabilities. He adds that the technology is also a significant opportunity for better asset management.

One telematics application currently used by Toronto’s Fleet Management organization is utilization management and fleet rightsizing, in which automated processes capture meter readings, engine hours and vehicle use to identify under-utilized units. Utilization data can also be used to drive reliability-centered maintenance, which schedules maintenance based on usage, idling and fuel consumption instead of time.

Telematics is providing important new benefits for effectively managing Toronto’s large fleet. For example, Brierley says that before a telematics-based system was implemented, the 300,000 yearly fuel transactions suffered from a 30 percent failure rate. “This greatly slowed down efficiency,” he points out, “because the driver had to call the fuel desk where someone would have to correct the issue and authorize the transaction. The telematics system automated the process and we’ve reduced calls to the fuel desk to less than one percent of all transactions.”

**Begin by mapping out an end-to-end plan, with return-on-investment as the most important part.**

He says growing numbers of employees are appreciating the benefits of telematics, including when it protects them from false grievances. “After a citizen complained about a truck unnecessarily speeding through a city street, we used data from the GPS to prove that the complainant was wrong,” recalls Brierley. “Being able to successfully defend our employees sends a powerful message.”

Lloyd Brierley advises that public works managers who are interested in implementing telematics solutions in their organizations begin by mapping out an end-to-end plan, with return-on-investment as the most important part.

“You need a plan for what you’re going to do with it,” he says, “as well as what data will be important to you, and what you will do with it. Excellent information is available to help with the planning, but it’s vital to ensure that operational processes include tactics to maintain the smooth, ongoing functioning of all areas.”

Helen Horwitz can be reached at hlhorwitz@yahoo.com.
Solid Waste Management Committee: Focused on setting standards for the solid waste industry

Trever Leikam
Education Manager
American Public Works Association
Kansas City, Missouri

The solid waste industry is facing a prevalent challenge in public works: determining what are the collective standards in the industry. To address this need, this year’s Solid Waste Management Committee has focused many of their activities on the setting of standards for the solid waste industry.

In January 2018, the Leadership and Management Committee and Solid Waste Management Committee created the Solid Waste Benchmarking Joint Task Force to study and develop benchmarks and definitions of the standards in solid waste.

The Solid Waste Management Committee is sponsoring a Click, Listen & Learn on March 22 focused on addressing the challenge of cleaning up after a disaster. “Resiliency in Solid Waste” provides information on the efforts of the solid waste industry’s response to hurricanes. If you miss the live version of the program, you can still access it in the Members’ Library on the APWA website.

The national Technical Committees provide insight as to the major issues, concerns and challenges facing the various technical fields in public works. Technical Committees offer members the opportunity of public service on a national scale and a chance to participate in the process of constructive change in the public interest. The Solid Waste Management Committee is focused on sharing insights with other solid waste professionals. The committee encourages members to help them focus on what is important to you in regards to challenges and issues facing today’s solid waste manager.

The nomination process for participating in the committee is currently open. If you are interested in sharing your expertise and getting involved, go to the APWA website and submit your nomination. We are always in need of members interested in writing articles for the APWA Reporter and conducting reviews of articles and books on professional topics.

This year’s committee is led by the chair, Michael Foote, Sustainability/Solid Waste Manager for the City of Reading, Pennsylvania.
The Board Liaison is William E. Spearman, III, P.E., WE3 Consultants LLC, Saluda, South Carolina.

The members of the committee are:

- Monica Bramble, Assistant Public Works Director, City of North Port, Florida
- Trent Tompkins, Director of Collection Services, City of Edmonton, Alberta
- Demarcus Marshall, Ph.D., Public Works Superintendent, City of Valdosta, Georgia
- Charlotte Davis, Manager of Sanitation, City of Nanaimo, British Columbia
- Chris Knight, Waste Management Director/Safety Manager, City of Stillwater, Oklahoma

If you would like more information on the committee or would like to get involved, please contact the committee staff liaison, Trever Leikam, at (816) 595-5220 or tleikam@apwa.net.

Make a difference at APWA

“After all, sustainability means running the global environment – Earth Inc. – like a corporation: with depreciation, amortization and maintenance accounts. In other words, keeping the asset whole, rather than undermining your natural capital.”

– Maurice Strong (1929-2015), former Under-Secretary-General of the United Nations

NOMINATIONS for National APWA Committee Appointment

NOW OPEN!

APWA is now soliciting nominations for appointments to national level committees/task forces/external relationships for the August 2018-2019 year. Step forward and offer your expertise to your profession. To submit your nomination or nominate a colleague, log on to www.apwa.net/nominations.

Nominations must be completed by close of business March 23, 2018.
Editor’s Note: The morning of May 9 is dedicated to technical tours at APWA’s Snow Conference in Indianapolis, Indiana. The Indiana Chapter is planning some great tours, including the award-winning winter operations division of the Indianapolis International Airport, DPW Indianapolis’ West Street Operations hub and their “Indy Snow Force,” and the world-famous Indianapolis Motor Speedway. For more information on the upcoming Snow Conference, please visit www.apwa.net/snow.

Are you on the fence on deciding if you should attend the 2018 North American Snow Conference? The Indiana Chapter’s Snow Host Committee has been working hard behind the scenes to assure all attendees that this year’s Show for Snow will be the best!

There are many moving pieces that make a conference of this magnitude a success. However, the Indiana Chapter has many things working in their favor and chapter members are making sure that all who attend will leave the Hoosier State happy they came.

As if the quality education sessions that APWA provides and the networking opportunities you have with your peers and the vendors on the exhibition floor weren’t enough incentive to come to Indianapolis, consider these little known facts:

• Downtown Indy offers over 300 diverse dining and nightlife options all within a few minutes’ walk from our host hotels and the Indiana Convention Center.

• Traveling to and around Indianapolis is easy, convenient and affordable. Known as the Crossroads of America, Indy is within a day’s drive of over half of the country’s population.

• Indianapolis is home to more memorials honoring our nation’s veterans than any other city in the United States (other than Washington, D.C.). Acres upon acres are dedicated to honoring and remembering past heroes.

• Sports Illustrated recently named Victory Field as the best minor league ballpark in America and is the home to the Indianapolis Indians (the AAA affiliate to the
Pittsburgh Pirates) and is adjacent to the Indiana Convention Center.

- A ten-minute walk from the host hotels will find you at the doorsteps of the NCAA headquarters and the NCAA Hall of Champions. This museum showcases all 24 collegiate sports and the heart and dedication it takes to be a student-athlete.

Another way to ensure a successful Snow Conference is to partner with quality destinations that can make technical tour day (May 9, 2018) at the Snow Conference a memorable one. We at the Indiana Chapter are excited to partner with DPW Indy, Indianapolis International Airport Operations, and the world-famous Indianapolis Motor Speedway.

**DPW Indy Snow Force Operations**

Have you ever wondered how the largest public works department in the State of Indiana operates? Join us on this tour as we kick the tires at DPW Indy. You will visit their West Street operations hub and speak with the managers who oversee the Indy Snow Force. Tour also includes the sign and banner shop, traffic signal division, dispatch center, pavement marking shop and much more. Any attendee at the Show for Snow will not want to miss out on this opportunity to see how the Circle City manages and maintains their infrastructure. Please note that the area where they operate the Indy Snow Force is on the 2nd floor without elevator access.

**Indianapolis International Airport Operations**

Have you ever seen or climbed into equipment that allows crews to plow a two-mile-long airport runway, edge-to-edge, in 12 minutes? Ever wondered what type of strategy is in place that has allowed an airport to have no weather-related closures since 1978? Join us as we go behind the scenes and learn from the award-winning operations division of the nation’s #1 airport as rated by Condé Nast Traveler Readers’ Choice Awards for the fourth consecutive year.

**Indianapolis Motor Speedway Museum**

Please note that this is an educational sightseeing tour. Public works-related issues are not included.

Additional $15 fee and pre-registration required.

No visit to Indianapolis would be complete without a trip to the hallowed grounds of the Indianapolis Motor Speedway Museum. The Speedway Museum captures the rich 100-year-old history of the world’s fastest sport and is recognized as one of the most highly visible museums in the world devoted to automobiles and auto racing. In 1987, the Speedway grounds was honored with the designation of National Historic Landmark. As you enter the museum you will be witness to the Speedway’s priceless collection of racing history that encompasses cars from many series: IndyCar, NASCAR, Formula One, Sprint, Midget, motorcycle races, and drag racing. It also includes a variety of passenger automobiles, many of which were manufactured in Indiana by companies that once had ties to racing such as Duesenberg, Marmon, and Stutz marques, as well as Ferrari, Mercedes, and a variety of other European passenger car makers.

Upon arrival at the Speedway, attendees will be greeted by noted Speedway Historian, Donald Davidson, to provide a brief overview of the historic property and will be available for a few moments to answer any questions from those in attendance.

The month of May is always special in Indiana as will the 2018 North American Snow Conference. We look forward to seeing you in the “Racing Capital of the World” May 6-9.

Eric Pethel can be reached at (317) 339-8679 or pethtele@fishers.in.us.

Join us as we learn from the award-winning winter operations division of the Indianapolis International Airport.

As you enter the Indianapolis Motor Speedway Museum you will be witness to the Speedway’s priceless collection of racing history that encompasses cars from many series.

(Photo credit: Visit Indy)
APWA and the APWA Indiana Chapter invite you to join us for the 2018 North American Snow Conference in Indianapolis, IN, May 6-9, 2018. More than 2,000 snowfighters and other public works professionals are expected to attend what we are anticipating will be the biggest Snow Conference ever! This year’s Show for Snow has it all — from expert-led snow and ice education sessions to an exhibit floor full of excited vendors who can’t wait to show off the latest technologies and solutions your community’s been looking for! Don’t wait another minute, make plans today to join us in Indianapolis!
APWA and the APWA Indiana Chapter invite you to join us for the 2018 North American Snow Conference in Indianapolis, INDIANAPOLIS CONVENTION CENTER.

SNOW CONFERENCE AT-A-GLANCE

EXHIBIT OPENING & WELCOME
4:30 p.m. – 6:30 p.m.
Salt Reduction Strategy for Protection of Raw Drinking Water Sources

EDUCATION SESSIONS
3:30 p.m. – 4:20 p.m.
Successfully Selecting and Implementing a GPS/AVL Solution for Winter Maintenance
Certified Public Fleet Professional (CPFP)
Developing Best Maintenance Practices for Snow & Ice: An Ohio Perspective
Improving Fleet Technician Performance through Equipment and Techniques
Planning and Preparing for the Next Emergency: Impacts of Snow and Ice Control Operations

EDUCATION SESSIONS
2:30 p.m. – 3:20 p.m.
Lightning Round: Setting-Up Winter SOPs
District of Columbia Winter Maintenance
Cooperative Purchasing
Liquids 301 (Part 3 of a series of 4 sessions on the use of liquids)

Lunch on the Exhibit Floor & Non-Compete Exhibit Time

EDUCATION SESSIONS
1:00 p.m. – 2:00 p.m.
Lightning Round: How to Create Sustainable Snow Storage Site Operations through Cost Recovery

NEW PRODUCT THEATER PRESENTATIONS
9:00 a.m. – 12:50 p.m.
Exhibitor Solutions Theater Presentations

PRIZE DRAWINGS ON THE EXHIBIT FLOOR
3:15 p.m.

CREATIVE MINDS CHALLENGE: PAVEMENT MARKING COMPETITION
1:00 p.m. – 5:00 p.m.

SNOW TREK EVENT
10:50 a.m. – 1:00 p.m.

OPENING GENERAL SESSION TALK SHOW: How Do You Use New Technology to Benefit Your Winter Operations?
When Things Go Wrong and When They Go Right during Winter Events
Arizona’s Winter Wonderland: Storm Response in America’s 5th Snowiest Region

EXHIBITS OPEN
9:00 a.m. – 3:30 p.m.

EXHIBITOR SOLUTIONS THEATER
9:45 a.m.

COFFEE BREAK ON THE EXHIBIT FLOOR
2:50 p.m. – 3:30 p.m.

REFRESHMENT BREAK ON THE EXHIBIT FLOOR
11:00 a.m. – 12:00 p.m.

LIGHTNING ROUND: Parks and Public Works
4:30 p.m. – 4:50 p.m.

LIGHTNING ROUND: Snow and Ice Control: The Safety before Service Philosophy
3:30 p.m. – 4:50 p.m.

LIGHTNING ROUND: Small Town — Big Technology
10:30 a.m. – 10:50 a.m.

LIGHTNING ROUND: How Lehi City Has Adapted to the Ever Changing World of Street Winter Maintenance
10:00 a.m. – 10:20 a.m.

LIGHTNING ROUND: Minimizing the Environmental Impacts of Snow and Ice Control Operations
2:50 p.m. – 3:30 p.m.

NEW PRODUCT THEATER PRESENTATIONS
9:45 a.m.

LIGHTNING ROUND: How to Create Sustainable Snow Storage Site Operations through Cost Recovery
2:30 p.m. – 3:20 p.m.

NEW PRODUCT THEATER PRESENTATIONS
9:00 a.m. – 12:50 p.m.

SUNDAY, MAY 6
3:00 P.M. – 5:00 P.M.

Workshop: Snow & Ice: An Ohio Perspective

TUESDAY, MAY 8
8:00 a.m. – 1:00 p.m.
EXHIBITS OPEN
8:00 a.m. – 8:50 a.m.
EDUCATION SESSIONS
Change — Does Your Team Think that it is a Four-Letter Word?
A Snowplow Roadeo was Right for Crawfordsville – Is It Right for You?

Conquering the Fear of Anti-icing, Deicing, Pre-Wetting

Let the Operators Take the Lead on Everything!
A Work in Progress: How Does a Growing City Tackle Snow Removal?
Excellence in Winter Maintenance

EDUCATION SESSIONS
1:00 p.m. – 1:50 p.m.

LIGHTNING ROUND: APWA Top Ten Performance Measures for Fleet Professionals
2:15 p.m. – 3:15 p.m.
EDUCATION SESSIONS
Developing Snow & Ice Control Operations Transparency
In What Direction Is the Future of Winter Maintenance Headed and Should We Be Doing Anything About It?
Anti-icing: A 14-Year Journey in Public Safety Underbody Scraper – Your Best Plow May be Right under Your Truck

EDUCATION SESSIONS
2:15 p.m. – 3:15 p.m.

LIGHTNING ROUND: National Weather Service (NWS) Roadmap – Improving Service to the Public Sector
2:45 p.m. – 3:05 p.m.

LIGHTNING ROUND: Technology Implementation

EXHIBITOR SOLUTIONS THEATER
9:00 a.m. – 12:50 p.m.

LIGHTNING ROUND: APWA Top Ten Performance Measures for Fleet Professionals
2:15 p.m. – 3:15 p.m.
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LIGHTNING ROUND: National Weather Service (NWS) Roadmap – Improving Service to the Public Sector
2:45 p.m. – 3:05 p.m.

WHITE PAPER PRESENTATION:
Snow & Ice: An Ohio Perspective

CLOSING GENERAL SESSION:
3:30 p.m. – 5:00 p.m.

CLOSING GENERAL SESSION:

WEDNESDAY, MAY 9
8:00 a.m. – Noon
TECHNICAL TOURS

Let the Operators Take the Lead on Everything!
A Work in Progress: How Does a Growing City Tackle Snow Removal?
Excellence in Winter Maintenance

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1:00 p.m. – 1:50 p.m.

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3:30 p.m. – 5:00 p.m.

CLOSING GENERAL SESSION:
The City of Chattanooga in Tennessee has been celebrating the value of public works by participating in National Public Works Week for over ten years. 2017 marked the 11th annual Public Works Week where Chattanooga recognized hard-working employees and celebrated our connection with the community through outreach activities, an equipment rodeo, annual awards recognition, mayor’s proclamation, and employee celebration luncheon.

Employees gave back to the community by picking up litter along South Chickamauga Creek, preparing lunch at the Ronald McDonald House, and cleaning up the streets downtown. The cleanups gave employees who aren’t in the field every day a chance to get out and “get their hands dirty.” Equipment operators showed off their skills at the Equipment Rodeo on six different pieces of equipment: wheel loader, skid steer loader, backhoe, gradall, garbage truck and knuckle boom. Kevin White, State Street Aide, took home 1st place overall. He, along with the other top winners, went on to the annual TCAPWA Conference Equipment Rodeo in Knoxville to win the Team Competition.

“National Public Works Week is an opportunity once every year that we celebrate the importance of jobs performed by

Chattanooga looks forward to celebrating “The Power of Public Works” during National Public Works Week

Anna Mathis, Parks Outreach Coordinator, City of Chattanooga, Tennessee
the employees of Chattanooga’s Public Works Department,” says Justin Holland, Administrator of Public Works. “The maintenance of the city’s infrastructure and the programs that we provide are critical to the health, safety, and general welfare of our city. All through the year our employees provide essential services for residents, visitors, and businesses that help people live the lives they want to live in our community.”

One way Chattanooga celebrates their employees is by recognizing hard work and dedication through the annual Awards Program. Employees nominate their peers in the following categories: Employee of the Year, Merit for Operations, Merit for Support, Merit for Leadership, Young Leader, Community Involvement, Emergency Response, Innovations, Sustainability, Meritorious Service, and Project of the Year. John Lyons, Sewer Construction Manager, was recognized for his efforts on high-profile projects such as the North St. Elmo Drainage Improvement and Real Time Intelligence Center Construction. The 2017 Project of the Year award went to Alan Ogle, Senior Engineer, Hazen and Sawyer, and Haren Construction Company for the Moccasin Bend Wastewater Treatment Plant Hydraulic, Pump, and Bar Screen Improvements. With a project budget of $12.7 million, improvements included rebuilding two equalization pumps, installation of two influent screens at the influent pump station, installation of four influent pumps, and installation of one influent screen.

Citizens of Chattanooga were invited to explore the ways “Public Works Connects Us” by participating in a Scavenger Hunt via social media. The first to post four photos of different items such as a crew working, a storm drain, one of the equipment roadside displays or a selfie with the Public Works Administrator won a donated prize package.

The week concluded with the Employee Appreciation Luncheon, a time for camaraderie, including a friendly, but very competitive corn-hole tournament. This is one of the only times during the year that all 730 employees—from engineering, solid waste and recycling, wastewater, water quality, parks, street maintenance, and facilities management—get together.

Chattanooga is looking forward to celebrating “The Power of Public Works” in 2018 through our innovative events, awards recognition program, and community outreach.

Anna Mathis can be reached at (423) 643-6163 or amathis@chattanooga.gov.
At the end of 2017, APWA Government Affairs staff had the opportunity to take a behind-the-scenes tour of the D.C. Department of Public Works (DCDPW) Fleet Management Administration. Having admittedly never been to a public works facility prior to that sunny but brisk December day, I was blown away by not only the size of the facility, the number (and size) of vehicles, but also by finally having the opportunity to see (some of) the action that goes on behind the scenes to “make normal happen.”

During the tour, we met Demetria Harris who, among many other responsibilities, runs DCDPW’s L.E.A.P. Academy. L.E.A.P. or Learn, Earn, Advance, Prosper, is an initiative run by the D.C. Department of Employment Services (DOES), employing an “earn-and-learn” approach, linking unemployed residents of the District with opportunities for education, hands-on training and employment. A program that helps those in the community and helps the workforce issue that faces the public works industry? Color me impressed!

The L.E.A.P. Academy has been up and running at DCDPW since 2015, when their first cohort, Solid Waste Collection, started. Since then there have been two Auto Mechanic cohorts, and most recently they have begun a Parking Enforcement Officer cohort. One fact Demetria told us that really stuck out to me was that DCDPW received 265 applications for their most recent Auto Mechanic cohort—that’s 265 applicants for only 16 spots!

After our field trip in December, I knew I wanted to come back to DCDPW to learn more about the L.E.A.P. Academy, so I could in turn share information about the program with others. I e-mailed Demetria and we set up a time for me to come back in January. When I returned to DCDPW, I had the opportunity to speak with some of the current Auto Mechanic cohort participants. Terrell Steel, a 23-year-old current Auto Mechanic Academy participant, detailed the application process for me. There is an initial online application and essay, after which the pool is narrowed down. Remaining applicants must then pass a reading comprehension text, known as Casa. Finally, about 30 applicants are invited to participate in a panel interview, before the pool is narrowed down to 16 who are (contingent on passing a
drug and alcohol screening) invited to participate in the Academy.

The time period between the initial application and the first day of class is roughly three months. The only thing students need to bring with them on that first day is a desire and readiness to learn, as the DCDPW covers tuition, pays the salaries, and provides each student with their own tool box and other equipment. There is absolutely zero cost to the participant for the one-year Academy program, which is followed by a yearlong apprenticeship program. The zero cost is a huge attraction for participants. Explained Steele, “Usually you would have to pay for it (an education), but here you get it for free. Now I want to be a mechanic.”

Gary Lane, a 49-year-old Auto Mechanic participant, also liked the zero-cost aspect of the education, but he came to the Academy primarily to be able to live and work in D.C., affording him more time with his family. “Before I was living in D.C., but traveling all up and down the East Coast for work. Now I live and work in D.C.; I’m taking full advantage,” said Lane.

The Academy education program takes place from 4:00 p.m. to 11:00 p.m. Monday-Friday each week. Some participants, such as 24-year-old Eric Wagner, work jobs during the day before participating in the Academy at night where participants work on computer simulators and partake in various hands-on learning experiences.

The hands-on work experience participants receive ranges from putting on tires to changing parts on light and heavy vehicles, snowplows and motorcycles. “I’ve always been hands on, love taking things and putting them back together, so this experience is great,” said Wagner describing the Academy. The work isn’t all mechanics though; for example, Lane spent four months working in Customer Service, and was responsible for things such as making sure paperwork was opened and closed out correctly.

Demetria explained just how eager to learn the group of participants in the current Auto Mechanic cohort are. “During snow events, many of the group volunteer to come in and help for extra experience.” Snowplows, however, are not the only vehicles that participants learn to operate while they are in the Academy. DCDPW trains and pays for L.E.A.P. participants to get various vehicle operating certifications, ranging from CDL, to fork and aerial lifts.

Apart from earning operating licenses for various machines, participants in the Auto Mechanic cohort also earn certifications in CPR, OSHA 10 and Automotive Service Excellence. Throughout the year of Academy training, the curriculum covers 14 various disciplines, including A1-A8 (light), T1-T8 (medium and heavy), ASC Customer Service and ASC Parts P1-P2.

Steel, Lane, Wagner and their classmates are set to move on to the apprenticeship part of the program in April 2018. After serving as apprentices for a year, they will be ready to look for careers in the field. While DCDPW would love to hire all of the Academy graduates, usually there are only job openings for a few. Hope isn’t lost for those who aren’t offered a job; DCDPW, DOES and other strategic alliances work together to find employment opportunities for all remaining L.E.A.P. graduates.

As my January afternoon at DCDPW comes to a close, Demetria leaves one of her classrooms with a final thought, exclaiming, “TEAMWORK MAKES THE DREAMWORK!” before the class responds with an almost unison “BYE MS. D”! Clearly this is a professional and a program that are changing lives.

Emily Dowsett can be reached at (202) 218-6736 or edowsett@apwa.net.
Writing this in the spirit of the 2018 Winter Olympics, our quest for the gold medal (APWA accreditation) began a little over three years ago. Just as athletes prepare for competition, Canton’s core accreditation team began its planning early with the end in mind. We executed that plan nearly flawlessly, despite a few setbacks, and achieved the gold medal this past November.

Our major challenges
The Municipal Services Department provides planning services, building and inspection services, engineering services and, of course, public works services to the community which is a metro-Detroit suburb of roughly 97,000 residents.

We commenced the accreditation effort as the State of Michigan, including Canton Township, was emerging from a devastating economic recession that started ten years ago. We needed to carefully choose the right time to launch the effort to ensure a successful bid for the gold. Our main challenge was found in simply allocating the time to do it. We met this primary challenge by grinding it out over time, “putting in the required miles” each and every week. A methodical, well-planned approach had the core team working on only a handful of tasks every week instead of being overwhelmed by the almost 600 daunting practices that loomed.
The existing policy and procedure documents that we had were solid, but most were out-of-date and needed at least some revisions. This included numerous Township-wide policy and procedures that required a more complicated edit, review and approval process due to the multitude of departments affected. Locating the latest versions of some of our policy and procedure documents also presented a challenge, since there were many authors over the past 20-30 years. Again, we tackled these two challenges with a commitment to stay on track and, at times, enlisted staff in other departments to assist us.

So why did we apply?
Canton Township has long been recognized as a regional benchmark community and we really just wanted to “be the best we can be.” Accreditation through APWA is the international gold standard (the gold medal) we wanted to obtain. Our organization is already well-anchored by an accredited Police Department through CALEA, an accredited Leisure Services Department through CAPRA, and a Finance & Budget Department that routinely attains the CAFR requirements annually. It was a goal readily embraced by an already high-performing team.

Beyond the overreaching goal of being the best we can be, we really sought to achieve the following through acquisition of the gold medal:

1. To promote community awareness of the key role that our staff play in planning, building, engineering and maintaining our growing community infrastructure;
2. To achieve the recognition for the hard work of our staff each day across a broad range of positions; and
3. To join our colleagues in the Public Safety Department and Leisure Services Department in being accredited.

Early benefits
Beyond the “accolades and high-fives” with our fellow teammates, the gold medal means that staff can really embody the sense of pride in this achievement knowing we’ve joined an elite field of North American competitors as the 133rd agency accredited through APWA. Going forward we’re already developing a plan to tackle all of the non-accreditation related policy and procedures documents in 2018, as part of our ongoing commitment to the continuous improvement process.

We plan to defend our gold medal for many years to come and look forward to the challenges ahead on this journey.

Tim Faas can be reached at tim.faas@canton-mi.org.
Are you stuck, frustrated or bored? Are the engineers in your firm or government agency so busy that the frequency of field reviews or inspections get further and further apart? Does your agency or your firm need a full-time inspector for a large project? Do you have a degree in construction or engineering but are stuck drafting in a corner cubical or stuck in the office processing submittals? Are you of, let’s say, “mature age” or “getting up there” so much so that the Social Security Administration is scheduling a visit to your house to help you fill out benefit forms? Are you a retired professional engineer or construction manager and bored beyond your limit?

Did you say “yes” to one or more of the questions above? If so, keep reading.

I work at a mid-sized engineering firm in California (Provost & Pritchard Consulting Group), and on a weekly basis there are all sorts of construction projects being let out to bid. It is impossible to name every type of work that gets designed and engineered at P&P, but a few examples of projects are as follows: sewer system upgrades, water system upgrades, water and wastewater treatment plants, hospital work, bridges, roads, dams, check structures and conveyance for irrigation water, buildings of all types and uses, and so on. The construction and engineering marketplace is booming in central California with heaps of public and private development happening. Because of increased developments, infrastructure must grow too! I do not know for sure but from what I see in the news, many states are experiencing increases in development and growth as well. Someone needs to perform field observations and inspection duties, right? Might as well be you.

Are you stuck in the same ol’ job with the same scenery day in and day out? Do you want a change? If you do, I’ve got good news. Obtaining an APWA Certified Public Infrastructure Inspector (CPII) certification will help you escape the monotony of settling in behind a desk at 7:59 a.m. and walking (or bursting) out of the office at 5:00 p.m. There are many exciting things going on outside the four walls of your office or the three-and-a-half walls around your cubicle. Getting a CPII certificate is a good first step to advancing your career or changing its direction.

Travis Vickers, CPII
Senior Field Representative
Provost & Pritchard Consulting Group
Fresno, California
As I have said in previous articles (which by the way is worth repeating), obtaining the CPII certification brings credibility and legitimacy to inspectors who are not licensed professional engineers. In fact, it is becoming more and more prevalent that construction managers are also becoming inspectors. There is a greater need for inspectors than you probably realized, but what you may be asking yourself is, “Where do I start?” That answer is simple—apply to become a CPII.

You could essentially get certified in a plethora of different disciplines, e.g., Certified Welding Inspector, Soils and Concrete Testing, and Sewer and Water Mains; but since APWA has covered all public infrastructure in one certification, it just makes sense. It could take some people years to collect enough NICET certs to cover what now is an all-inclusive CPII. Now, if a project requires a certified welding inspector or a certified soils technician, you should absolutely follow what the contract, engineer, ordinances, or law requires.

What about women? Yes. Of course. Absolutely. I have several women colleagues who perform field compliance and inspection duties. If you are a woman or a man and qualify to sit for the exam, obtaining a CPII certification is an excellent way to advance your career as well.

Some of my colleagues are also retired professional engineers who frankly were tired of sitting at home. It is an excellent way to work part-time to supplement retirement income. Some of my older, or shall I say “mature” colleagues, will sometimes take projects on that are three months in duration and then take three months off. Most small projects only warrant part-time inspection anyway, so if you wanted to work year-round part-time, there may be an opportunity for you.

After your application process is completed, the rest is straightforward. Take the CPII examination. APWA is there to help. When I studied for my certification test, I reviewed the subject matter provided on the recommended reading list starting with subjects that I was least familiar with and worked from there. If I can do it, you can do it too. Don’t be stuck at doing something you don’t like. Don’t be frustrated or bored anymore. If you want to learn more about construction and engineering while working outside, get a certification that is credible from a credible organization: the American Public Works Association – Certified Public Infrastructure Inspector.

Travis Vickers can be reached at (559) 449-2700 or tvickers@ppeng.com.
Strong, well-defined certification programs secure the competence of professionals through a process that measures the skills and knowledge of the individual against industry standards. When employers are searching for the best candidate to hire or promote, certification is most often the determining factor. For this reason it is important to earn certification in your field.

Professional certification is a requirement for many fields today. For example, Finance (CPA), Project Management (PMI), Supply Chain (APICS), and Information Technology (ITIL) are just a few from a wide range of professions that have voluntary and/or mandatory certification. It is then only logical that as the field of fleet management becomes more technical, and prominent in the eyes of upper management as a way to control costs, it too would become a field requiring certification.

Certification as a fleet manager helps employers, public and private, to assess potential new hires, gauge job performance against industry standards, select fleet management contractors, and motivate employees to continue improving their skills and knowledge through a coordinated succession plan. Certification gives credence to the level of competency a fleet manager possesses, shows their dedication to the profession, while helping with promotions.

Certification as a fleet manager has gained popularity—it helps advance the profession. Certification helps promote fleet management as a true professional career and not just a footnote in a larger overarching management scheme. Employers are constantly seeking ways to trim the bottom line and a certified fleet manager gives that employer the confidence in knowing they have the right person in place to cut costs in that area. Certificate holders benefit as well through qualified recognition and stronger job security. Certification gives recognition of competency, shows commitment to ongoing training, and helps with separating oneself from the “pack.” It is no surprise then that there has been an explosive growth in professional certification.

With technology and fleet management practices changing at an ever-increasing rate, a discontinuity is formed between the traditional “hands-on” education and the high-level technical and management competencies required in today’s fast-moving fleet industry. The fleet manager certification programs were established to bridge this education gap.

Achieving professional certification documents one’s expertise and signals one’s personal commitment to professional development. In addition, certification provides a strong collective commodity through which individuals are rewarded financially and professionally.
Fleet manager certification programs provide an array of skills needed to perform in the increasingly technologically developing fleet environment. With these programs job-focused, the industry and the candidate can be assured that a certified professional has mastered the full range of skills required to be successful in complex environments.

**Why is certification important?**

Professional certification helps one to:

- Acquire practical skills for the job by focusing on the knowledge needed to perform real-world job responsibilities.
- Remain up-to-date by augmenting one’s college degree with field-specific training.
- Continue to grow professionally, which translates to higher potential for advancement and staying ahead of the pack.
- Materialize the benefits from a broad range of detailed skilled areas.
- Learn all aspects of a specific type of career pursuit.
- Provide the organization with a standard of excellence and reliability.
- Effectively integrate these career pursuits into one’s specific work setting.
- Potentially earn a higher salary.

**Certification builds leadership skills**

Certification can be a vital part of a good succession plan. An employee can increase their personal effectiveness in fleet management areas as well as general technical management. The professional certification provides a means that equips one with specific skills and talents that are recognized industry-wide and shows the individual is a conscientious leader.

When a fleet manager pursues a professional certification program, it becomes part of his/her personal training. They acquire the skills needed to be competitive in the open job market. Undertaking studies in a recognized professional association such as APWA or NAFA with national membership provides nationwide recognition by employers/recruiters.

Certification exams go beyond just training; they provide a measurement of knowledge and skills against the industry standard. When employers are looking to hire or promote, education is an important determining factor, which is why it’s important to earn certifications in your field.

The job market is extremely competitive, which is why obtaining the proper certifications is so important. The ever-changing fleet management field also adds to the importance of certification as it is becoming increasingly important to curb costs in the realm of tightening budgets. Gone are the days of “keeping the fleet rolling” through sheer years of experience. It is now replaced by detailed cost analyses of “cradle to grave management” accomplished through highly efficient stewardship of every piece of fleet equipment in order to obtain the most return on investment possible. In addition, huge advancements in the fields of business management, information technology, and fuel management dictate that certification is not only a good tool to have in one’s allotment, but is fast becoming a requirement.

Scott McIver can be reached at (864) 449-9620 or smciver@greenvillesc.gov.

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**Nominations for National APWA Committee Appointment**

APWA is now soliciting nominations for appointments to national level committees/task forces/external relationships for the August 2018-2019 year. Step forward and offer your expertise to your profession. Beginning February 23, 2018, information on appointments may be obtained on the APWA website at www.apwa.net/membersonly/nominations. A brief biographical statement must be completed online or submitted as a hard copy to be considered. Nominations must be completed online or by mail between February 23, 2018 and close of business March 23, 2018. For more information contact Teresa Hon at thon@apwa.net or (816) 595-5224.
When faced with the threat of potential adverse weather conditions such as tropical storms and hurricanes, public works officials are sure to lose some sleep. The better prepared we are, the more comfortable we are to tackle these challenges. The best time to think about hurricane preparedness is when there is no threat on the horizon. The proper answer as to how to prepare and respond to these threats is literally a million dollar question. I have been fortunate in my thirty-plus year career in public works to experience different perspectives to this question from two different cities.

I worked for 28 years for the City of Newport News, Virginia, before retiring to start a new career for the City of St. Augustine, Florida. Both cities are low-lying coastal municipalities which are prone to flooding, tidal surges, damaging waves as well as wind and rain devastation. Newport News and St. Augustine differ uniquely in terms of size, population and budgets. Newport News has a land area of over 70 miles, and a population of close to 200,000. The city is located in the coastal plain of southeastern Virginia. The terrain is flat to rolling hills. Most of the city’s land area drains into the James River and Hampton Roads Harbor. The city has 244 miles of shoreline. Newport News is part of the Greater Hampton Roads Metropolitan Region, which has a population of over 1.6 million people. St. Augustine is a city on the northeast coast of Florida. The city lays claim to being the oldest city in the U.S. The city is a much smaller city with a land area of just over 12 square miles and a population 14,000. The terrain is mostly flat with a combination of islands bordering the Atlantic Ocean, downtown area on the Intra-coastal Waterway, and many rivers and creeks winding through the land mass.

The City of Newport News has the resources to be much more proactive in its approach to hurricane response and preparedness than the City of St. Augustine. Newport News has officially adopted the NIMS (National Incident Management System) Incident Command System for on-scene incident management. Each and every employee in the Public Works Department is required to take NIMS certification training at the beginning of their employment. Refresher training is mandatory for each employee on an annual basis. The annual refresher training is conducted in-house each May, prior to hurricane season, and includes onsite drills. The drills require management to create scenarios in pump stations, city buildings, roads/ and bridges as well as other infrastructure facilities to simulate storm damage. Marks are placed on walls to
represent waterlines, fence and gate sections are highlighted, trees are tagged as down, etc. Flooding and wind damage are simulated throughout the city and each DAT (Damage Assessment Team) team is staged and then released to perform assessments. The City has a FEMA consultant contacted year round who conducts and oversees all aspects of the training and drills. The consultant assists in the development of emergency management functional plan as well as the all-training requirements throughout the year. In addition, the consultant is responsible for the assurance of all forms and documents adequacy and FEMA compliance. The plan includes all aspects of what is expected from each employee including their birthing assignments. This plan is updated four times per year to adjust all changes, such as FEMA updates, personnel changes and training updates. This plan includes every employ to stage and remain at work through the storm. After the storm has passed everyone performs their assignments prior to being placed on a 12-hour on and 12-hour off day-night schedule.

Each division establishes a Damage Assessment Team (DAT) of personnel knowledgeable of assets/infrastructure specific to their division. Each DAT has a DAT Leader. The DAT Leader ensures that team members are well versed on the proper way to assess damage of their assets. Each division establishes a DAT Division Coordinator to perform QA/QC and compile information for submittal to the Public Works Planning Section and EOC Coordinator. The City of Newport News maintains its own fully functional EOC. Each member of the EOC receives their own training for their predetermined positions. The EOC uses the DOC system to prioritize and dispatch the crews in the field. They are also responsible for creating service requests and work orders through the CityWorks system which is updated every 12 hours. The city is divided into three sections, and each section is staged in a different section of the city. Each section is staged with a shipping container stocked and maintained with everything one could foresee needing to respond to an event such as chainsaws and supplies, portable generators, gas, lights, batteries, hand tools, personnel PPE, coolers, water, etc. All inspections and any repairs are completely documented and submitted to FEMA on preapproved forms.

During my relatively short employment with the City of St. Augustine, we have experienced one tropical storm and two hurricanes. Being a much smaller city with limited resources the approach and response to these events are much different. St. Augustine does minimal in the field of training and preplanning. With a small workforce it is very difficult to spend the time and resources to conduct the necessary training required to implement a plan such as Newport News rigidly complies to. The threat of these events starts a series of meetings with Public Works officials, the Fire Chief, and the City Manager. Prior to Hurricane Matthew it seemed as though the management of Public Works took the lead and dictated the plan for addressing the approach to the storm. With the approach of Hurricane Irma the Fire Chief led the plan and led through much of the response. There were slight differences in the prep and response to the two events; however, the outcome to each event was handled very well.

The EOC responsibilities are conducted through St. Johns County with the City of St. Augustine maintaining
management personnel representing each department on staff 24/7 at the EOC. These staff members maintained direct communications with leaders of each division. Each division kept a small number of employees through the event and they worked as the first responders. These first responders played different roles during Hurricane Matthew and Hurricane Irma. After the storm passes every employee is expected to return to work on their predetermined 12-hour on and 12-hour off day-or-night schedule. Crews remain on these schedules until utilities are restored.

Most of the FEMA documentation was developed during and just after Hurricane Matthew and was implemented for Hurricane Irma, which worked out quite successfully. The data collection process was lengthy due to the limited number of personnel available for this task. Each division utilized their own personnel to track and document required forms documentation. Each division used a standard FEMA form to track employees time and progress. Employees are responsible to maintain their own forms and submit them at the end of each shift.

Though very well organized and covering all aspects, Newport News’s approach makes sure all bases are covered. They could be a model to other cities. However, this approach would be very difficult to implement in a city such as St. Augustine. Newport News processes the resources to be self-reliant and each division is capable of carrying out almost any task required. St. Augustine strives as well as it does because each department and each division must rely on each other for success and they do this remarkably well. While each employee at Newport News always knows his or her exact assignment and there may be some confusion with the employees in St. Augustine, the feeling is that the majority of them are more empowered to make decisions as individuals. Although St. Augustine is not as well organized with their approach and response, they do possess the flexibility to easily adapt. Working these events in Newport News, I always felt prepared and knew what was expected of me. Working these events in St. Augustine may be a bit more hectic; however, the City of St. Augustine did a tremendous job of keeping every employee well fed and went to great lengths to assure the well-being of each employee’s family.

My perspective looking at the approach of both cities would have to be: There is no “one size fits all” answer. Every city is unique and must find what works best for them. No matter what approach your city or county implements, always look for ways to improve.

Danny Hodges can be reached at dhodges@citystaug.com.
It is refreshing to see women’s issues rising to the fore with highly publicized, Hollywood-led campaigns such as #MeToo and #TimesUp. For the first time in a long time, women’s issues are headline news on a global scale. March 8 is International Women’s Day and this year the theme is #PressForProgress; it’s a reminder to keep motivated and demand gender parity.

So where are we now? The World Economic Forum’s 2017 Global Gender Gap Report reviewed the gaps between women and men in four key categories: health, education, economy and politics. It found that the global gender gap stands at 68%, meaning that globally women are 32% less equal to men in the aforementioned categories. Interestingly, Canada and the U.S. were ranked as the 16th and 49th most equal countries respectively out of the 144 countries indexed. Both of them scored comparatively well when it came to economic parity with Canada ranked as 10th most equal (73% parity) and the U.S. ranked 3rd (75% parity). However, when looking at contextual data relevant to public works, both countries demonstrated that they were doing a poor job of encouraging women to enter into post-secondary degrees that generate the public works leaders of tomorrow with only 22% and 19% of engineering and construction graduates being female in Canada and the U.S. This is important because one of the keys to closing the economic opportunity gap has been identified as having more women in charge. The report shows that when women are
participating in leadership roles, more women are hired right across the board at all levels.

There is no better time for us in the public works arena to use International Women’s Day as an opportunity to unite, celebrate and advocate for women in public works. With this in mind I took the opportunity to speak to three female public works leaders in my chapter and asked them what they think it takes to be a successful woman in public works, what changes they have seen, and how we can advocate for more women in our field.

Susan Clift provides consultancy services to municipalities in the area of public works and engineering. She worked at the City of Vancouver for 25 years where she had the accolade of being the first female engineer ever hired and more recently served as the Director of Public Works and Engineering at the City of Colwood.

Jen Fretz is the Director of Public Works and Utilities at the City of Kamloops. Jen is an engineer who started out in the private sector and has been with Kamloops since 2004 where she progressed through a variety of public works managerial roles to her current role.

Nikii Hoglund is Director of Engineering and Public Works at the City of Colwood. Prior to working in the municipal world, Nikii worked in the private sector in the civil construction and rail industries and she has managed projects in New Zealand, Australia and Peru. Closer to home, Nikii’s first public works role was at the City of Richmond. She has also held roles in North Vancouver, Lions Bay and Sechelt.

1. What attracted you to public works?

Susan: It’s important work, elemental to society. I also like working with practical, resourceful people who take pride in doing a great job. People in public works like to get stuff done!

Jen: I never thought about becoming an engineer. There was a boy in my class who was going to pursue a career in engineering. I thought, “I can do that too.” My other options would have been a lawyer or a doctor. I am glad I opted for engineer; it is so rewarding to serve my community.

Nikii: When I was given the opportunity to do construction for the greater good as opposed to completely for profit, it was a great fit for me.

2. What do you think women bring to public works?

Susan: Women advocate for new approaches, and have great problem solving and listening skills.

Jen: A totally different perspective and an ability to marry community with operations. Women have real insight when it comes to what the community wants. Women’s ideas make their community better to live in. I dislike the attitude of “we do it this way because we’ve been doing this way forever”; women can change that.

Nikii: Honestly, what we bring to the field is no different to what men in public works bring—a desire to better a community and make a difference in people’s everyday lives.

3. Do you think public works is ready for more women and what opportunities do you think public works offers women?

Susan: In most cases, public works is ready for more women, especially larger organisations. Smaller organisations may be less ready as they may have less experience of hiring women.

Jen: Public works is ready for more women. The sooner the better, women are very much under-represented.

There is no reason why women can’t work in this field. Public works offers women the opportunity to mould their community and bring benefits that may not have been thought of without a woman.

Nikii: Yes, I absolutely feel that public works is ready for more women, and I have been very lucky to have worked with some absolutely stellar women in various roles in public works. Public works offers a living wage, great benefits, and a team atmosphere. There is a great sense of accomplishment and pride that comes with ensuring that the public enjoys the wonderful parks, facilities, and infrastructure that is there to serve them.

4. What do you think are the barriers between women and public works?

Susan: It depends upon the organisation but a lot of times the entry-level jobs involve physical labour. The barrier is how we choose to bring people into public works. Women excel in technical and equipment operator positions.

Jen: It’s not typically or historically considered “women’s work.” Trades for example are not typically attractive to women. We can do much to change this by encouraging young women to consider these areas during their education.

Nikii: I think most of the barriers now are self-imposed—it simply isn’t thought about as a career path by women as much as it historically has been by men. I think we have to actively promote this career path in schools and at a young age—like primary school outreach.

5. Have you seen attitudes towards women in the public works workplace change?

Susan: Change has been sporadic and depends upon the size of the organisation. The more women an organisa-
tion has the better it will be. The first woman may struggle and will have to prove herself.

**Jen:** Attitudes are changing and I have seen improvements in the last 15 years that I have been with the City. I remember one time I was out at a work function with the CAO who is male. Many people automatically assumed I was there with him on a personal level and were surprised when they learned I was the Director of Public Works. It saddens me and I wonder why people would be surprised.

**Nikii:** Definitely—the “old boys club” reputation was absolutely earned. However, as more women are employed in public works, this naturally dissipates. Also, new employees, both male and female, have very different opinions about gender-based roles than some of their predecessors.

6. **Do you have any tips for women on how they can excel in the public works arena?**

**Susan:** Play to your strengths, don’t try to emulate your male counterparts. Don’t let men define what “tough” means.

**Jen:** It is important that women in public works connect with one another. If you have a problem, it is likely that there will be a woman that will have come through it already. We can help each other and it is important to take advantage of that.

**Nikii:** Be yourself, ask questions, and listen to the answers. Be the one with the best skills, knowledge and ability to do the work, get hired on merit, and get promoted on merit. Make sure you can do all aspects of the job you apply for, and be willing to learn the things you don’t know. All of the women who I know that excel in public works have three things in common—they work really hard as a part of a team, they ask questions when they don’t know the answers and provide feedback to others when they think it would be of value, and they come to work with a great attitude—exactly the same recipe for success as for men.

**References:**

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Diversity has become one of the many industry buzzwords in business and public administration. People talk a lot about diversity, but few really know what it is or why it is important. To many, diversity in the workplace equates to affirmative action or hiring quotas. Some people think it is the need to hire certain ethnicities or women in order to meet a goal for their organization. Others are not sure what diversity really is.

First, we must understand the definition of diversity. The Merriam-Webster Dictionary definition is: “the condition of having or being composed of differing elements.” So, you may be thinking that by using that basic definition your workplace is diverse, right? Sure, you have all types of different elements: Your organization is made up of different types of workers—accounting people, hydraulic engineers, street maintenance workers, etc.—but does that count as diversity?

The second part of the Webster definition of diversity is “the inclusion of different types of people (as people of different races or cultures) in a group or organization.” I would add that gender is an important part of the discussion as well. So, you are thinking that your organization is diverse because you have that one guy from that one country on your team, or that lady with that religion that you see in the breakroom. However, the existence of one or two or even five people doesn’t necessarily make your workplace diverse. Optimally, the workplace should be a reflection of the community in which it serves or the workforce from which it draws. Depending on the area of the country, the demographics of cultures and races of people are different. The cross-section of the employees should give an indication of the greater population. However, often this is not the case. Additionally, many workforces don’t even demonstrate the appropriate representation of women, even though most locales have a close to 50% female population.

All that said, the key word here is inclusion. Diversity is in the workplace greater than just racial or gender classifications. Diversity is more than just hiring minorities. Diversity is the inclusion of persons in the workforce which are a part of the greater human experience.

So, why is diversity important? Well, have you ever heard the old adage that goes something like: “One of us is not as good/smart as All of us”? That really sums it up. The idea that persons all sourced from one similar life experience and background can come up with different ways to do things has been utterly and totally debunked. People are an assemblage of many things. Education, values, life experiences, and personal desires are some of the many factors that guide our thought processes and choices. If you or your agency needs to brainstorm your way out of (or into) something, grabbing everyone who has the same or similar background may not always net you the best or most innovative solution. You may find consensus on how to move forward, but does that mean that the direction that everyone agrees upon was looked at from multiple angles? Or was the situation sized up only from the one point of view which was already shared by everyone in that group? Organizations are finding that diversity of the workforce can yield
And what about the quality of work life? Well, that can improve too, with increased diversity. If the workforce diversifies and becomes more reflective of the population, the incidents involving discriminatory activities in the workforce could be greatly reduced. Conflicts due to cultural bias or a lack of understanding about disabilities, lifestyles, and religions can also be minimized when coworkers share with one another about their own backgrounds and practices. Sexual harassment and systematic gender-based unequal pay status might be mitigated as well. However, this will only be the case if the workforce diversity is distributed throughout the agency hierarchy, and not fixed to one level or area within the organization.

Admittedly, there are some barriers to achieving diversity in the workplace. There are work sector types that traditionally have not hired certain groups of people. That is a bit of an unfair statement, as many sector types simply have not seen diversity in the applicant pool. The lack of diversity in these cases may be largely due a lack of interest of diverse applicants to a sector, and not a discriminatory practice in hiring. So, how do we fix that?

It’s not just a matter of advertising job postings in certain cultural clusters or with organizations which service certain populations. Sometimes the applicants simply don’t exist. However, you must understand that it’s due to a history of sorts. For instance, why would a population of persons that are not represented within a job sector want to take up an educational endeavor or career field where they see that no one like them is currently employed? Well, they often don’t. Instead, they continue to work in the sectors that their population is represented in the workforce. So, the same reasons that organizations are not diverse are the reasons why diverse applicants don’t apply—people tend to migrate toward that which is most comfortable. People find comfort in being around others who are “just like me,” whether that is life experience, education, religion, sex, or something else. The applicants don’t desire to work where they don’t think they will fit in, just as much as the person responsible for making the hiring decision doesn’t think that the diverse applicant is enough like them to fit in. So, then what?

In this case, we have to invest. We have to plant seeds. Take opportunities to showcase the benefits of your job sector and agency at college job recruitment events, high school summer employment fairs, and junior high career talks. Partner with guidance counselors and job placement professionals to help you spread the word and tell your story. Be a mentor or begin a mentorship program at your agency. None of this pays off immediately, but if your agency intends to increase diversity, then these strategies and others should be utilized. And, if all else fails, hire a professional who can come in and analyze your organization and make specific recommendations on next steps. No matter how you go forward, diversity must be placed high enough on the organization’s priority list to be an ongoing effort with a clear purpose and direction—there will be no success with half-hearted execution.

No matter the agency mission, collaboration from multiple perspectives can bring the most optimal results. Organizations are understanding that diversity is greater than an artificial goal to attain—it is a necessary component for success and achievement. There is no easy or fast fix, but it can be done, and you are not alone. Don’t forget that APWA can be a great resource. Reach out to your APWA Chapter Diversity Liaison on how you can learn more or how you can become involved in diversity efforts in your chapter.

The APWA Diversity resource guide offers this: “Diversity means ‘all the ways in which people differ from each other’ and how we accept and use those differences depends on whether diversity becomes an asset or a liability for APWA, its chapters, and for our workplace. The American Public Works Association values all individuals and different perspectives of those individuals, and believes in providing the process for all to feel included as part of the whole. Diversity includes race, gender, creed, age, lifestyle, national origin, disability, personality, educational background, and income levels.” And now you know. The only thing left is the doing.

Sonja R. Simpson can be reached at (740) 323-5202 or Sonja.Simpson@dot.ohio.gov.
The U.S. Green Building Council (USGBC) has granted LEED Certification to Richmond DPW’s Commerce Road Building 1 at 1654 Commerce Road. The building has been designated silver certification under the LEED 2009 New Construction and Major Renovations rating system. It was one of four buildings approved as a Capital Improvement Project.

Seven categories comprise the overall USGBC rating criteria: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation and design, regional priority credits. Of the available 108 points, 52 were attempted and 53 were awarded. Silver certification is granted at 50 points.

Commerce Road Building 1 was recognized in several areas, including: water efficient landscaping, indoor air quality plan during construction and before occupancy, control of system lighting and thermal comfort, bicycle storage and changing room.

According to the Council, LEED certification “Identifies your building as a showcase example of sustainability and demonstrates your leadership in transforming the building industry.”

The Council is now encouraging the city to share its work with the growing green community. Making the project public would put the Commerce Road building in the Council’s LEED project directory. Such projects are also eligible for additional marketing and promotional campaigns.

The Commerce Road Building 1 houses the administrative offices for the department’s Operations Division.
Being a Government Affairs Manager with APWA, I am afforded the opportunity to meet with a variety of federal agencies and their representatives to learn about their respective missions and roles and to discuss APWA’s membership and priorities. One agency with which I spend a good deal of time is the Federal Emergency Management Agency (FEMA), which is under the Department of Homeland Security. FEMA, which is comprised of just under 10,000 employees, works vigilantly to support our nation’s efforts to protect against, mitigate, and respond to all hazards.

In reviewing FEMA’s responsibilities and how they correlate to the APWA membership, I am always looking for information that APWA members may lack, but would find helpful in meeting their customers’ needs. To that end, I had the opportunity this past January to meet with Ms. Linda Mastandrea, Director of the Office of Disability Integration and Coordination (ODIC) at FEMA. The meeting produced several interesting insights. Furthermore, I left with the reassurance that the ODIC is being led by a high-energy individual looking to provide the highest quality of customer service.

The ODIC was established in 2010 and has been led by Ms. Mastandrea since October 1, 2017. She is an attorney who has spent her career concentrating on disability law and civil rights. She is considered a subject matter expert on inclusive emergency management practices.

The ODIC mission is to lead FEMA’s commitment to achieving “whole community” emergency management, inclusive of individuals with disabilities and others with access and functional needs, by providing guidance, tools, methods and strategies to establish equal physical, program and effective communication access. Most notably, when Ms. Mastandrea expounded on her goals for the ODIC, she shared the following:

“I plan to integrate disability issues into all the programs and services that FEMA offers. What does this look like? My office provides advice and guidance to program offices across FEMA to ensure we are serving disaster survivors with disabilities effectively across the organization, as well as providing good guidance to our state, local, tribal and territorial partners on disability issues.”

During the approximately twenty minutes we met, Ms. Mastandrea and I discussed how APWA could utilize the services provided by the ODIC. It was immediately apparent that she is eager to work with APWA to provide training and technical assistance to our members seeking such support. For example, a best practice, according to the ODIC, is for emergency management personnel to establish a relationship with a Regional Disability Integration Specialist. There is one specialist in each of the 10 FEMA regions whose primary job is to provide guidance, training, and tools for facilitating disability-inclusive emergency preparedness, response, recovery and mitigation.

How does Ms. Mastandrea envision working with APWA public works professionals? She offered up this statement:

“I think there’s a great growth opportunity for the Office of Disability Integration and Coordination. As the disability integration cadre, we’ve been very much focused on the individual assistance side of the house, and I’m looking forward to bringing our expertise and experience to bear on better engaging with the public assistance mission of the agency and, in turn, with public works professionals on how to address disability and accessibility issues.”

By tapping into the resources and information offered by the ODIC, APWA seeks to empower our members by connecting them with the tools they need to meet the challenges they face in providing equal access to emergency services for citizens with disabilities. The ODIC can be a valuable resource at APWA member meetings, and I am confident that, moving forward, this will be a valuable working relationship, beneficial to both APWA members and FEMA. Finally, I would recommend taking the time to dig into greater detail about the ODIC, by visiting their webpage at https://www.fema.gov/office-disability-integration-and-coordination.

If you have any specific questions, please feel free to reach out to me at mwilliams@apwa.net.
How many times have public works professionals thought, “If only our state and national officials understood how they could really help us to do a better job in delivering public works to our communities, we could get so much more done!” The APWA Government Affairs Committee’s job is to tackle these communications challenges and work with our over 30,000 members to advocate for change—more funding, less bureaucracy, as well as more services to the public, at a lower taxpayer cost.

The primary reason why it is so important to bring the public works voice to the discussion is to give specific examples about your community on why changes are needed, and what innovations or practices are working well. APWA has members in each state and each Congressional district, so we can effectively reach out to decision-makers in all regions, political parties, and committee leadership positions. Our members are the experts in the field who know that “flushable wipes” are terrible for the sewer system, for instance, or that private investors won’t pay to fill potholes on our local streets.

During PWX this past summer in Orlando, Fla., many APWA members visited the Tell Your Story booth to share their real-life experiences that are such a critical part of communicating our message. These stories are requested all the time by decision-makers and elected representatives because the stories provide on-the-ground insight into how their policy decisions truly impact communities. There is also a Tell Your Story section on the APWA website where APWA members may submit information about experiences and real-world examples of community projects—the successes and the challenges. Simply go to www.apwa.net and click on the Government Affairs tab and you will see a link to Tell Your Story, then follow the prompts.

Not everyone can make it to PWX, and because there are advocacy opportunities and challenges at both the federal and state levels, the APWA Government Affairs team has taken a presentation on the road. The purpose is to reach more APWA members and empower the chapters to advocate on behalf of public works priorities. These advocacy workshops are helping APWA members to learn more about the APWA resources available to help in monitoring key federal legislative and regulatory developments, and to learn how to find state level resources as well. The advocacy trainings began in April 2016 and are led by APWA’s Director of Government Affairs Andrea Eales. The advocacy trainings are tailored to the goals of the chapter, and can focus
solely on advocacy or on advocacy and media outreach on the local, state and federal levels.

These customized workshops cover:

- National APWA tools for effective advocacy
- Communications Strategies for Educating Policy-Makers
- Engaging the Media
- Preparing and Empowering Your Chapter Members
- Current Legislative Issues and Initiatives
- Interactive Practice Sessions

One of the upcoming advocacy and media workshops is scheduled to be held in Monterey, Calif., on Tuesday, March 27, in conjunction with the statewide Public Works Officers institute. Many APWA members from around the state will already be in town, which is important for California because it has nine APWA chapters that work to coordinate activities. These chapters hold a monthly advocacy call, so this event will be an opportunity for the team to develop strategies in person, early in the California legislative session. Conducting the workshop will be the APWA Director of Government Affairs Andrea Eales; Emily Dowsett, Government Affairs Media Manager; and Lisa Ann Rapp, Chair of the APWA Government Affairs Committee and the APWA California Chapter Advocacy Committee. In addition, representatives from the California League of Cities will provide information on the key statewide issues for 2018, including the status of the proposed recall effort for the new State Bill 1 gas tax revenues, which jeopardizes substantial new funding for local road and street maintenance, sidewalks, bike lanes and transit service. APWA President Bo Mills will visit the conference and has been invited to join the training session.

To attend the advocacy workshop in Monterey, here are the details:

Advocacy and the Media at the Chapter Level - Get Involved!
Tuesday, March 27, 1:00 p.m. - 5:00 p.m.
Monterey Conference Center
RSVP to Lisa Rapp at lrapp@lakewoodcity.org
To learn more or to host an advocacy training for your chapter, please contact Andrea Eales at aeales@apwa.net.

Come meet with the APWA California Advocacy Group in Monterey!

Debbie Hale is the Executive Director of the Transportation Agency for Monterey County, California. She currently serves on the APWA Government Affairs Committee and is the Delegate for the APWA Monterey Bay Chapter. She can be reached at (831) 596-4542 or Debbie@tamcmonterey.org.
Most often, leadership is defined in terms of an individual’s ability to inspire others and being prepared to do so. This model depends on the person’s ability to communicate to others in a way that engages them to act as the leader wants them to act.

Another model for leadership depends upon an individual perceiving a need and doing something to fill it—communicating more by example than by word. This is the type of leadership that caused Danny Soto to be nominated for our “Recognize Your Leaders” series this month.

Danny is a code field operations supervisor in the Environmental Services Department/Code Compliance Division for the City of El Paso, Texas. Code Compliance Manager Richard Adams nominated him for his leadership by example. “He took it upon himself to write the Standard Operating Procedures (SOP) for the Division of Code Compliance so all officers could have a baseline and standard of procedures,” said Adams.

As if that weren’t enough of an accomplishment, Adams went on to say, “In addition, Danny took it upon himself to develop and create a syllabus and class materials for the first-ever Code Academy for all new, incoming code officers.”

In Danny’s “day job,” he oversees two officers who each supervise 10 code officers in the field. Their jobs require them to look for various code violations, for example, nuisance issues, high weeds, parking infractions, dirt or debris on sidewalks, etc. In short, they issue citations for any situation that makes El Paso less beautiful and safe for residents and public works personnel as they do their jobs.

“Because there was no communication between supervisors at the time,” Danny observed, “the code officers were islands out there. This resulted in inconsistencies in when or why a citation might be issued, and this drew complaints from citizens.”

Recognizing the need for some baseline standards, Danny started writing them out. Danny has been in his current position for about three years and was a field officer himself for approximately six years, and he began his career in public works as a meter reader for the Water Department. He has literally been through the ranks, so he understands that the inconsistencies were problematic for both code officers and the community. If one code officer issues a citation, the
A simple definition of leadership is that leadership is the art of motivating a group of people to act towards achieving a common goal. Many times we find ourselves thinking of leaders being only at the top of an organization. Not so. Leaders are found at all levels within our public works organizations. Most often, they are anonymous; they are simply doing their jobs and yet, their actions impact many.

Look around your organization and find someone to recognize for a specific project they have done. It could be your manager, first-line supervisor, assistant, or janitor. Submit the name of the individual and a brief summary of the project you would like to recognize them for to Deanne Cross at dcross@apwa.net.

All submissions will be reviewed by members of the Leadership & Management Committee. Those individuals selected will be recognized in a future issue of the APWA Reporter.
FEAR OF ICING

With winter weather facing many parts of the country, few readers will need to be reminded that ice—coating vehicles, road surfaces, wires, and equipment—is a problem in public works. Researchers have long sought to develop surfaces that can inhibit ice formation, a characteristic sometimes called icephobicity because of the relationship to hydrophobic surfaces. Icephobic chemical treatments are currently used to retard ice buildup on high-voltage electrical insulators and in rail tunnels, for example, and brine pretreatment of roads helps reduce formation of plow-resistant pavement icing. But the search continues for practical ways to prevent ice buildup in the many situations where current methods cannot be applied. And by some reports lately they may be making progress.

The progress comes from both increasing understanding of the process of ice formation on surfaces and learning to develop surfaces that inhibit ice formation or prevent ice from adhering. Recently-published results of studies using high-speed photography, for example, showed that under the right conditions a freezing water droplet on a hydrophobic surface will forcefully dislodge itself rather than freeze to the surface on which it is resting. Freezing progresses from the outside of the droplet inward, and the expansion of the freezing water will exert sufficient pressure on the unfrozen quarter (remember that water is incompressible) to explosively burst the droplet. It seems that self-dislodging of the freezing water requires basically that surface must be thermally insulating as well as hydrophobic to ensure that solidification progresses inward from all directions. The physics are complicated, however; a thermally-conductive substrate plays a role.

Researchers have experimented with a variety of methods for making surfaces icephobic, for example, by preventing ice nucleation and reducing contact time before droplets run off the surface. Much of the experimentation relies on nanoscale texturing of glass and stainless steel surfaces. Poly(methyl methacrylate) (PMMA)—also known as acrylic and by such trade names as Plexiglas and Lucite—seems to be particularly promising for developing hydrophobic and icephobic properties.

Much of this research may find application first in aerospace and electric power industries, where the ice-affected equipment is smaller (think aircraft wings and electrical lines, for example) and less susceptible to mechanical wear than in public works facilities and vehicles. But with time and further work, new products may be developed. And even with global warming, it seems likely that icing will remain a problem.

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ETHICS FOR PUBLIC WORKS PROFESSIONALS
This course is designed for individuals who are interested in exploring both personal and professional ethics. This course provides practical advice on ethics and emphasizes the importance of ethical behavior in personal and professional interactions. It provides real-world examples, as well as advice in dealing with the non-technical aspects of our profession. CEUs: eligible for .2 CEUs upon completion.

ETHICS FOR PUBLIC WORKS SUPERVISORS
This course is designed for individuals who are interested in exploring ethics in supervision and management. Sometimes public works professionals are faced with difficult public policy choices that may stretch our ethical boundaries. Leading in the context of our own ethics is challenging enough, but leaders must also manage the ethics of others and discover how to create and maintain an ethical culture. Public works leaders must walk the talk, set the tone, hold themselves accountable, and strive to create a culture of openness, democracy, merit, and creativity. Only by exercising the principles of ethical leadership can we meet the challenges of the future and sustain the public’s trust in our decisions and stewardship of public resources. CEUs: eligible for .2 CEUs upon completion.

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What gets measured gets managed

There is an old saying that what gets measured gets managed, and it is probably very true. But, it is also true that most of us, upon hearing such old sayings, groan (at least internally or where nobody else can hear us) because that sounds like one more thing that is going to be put on an already overfull “to do” list. Oh Joy!

Having said that, it is very important to be able to measure a number of aspects of our winter maintenance operations, including things like how much salt we have used, how many hours of regular time and overtime have been accrued during the last storm, how many hours and/or miles have been put on equipment and so forth. We know that, but most folk in winter maintenance find themselves in the “swamp/alligator” situation—we know that we want to drain the swamp, but it is not so easy to do when you are surrounded by alligators...

One of the many pleasurable aspects of my job is to visit maintenance yards around the U.S. as part of the Salt Institute’s Safe and Sustainable Snowfighting Award Program. Just recently, I was visiting a facility in Michigan, and met one of the staff there (Amy, in case you were wondering) who has taken some very effective steps in the direction of swamp draining for her organization. Amy handled the time cards of all the plow operators already and had to enter information into the system from those cards. She decided that it would be useful to take some of that information (how much salt an operator had applied that day, how many hours of operation their equipment had seen that day, and how many hours of regular work and overtime hours they had used that day) into a spreadsheet so that she could rapidly see, among other things, how much salt had been used on a given day on a given route by a given operator, and how much had been used in total to fight a storm on any given day.

And that was where life got interesting. Because Amy did all of this quite openly and told the operators exactly what she was doing. She is not their supervisor, so there was no sense of “big brother” about the process. And the operators got into the whole process themselves, and started to compete (informally) to see who could get their routes clean most efficiently. In short, they all became participants in both the measuring and the managing of their salt usage, so ensuring that it became as efficient as possible, which by the way is a key step in Safe and Sustainable Snowfighting.

I do not want to imply that all the operators were immediately smitten with this approach. As Amy said, one or two
of the more heavy-handed operators needed “counseling” sessions to adjust their usage to more appropriate levels. However, much of that interaction occurred at an informal level between Amy and the operators themselves, thus avoiding any issues of disciplinary notices and the like. The bottom line has been that through the work of one employee, the commitment of other employees, and a spreadsheet, this agency has a much better handle on their salt usage than they ever have before and as a result they are operating much more efficiently.

Of course, it would be nice if all of this bookkeeping could be done automatically, with data being downloaded from the trucks without the need for any data entry. And that is indeed coming in due course. This is already available for some equipment that agencies are buying today. But one of the issues that all agencies face is that not all their equipment is of the same age. In fact, if an agency has 15 trucks, it likely got them in 15 different years, and getting all those bits of equipment to share data together is not simple. That is not to say it won’t happen, because it will, but what will you do in the meantime?

I would suggest that Amy’s approach is an extremely good one to follow—especially if you have an “Amy” in your organization who can get your operators on board with measuring and managing their own salt usage. We all know that our employees are the most valuable part of our organization. What Amy and her coworkers have done is to once again show this to be true!

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Finding leadership in the most unexpected places

Jim Proce, ICMA-CM, PWLF, MBA
Proce Municipal Management Services
Bowman Consulting Group
Member, APWA Leadership and Management Committee

Each year the Leadership and Management Committee, with a little help from our friends on the Knowledge Team, sets an agenda containing all sorts of lofty goals, targeted events, Click, Listen & Learn sessions, and a myriad of stories for the APWA Reporter. This team takes on all sorts of projects and topics near and dear to our leadership hearts. This labor of love is deep within each of these folks as we have all been bitten by that leadership bug, spreading the word, trying to convert all of you out there in APWA land to our cause. It’s not that we think you need converting, it’s just that we are so into this stuff sometimes we just can’t help ourselves.

My time with this group has been inspiring, as I mostly sit back and observe the magic as it unfolds before my eyes. Sometimes it’s like a symphony of ideas, when they are just tuning up and it’s pretty noisy, but all of a sudden something amazing comes out. And for those who know me well, you know I have my own opinions, paradigms, passions, and lots of energy, but much to everyone’s surprise, I am not in the constant “transmit” mode, which as you know, may be quite the different role for me. It is because I am most intrigued by this group and the dynamics in play, each and every time we meet, talk, get together or even just in the e-mails. Not only is there energy but there is an amazing synergy and it’s electric. I sometimes wonder what would happen if all of these folks actually worked for the same organization, the things they could accomplish would be amazing.

We challenge you to look for those opportunities to find those people who are living the leadership role in their lives and their actions every day.

Okay, well enough compliments for my teammates...but they all define awesome.

Well, each year we try to have a themed series of articles, and some of these really hit home, and some become a testament to the institution
and all of the dedicated public works professionals and the first responders and yes that is you! And some of these ideas should be cast on granite tablets for all eternity, because they are just that darn good! (Although I am pretty sure that nothing I have produced is that good.)

So, when we got together this past year, I was excited to see where we would be going in the upcoming year, because I know it’s going to be good once everyone tunes up. The group is pretty compulsive about raising the bar; I can’t image how many ceilings they have shattered.

Well, as a committee, we were looking at the opportunity to launch a new series of articles that the team would be focused on producing, hoping to further expand the leadership message. We are soliciting input from each member of the committee, the Knowledge Team, and even you, if you have a great story line that fits the same sheet of music.

So what is it?

Leading from the Frontlines…

The idea is that we would discuss things like… finding leadership in those unlikely places, perhaps where you least expect it, or in a different context than the typical, on the frontlines, where those daily “battles” are fought, talking to citizens, dealing with complex problems or maybe not so complex, but still very important.

In some cases, it may be right there in front of your face and you may even take it for granted. We will challenge you and each other to look for those opportunities and to share those stories and to find those people who may be non-traditional roles but are living the leadership role in their lives and their actions each and every day.

You know these folks and we further challenge you to recognize them, in your departments, in your organizations, and in your communities. Embracing and recognizing those leadership behaviors will create positive epidemics in your organizations, and with so many of us headed toward the downslope of our public works leadership careers, we need to find these folks and encourage them to step up and be that next generation of leaders.

So, what’s next?

Well, we will likely expand upon the theme, tell some more stories, explore the characteristics of leadership on the frontlines, show you where to find it, discuss how to foster it, but most of all, we just want to get you talking about it, so you can recognize it, and encourage it, and reward it, and foster it in your organizations and create the movement, because leadership is not just for managers, the boss, the president of the company, or the mayor and city council. It is and can be found anywhere: that guy who works on the shop floor, does an inspection, drives the snowplow after the bad storm, someone who is always there to lend that helping hand. You know who he or she is, it may even be you.

So, here’s your homework assignment.

Look around your workplace, do it today!

Identify one leadership behavior in your organization on the frontlines and recognize that person and let them know you saw that behavior and you appreciate what they do and why. Then let us know about it too, because we really do love that stuff and we want everyone tuned up, listening closely and hitting those high notes in their organizations.

I am looking forward to hearing your stories. Until next month...

Read, learn, do, share!

Jim Proce, recently retired Assistant City Manager and longtime Public Works Director, is a 2016 Top Ten Public Works Leader of the Year, a member of the Leadership and Management Committee, and serves the North Central Texas Branch in Dallas, Texas. He can be reached at jimproce@gmail.com or followed on twitter at @jimproce.
In August 2017, I gave a talk at the Institute of Public Works Engineering Australasia (IPWEA) conference and met with professionals around Australia as a Jennings Randolph International Fellow, an award that supports conference attendance and a public works study tour overseas.

I presented my workplace, the City of Los Angeles, Bureau of Engineering, as a case study on how to adapt to a changing workforce. Engineering made it a priority for the entire organization to rebrand together to reflect a more open, collaborative, and innovative culture.

The conference theme “Taking Flight for the Future: Head West for New Frontiers” resonated with me. I proposed a study tour to build on the research of past fellows to further answer the question, “How do we successfully foster innovation and creativity in public works with limited resources?” Public works innovation is a popular subject in America. However, resource allocation can be a challenge as innovation initiatives can compete with existing project delivery priorities.

For the study tour, I visited different-sized public works organizations, compared innovation tools, interviewed staff, and toured unique projects. Australia faces challenges similar to the United States in managing a changing workforce and attracting diverse talent while carrying the same pressure to innovate. In addition, many organizations were experiencing organizational restructure. Like the City of Los Angeles, the cities I visited also made a commitment to gender and racial equity.

Below are some takeaways and personal insights on how innovation can be fostered in an organization.

1. Tell Your Staff, “It’s OK to Be Yourself”

I’ll start with a personal reflection.

It was intimidating to travel alone and I was anxious about how to share a unique and valuable perspective to an international audience. I had to dig
beyond public service to find uniqueness—into my interests, my hobbies and my point of view as a female Asian American Angeleno “older millennial” municipal civil engineer.

Like many professionals, I prefer to maintain a conservative image at work and separate who I am during and off work hours. However, putting myself out there allowed me to ask better questions, which helped others feel comfortable to share and communicate more easily. The more vulnerable I was to share my ideas, the more I received in the exchange.

To experience authentic exchange, try to break the ice and encourage staff not to be afraid to stand out.

2. Invite Someone Along for the Journey
How do you coach innovation when the product or process has not been done before?

I was inspired by a young engineer who was not only critically involved “cradle to grave” in the delivery of innovation, but also taught the process to others. Vimal Vinodan, a street infrastructure engineer, and Anthony Ogle, manager of Asset Systems from the City of Ryde, co-wrote and presented the conference paper, “Smart Street Lighting, Smart City, Smart Standards.” The paper is a successful case study and innovation road map detailing how to overcome barriers and implement smart street lighting to enable cities to be successful leaders of smart cities. Check out their paper here: https://www.ipwea.org/newzealand/viewdocument/smart-street-lighting-smart-city.

Vimal was invited by a senior manager to take part in an innovation journey and learn along the way, whether in success or in failure. Consider experiential coaching as a way to teach the innovation process.

3. Support an Intrapreneur and Engage a Mid-Career Professional
During my public works visits, I met many Intrapreneurs, a term that describes internal entrepreneurs.
Engineers Ari Triskelidis and Kanchana Withana could not find a passive street tree irrigation solution that suited their needs for a simple design that was low maintenance, cost effective, and improved the drought tolerance of street trees in the landscape median. Ari introduced me to their partnership and prototyping process to develop the Monash Kerb Inlet pilot project for passive irrigation. The engineers conducted research, partnered with Monash University, prototyped an inlet design, and worked with industry to fabricate the design. Read about their fascinating journey here: https://www.ipwea.org/blogs/intouch/2016/10/25/innovating-passive-irrigation-with-the-monash-kerb-inlet.

It takes experience and grit to carry through a new process, and mid-career employees can be a good target group. To help with management fatigue, engage mid-career engineers the way you engage new employees. Commit resources to support a motivated team that takes the initiative to propose a solution to outperform the status quo. Encourage the team to share lessons learned with your organization and invite them to submit a conference paper to share with industry.

4. Design the Result
The focus that innovation is a product of technology solutions squeezes most public sector’s already scarce programming resources. The Data and Information Unit at City of Perth, which is similar to a tech arm, showed me an unexpected approach. The manager, David di Lollo, emphasized that when approached with a solution and requested to build a new product, his group first asks, “What is the problem you are trying to solve?” Instead of focusing on the technology, their focus is first on collaboration as an approach to problem solving.

Another example was at the City of Lismore where staff rethought the process of public outreach and engagement which is typically a challenge for the success of public works projects. When we think of public outreach, we think of marketing materials and spending resources planning and setting up public meetings where few people may show up or actively participate. Designers at the City of Lismore took their designs to the streets with coffee carts and offered the public free coffee and an opportunity to give feedback on the designs. This approach improved the public’s perception of the project outreach and increased participation.
Before committing major resources to develop an app or carry out public outreach, consider the different ways you can achieve the same result.

5. Think about the Different Ways to Think Differently

Gender and racial diversity are valued and widely talked about in Los Angeles. While diversity and innovation are linked, the definition of diversity communicated is often unclear. I was intrigued by the IPWEA conference best overall paper called “Diversity Powers Innovation.” The author, Priyani de Silva-Currie, explored benefits to paying attention and looking for each type of “diversity.” One of the main links to having a more innovative organization is diversity of “thought,” which is driven by diverse experience and not just gender and race. Check out the paper here: http://aomevents.com/media/files/IPWC%202017/papers/de-silva-currie-priyani.pdf.

Through the study tour, I learned alternative ways to develop thought diversity. Human Resources at the City of Perth introduced me to a secondment, a temporary work exchange to replace staff on temporary leave while helping existing staff build new skills and experiences.

In Lismore City Council, Gary Murphy, the Executive Director of Infrastructure Services, taught me about the importance of “giving permission” and showed me that you can balance staff strengths and interests while diversifying experience by giving a chance to apply expertise to a different role. Kevin, a Commercial Services Business Manager at the time, got the opportunity to lead the development of the Recycling and Recovery Center. Although this was not a typical role for him, he used his background to find multiple revenue streams and uses for the recycling center. Not only does this recycling system crush about 6,000 tonnes of discarded glass every year for reuse in projects and diverting it from landfill, the center is also a wildlife preserve, provides locals with small business opportunities, and teaches visitors about sustainability.

**Employees must feel comfortable being themselves and supported in sharing their point of view at work. Given permission to innovate, you will be pleasantly surprised what may be possible.**

6. Coach Self-Awareness and Draw out Innovative Ideas

Recognizing different leadership approaches and communication styles is important to identify and draw out innovative behavior.

On my study tour, I met Vicki Shelton, Greater Geelong’s Manager of Engineering Services, who won the IPWEA Public Works Leadership Medal this year, and Margie McKay, who runs the City Design Studio at the City of Melbourne and is responsible for projects shaping one of the most creative cities in the world. At the City of Perth, I had the privilege of meeting with managers of each function who had a mix of private, public and international experience and who were age, gender and racially diverse. Because of organizational change, each manager had honed their own way to manage change and inspire innovation.

I learned about different leadership approaches such as a collaborative approach and noticed common core qualities among these leaders such as strong self-awareness and enjoyment in helping others develop. Even for me, someone who is generally soft-spoken and stereotypically Type B, I have been lucky to have a supervisor and facilitators who can recognize my communication style and challenge me to share my recommendations, which has increased my contribution tremendously.

Here is the main takeaway—as a first step to fostering innovation, employees must feel comfortable being themselves and supported in sharing their point of view at work. Given permission to innovate, you will be pleasantly surprised what may be possible.

I am thankful for the opportunity to participate in this fellowship. I deepened my connection to APWA and experienced its global influence. This article covers only a fraction of lessons learned and I look forward to sharing more personal examples from Australia with you at this year’s Public Works Expo in Kansas City.

**Acknowledgements**

Thank you to IPWEA Executive Officer and my fellowship liaison Ross Moody and to the International Affairs Committee for this opportunity. Thank you to my gracious hosts at the City of Perth, City of Lismore, Monash City, City of Melbourne, City of Greater Geelong, City of Glenorchy, City of Hobart, Brighton Council, and Kingborough Council for their time investment and mentorship. Thank you to Los Angeles City Engineer Gary Lee Moore and Chief Deputy City Engineer Deborah Weintraub for their support.

You can reach me on LinkedIn at www.linkedin.com/in/joanne-zhang-jz-a564668/.
The Jennings Randolph International Fellowship Program is a unique international study and professional exchange opportunity that promotes collaboration and sharing of public works best practices, knowledge, and innovation, both internationally and with public works colleagues in North America. The Jennings Randolph International Fellowship Program was established by APWA in 1987 at the Eisenhower World Affairs Institute, now affiliated with Gettysburg College, and is administered by APWA through the International Affairs Committee. The Fellowship is named after former West Virginia Representative and Senator Jennings Randolph, known as the “Dean of Public Works Legislators,” who served as the Chair of the Senate Environment and Public Works Committee from 1966 through 1981. Senator Randolph stated, “Public works is a powerful instrument for understanding and peace.”

Through the Jennings Randolph International Fellowship Program, APWA strives to further these international principles:

- To provide an opportunity to broaden knowledge and exchange experiences and information on trends and advances in public works through contact with our international partners
- To promote friendship and understanding among public works staff on an international basis
- To provide a venue for the exchange of information between APWA and our international partnering countries including Australia, Czech Republic, Denmark, Finland, Iceland, Mexico, New Zealand, Norway, Slovak Republic, and Sweden

Jennifer Perry, P.E.
Public Works Director
Town of Exeter, New Hampshire
Member, APWA International Affairs Committee

2018 Jennings Randolph International Fellows announced
The 2018 Jennings Randolph International Fellows are:

Helena Sullivan,
Construction Engineer for the McHenry County Division of Transportation in Illinois, will use the fellowship award to attend the Swedish Public Works Association Conference in September 2018 in Uppsala, Sweden. She will research how Uppsala and its surrounding regions, with a climate and road network similar to rural McHenry County, maintains their inventory of bridges. Her study will include how bridge programs and projects are funded in Sweden, and how aging infrastructure is prioritized for repair or replacement. She will meet with the Swedish Transport Administration (Trafikverket), engineering firms and contractors, and her study includes site visits at recently completed bridge projects and bridges under construction.

Ms. Sullivan’s goals for this study tour, in addition to the presentation and attendance at the SPWA Conference, are to learn about new materials and construction methods being used in Swedish bridge repair and replacement projects that could be shared and used in Illinois and elsewhere.

Ms. Sullivan is a mechanical and civil engineer with a background in facilities, roadway and bridge design and construction. In her current position as a construction engineer

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### Inaugural 2018 International Excellence Awards in Municipal Engineering

**Nominations invited**

Doug Drever, President of the International Federation of Municipal Engineering (IFME), is inviting nominations for the inaugural IFME Excellence Awards in Municipal Engineering. Doug is a past APWA Region IX Director.

The Awards will be presented at the 19th Triennial World Congress on Municipal Engineering which is being held in association with APWA’s Public Works Expo in Kansas City from 26-29 August 2018.

Municipal engineering provides the infrastructure and services that support the way of life of a local or regional community. A key objective of the International Federation is to foster technical and cultural exchange between municipal and public works engineers worldwide.

International exchange of information, innovations, skills and experience is critical in today’s global world. The IFME Excellence Awards are designed to honour excellence in the field of international municipal engineering in two categories:

1. **International Municipal Engineering Leadership**
2. **International Project of the Year**

IFME is inviting submissions to recognise individuals and organizations for their outstanding contribution and success in international municipal engineering.

Submissions should address the Award Criteria and be made in accordance with the Award Guidelines available at www.IFMEworld.org/awards2018.

All inquiries and submissions should be made to the Secretary General, International Federation of Municipal Engineering, e-mail: sec-gen@ifmeworld.org. Closing Date for Submissions to be received is May 7, 2018 (midnight GMT).
with the McHenry County Division of Transportation, she leads a team of field engineers, provides field inspections for large roadway improvements, and she assists contractors with design interpretation and resolution. She has also worked as a resident engineer for the Illinois Department of Transportation, project manager for the California Department of Transportation, and she taught high school pre-engineering mathematics and AutoCAD coursework. In her spare time, she tutors high school students in math and science to encourage those who struggle and need to build confidence. She was born in Sweden and speaks Swedish, and by participating in this fellowship, she anticipates adding to her technical and bridge vocabulary.

Jason Waldron, P.E., Streetcar Program Manager for the City of Kansas City, Missouri, will conduct a public works study tour in Australia and use the fellowship award to attend the Institute of Public Works Engineering Australasia (IPWEA) – New Zealand Annual Conference in Rotorua, New Zealand, in June 2018. Mr. Waldron will study approaches to the implementation of modern streetcar systems within the public right-of-way and the development of smart city policies in Kansas City, Missouri; Auckland, New Zealand; and Sydney, New South Wales, Australia. This comparison will identify best practices and result in shared lessons learned for streetcar programs and what it means to be a smart city.

Cities across the world are turning to emerging and re-emerging technologies to provide livable cities to attract young professional talent and encourage economic development and innovation. Mr. Waldron’s goals are to establish a peer-to-peer network between Kansas City and Sydney with the results providing guidance to other APWA and IPWEA communities developing similar programs and policies. All will benefit from answers to the question, “How did they do it?”

Mr. Waldron is a civil engineer who has expertise in transportation. He started on the Kansas City streetcar program as a design consultant and led the award-winning project through to completion, now as program leader in the Kansas City Public Works Department. He has also been engaged in leadership development programs within Kansas City and involved with the Kansas City Neighborhood Advisory Council, the Bicycle and Pedestrian Committee, the Legislative Committee for the American Society of Engineers, and the Transportation Committee of APWA. He is on the Board of Directors for the Kansas City Engineers Club.

In addition to their studies abroad and presentations at public works conferences for partner countries, both Mr. Waldron and Ms. Sullivan will share their experiences through presentations to local and regional organizations, at APWA’s PWX, and in future APWA publications.

For more information about the Jennings Randolph International Fellowship program, contact Lillie Yvette Salinas, APWA Marketing & Outreach Manager, at lsalinas@apwa.net or (816) 595-5253.

Jennifer Perry can be reached at jperry@exeternh.gov or (603) 773-6157.
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P.B.A601 (Medium) 
P.B.A602 (Large) 
P.B.A603 (X-Large) 
P.B.A604 (XX-Large) 
P.B.A605 (XXX-Large) 

APWA T-shirt 
P.B.A811 (Small) 
P.B.A417 (Medium) 
P.B.A304 (Large) 
P.B.A306 (XX-Large) 
P.B.A307 (XXX-Large) 

Property of APWA Public Works T-Shirt 
P.B.A1308 (Medium) 
P.B.A1311 (XX-Large) 
P.B.A1312 (XXX-Large) 

T-SHIRT PRICING BY SIZE  
S, M, L, XL Member $15 /Non $20 
XX-Large Member $17 /Non $22 
XXX-Large Member $18 /Non $23 

APWA Car Sticker 
Clear cling sticker with white APWA logo. (Shown here on a navy background for purpose of display) 
P.B.A851 
Member $.50 /Non $1 
P.B.A852 (Package of 12) 
Member $5 /Non $10 

"I ❤ Public Works" Bumper Sticker 
P.B.A320 
Member $1.50 /Non $2.50 

APWA Notecards 
P.B.A756 
Member $8 /Non $13 

APWA Padfolio 
P.B.A1300 
Member $12 /Non $17 

Acrylic Tumbler (16oz) 
P.B.A1112 
Member $9 /Non $14 

APWA Bistro Ceramic Mug (16oz) 
P.B.A1700 
Member $9 /Non $14 

APWA Paper Coffee Cup 
(Package of 50) 
P.B.A806 
Member $15 /Non $20 
With Plastic Lid: P.B.A807 
Member $20 /Non $30 

APWA Stainless Steel Tumbler 
P.B.A1702 
Member $10 /Non $15 

APWA EcoCore Golf Balls 
P.B.A314 (One dozen) 
Member $18 /Non $23 
Not sold separately. 

APWA Sports Bag 
P.B.A303 
Member $25 /Non $35 

APWA Lunch Cooler 
P.B.A1701 
Member $8 /Non $13 

APWA Lapel Pin 
APPINS 
Member $6 /Non $8 

CPWA Lapel Pin 
CPAPINS 
Member $6 /Non $8 

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Where do new managers start when they’ve just been handed the keys to their municipality’s solid waste program? Like many of their peers who have come before them, they might have little to no experience in the field. (If you are wondering why that is, well, let’s be honest—it’s trash!)

Trash is not as flashy as electric, water or parks. However, it is arguably the most important function of a city. Solid waste collection is something all municipalities are mandated to perform whether it is done internally or by a private company. It is also, perhaps, one of the oldest professions simply because of human nature. Throughout

For a new solid waste manager, be true to yourself

Chris Knight
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Member, APWA Solid Waste Management Committee
history, people have created and discarded items they no longer wanted. Many people think the profession is unattractive or uninteresting. Upper management often selects someone from a different field for the job. Nevertheless, this job is as exciting and fascinating as any job can be. The industry changes on a daily basis and the challenge of orchestrating the collection of a city’s solid waste takes a manager with a great deal of organizational and leadership skills. Just like an artist, the manager must have vision, too.

New solid waste managers will probably do a lot of research to learn more about the profession. They might even reach out to other solid waste managers across their states. They will discover many different terms such as these: names of solid waste customer types, residential solid waste stream, total municipal solid waste generation, recyclables, yard waste, bulky waste, household hazardous waste, participation rates, and set-out weights.

Leadership has nothing to do with image. Leadership is about being clear and committed to a team and to yourself.

All this technical information is easy to find online or in books. Remember, the collection of solid waste has been around in some form forever. There’s no need to recreate the wheel. New managers will need to determine the best methods for their cities because what works for one community might not work for another.

In all that research of the profession, however, one topic they won’t find is how to be a leader and how important leadership is to being a successful manager of any kind of department.

What is the picture of an ideal leader? Do they dress, look and act a certain way? Does he or she have an impressive title or educational background? Everyone has his or her own ideas about what it takes to be a leader. Though they might not identify with them personally, they might think they need to act more like that person to be a strong leader. It can be tempting to try to become that person instead of becoming your own type of leader.

Leadership has nothing to do with image. Leadership is about being clear and committed to a team and to yourself.

It’s normal for people in positions of responsibility to feel overwhelmed once in a while, especially when they’re starting out. But leaders should not operate under the assumption that they have to be someone else to be effective. Employees can sense when their supervisors are genuine with them and when they are not. Being fake doesn’t instill trust and confidence. Neither does avoiding situations that make one uncomfortable—it’s all part of the job.

New managers might feel they are not qualified for the role, but they should remember this—someone thought enough of them to place them in the role. Situations will arise where they are not sure how to handle them, and that is all right. They might feel there are skills they still need to develop, but who doesn’t feel this way from time to time in any role?

For a new solid waste manager, the bottom line is this: Be true to yourself. Understand that you are not going to know everything, and don’t let on as if you do. Be confident in making decisions. At the end of the day, the employees you lead will respect you all the more for it.

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n my March 2017 article on this topic, I wrote about the need to begin conversations about the methods we use to track diversion rates for recycling/waste diversion programs. The common mindset is that you cannot manage what you do not measure. The good news is that in 2017 a number of discussions occurred across the country at meetings, symposiums, summits, and conferences. From the Pacific Northwest to the Southeast, recycling professionals gathered to ask the question: “If local programs want to move beyond weigh-based recycling rates, what single metric should be used instead?”1 Unfortunately, we have not yet adequately answered the question.

As was discussed in the past, solid waste/recycling professionals are tied to measuring and tracking recovered tons to report the status of waste diversion programs. This metric, for the most part, has been a solid, simple, and easy-to-understand tool when presenting information to the public and elected leaders. One of the main issues over the past decade is the fact that many recycling streams have been moving away from paper/fiber towards lighter items such as plastic bottles. Another significant issue is the lightening of the collected materials. Aluminum cans and plastic containers weigh less today than they did a decade ago. As a result, programs need to collect more materials to maintain the same weight, meaning many locales face declining recycling tonnage as a percentage of the total waste stream. This decline impacts diversion rates.

Another major development over the past decade is the number of collection programs moving to single stream. This transition from asking customers to separate certain materials to placing all recyclable materials into one bin or container helps increase local diversion rates in the short term. However, as this strategy matured, we find ourselves facing the same static or declining diversion rates. This scenario will probably continue unless we identify a way to describe our collection efforts in a manner that supports our work plus allows us to escape the “diminishing ton.”

The EPA is supporting the use of sustainable materials management (SMM), which allows recycling professionals to consider complete material life cycles when designing programs and policy. The system incorporates metrics normally associated with sustainable practices to reflect the positive benefits resulting from recycling. This includes benefits to the environment (climate change) and environmental justice (residential communities within close proximity to landfills, transfer stations, or waste-to-energy plants). The difficulty is to translate what might be seen as “wonky” concepts into a simple message the public and elected leaders can understand. In today’s fast-paced deluge of information emanating from smartphones and tablets, it is critical to have a simple, easy-to-understand statement of progress or setback for stakeholders to consume. Another key issue relating to SMM is the ability of local governments to benchmark the new metrics, many of which are struggling to collect,
As reported in a *Resource Recycling* article, “Heavy Lifting,” the Oregon DEQ is exploring a metric related to “impacts.” They created a tool, in the form of a calculator, Impacts of Material Flows in Oregon (IMFO), to project outcomes of material management strategies. This is an interesting concept to consider. For example, aluminum is found in beverage cans, screen doors, food and pharmaceutical packaging, and reusable beverage containers (thermos and water bottles). Each of these items has a unique production impact with vastly different life-cycle and collection consequences. As a result of these differences, program managers could report the impacts of the products currently in use rather than wait for the items to enter the waste-economy stream.

The article also offers a weight-based metric for program managers needing a quantitative value. “Mass circularity” is represented by the amount of material recycled divided by the total demand for that particular material in that specific jurisdiction. Once again, this concept attempts to change the tracking and data paradigm with the unintended consequence of opaque metrics and the need for in-depth research of manufacturing and other difficult-to-quantify concepts.

One suggestion I would offer is derived from the social marketing work of Doug McKenzie-Mohr. One of his basic tenets is scalability: start with pilot projects; learn from pilots through data collection and outcomes; and then modify or move forward with full rollout of a program. Perhaps we could begin the paradigm shift with a few simple data points that we collect and report as a pilot phase in this process. The basics, as suggested in an article “Seeing the Peak,” could be the following:

- The number of households served by the curbside solid waste collection program
- The number of households served by the curbside recycling/waste diversion collection program
- Annual household tons collected in the curbside solid waste collection program
- Annual household tons collected in the curbside recycling/waste diversion collection program

These basic numbers could provide solid waste/recycling professionals with simple and easy-to-report metrics such as *trash tons per household* and *recycling tons per household*. If diverting waste from landfills is the ultimate goal, perhaps knowing if programs are collecting less trash could help relate results to stakeholders. This initial step may assist in moving past the challenge of reporting an overall diversion rate. The use of easy-to-understand metrics in a pilot phase may help us transition, over time, to more complex SMM-based metrics. The keys for initial success are to collect readily available data, present the data in an easy-to-understand format, and use a measurement process which will best express program results.

If you have any questions, comments, or thoughts about this topic please contact the Solid Waste Management Technical Committee through APWA Connect: Technical Committees & Subcommittees Group.

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**Resources and References**


Reuse: Options for engaging, citywide initiatives

Charlotte Davis
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Member, APWA Solid Waste Management Committee

All too often, we in the solid waste management field do not have the luxury of working outside the area of residuals management and are busy managing the “end of life” of materials.

One of the great things about city-led reuse initiatives is that they give us the opportunity to play a role in a circular system that has multiple positive outcomes, to name a few; diverting waste from landfill, reducing illegal dumping, and redistributing items to those that need them.

Even though there are many websites and apps that focus on used goods there is still a whole trove of items out there looking for new homes and there are lots of people who love to hunt for bargains. We currently host two different types of reuse events: a trunk sale and a citywide swap meet.

Trunk Sale
A “car boot sale” is a very common event in my native England; it involves vendors meeting at a central location and selling used items from the trunk of their car. Despite the fact that they are popular events at home, I was not sure how it would go down in Canada. However, I was spurred along when I met with some staff at the Regional District of Central Okanagan in BC who also hold this type of event to much community hype each year.

Last year was our inaugural event and was purposely kept relatively small. The event was held in the parking lot of the Curling club. One hundred vendor spots were advertised and I was relieved when they were snapped up in a period of two weeks.

When event day came, the variety of vendors was quite impressive. We had
many people who perhaps did not have enough wares to necessitate a garage sale but for whom our venue was perfect; similarly, residents of apartment buildings were also drawn to the event. Then came the upcycling! I was amazed at how many beautiful goods were made from used items; to name a few, we had shopping bags handwoven from old grocery bags, upcycled china tea services, and upcycled clothing (bags made from jeans and children’s clothes made from old sweaters).

Feedback on the event was overwhelmingly positive—every one of our vendors asked us to host another event this year and we were asked to expand it by offering more spots. Bargain hunters asked for more amenities—they wanted somewhere they could grab a coffee and a doughnut from while browsing!

Here are some top tips for running your own trunk sale:

- Keep it free or almost free. We don’t charge our vendors though many have said they would be willing to pay $10-$20 for their spot.
- Restrict what can be sold to only used items or upcycled items.
- Use it as an opportunity to promote other initiatives; you have a captive audience so make the most of them.
- Advertise heavily in advance using multiple media. We used online, newsprint and radio advertising. Next year we plan to include a reminder of the event in our annual collection calendar. Social media was a great way to gauge the public’s interest in the event; we created a special Facebook event for the trunk sale and encouraged residents to sign up and share the event. We also had the radio station conduct a live broadcast on location during the event.
- Invite some local charities along to the end of the event to clean up any unsold items. Most vendors will not want to take their unsold items back home, so to avoid any illegal dumping and to keep the reuse trend going it is a great idea to have charities come and accept any remaining unsold items.
- Plan for the basic necessities: wash rooms, coffee facilities, and a hard surface to keep mud at bay.
- Be prepared to help vendors park; to keep the area organised you will need parking attendants.

This year the event will be back by popular demand, only bigger and better than before. We plan to double the capacity for vendors and invite a few food trucks along. I also plan to invite a few more charitable organisations in order to “share the wealth” a bit more.

The only thing that could have been better about our event was the weather. We had been enjoying an Indian summer and hadn’t seen much rain at all in the previous three months, but the heavens opened a half hour into our event and it stopped raining fifteen minutes before wrap up! I’m chalking that one up to Murphy’s Law. Despite the rain, spirits were not dampened and the “Nanaimo Recycles Trunk Sale” was a success.

Citywide Swap Meet

Reuse Rendezvous is our Citywide Swap Meet held every year on the same weekend in spring. The City has been “hosting” and promoting this event for over fifteen years. Each year the popularity of the event depends greatly on the weather.

The event is run at almost no cost to the City apart from some small advertising costs. During the swap weekend residents are encouraged to mark items with a free sign and place them on the edge of their property. Bargain hunters are asked to drive slowly around neighborhoods and respectfully collect anything that they wish to take. The event spans the entire weekend and homeowners are asked to take in any uncollected items after the weekend.

In previous years, City staff used City vehicles to collect leftover items after the weekend; however, this proved to be quite costly and it was felt that some residents took advantage of this opportunity to “spring clean” their home by placing out items that were not reusable, so the practice was stopped.

In summing up

The two reuse events offer great opportunities to engage the community in the topic of reuse. While the trunk sale takes considerably more time to plan and host, it comes with the added bonus of giving you a captive audience to which you can promote your other recycling messages. The swap meet event is very much a hands-off event; yet, in years of good weather, it can be a really great event. My feeling is that the events complement each other and provide our residents with a good City-led reuse program.

In looking to expand our repertoire of reuse events, the next step would be to look into hosting and/or sponsoring a suite of repair workshops where residents are taught the skills that will allow them to breathe life back into damaged household items. It would be possible to host these through our parks and rec activity guide and it could make for a great collaborative project.

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Looking at the personnel around your agency, what do you see? The average retirement age in the United States is about 63, so how many staff members will be retiring in the next 2-5 years? In addition, median tenure of public sector workers was 7.7 years in January 2016, the most recent Bureau of Labor Statistics Employee Tenure Summary. How many will be moving on from your organization?

Human capital is your agency’s greatest asset and having a plan for smooth transitions when employees resign or retire is essential. You can no longer rely on recruiting qualified operators, technicians, supervisors or managers easily in today’s job market. Succession development and planning isn’t a new concept, but for many of us in the public sector it is often neglected.

A good way to start is to engage your staff in a collaborative succession development effort. Identify the human resources needed to maintain your service. Which positions are crucial and dependent on a skill set that is not easy to acquire and, out of these positions, what is the expected

What is your human capital plan?

Monica Bramble
Assistant Public Works Director
City of North Port, Florida
Member, APWA Solid Waste Management Committee

Solid Waste Manager Frank Lama and Superintendent Jasper Moreland assess the budget.
turnover? Once you have identified key positions to include in your plan, prioritize the knowledge, skills, abilities, and personal attributes needed to be successful in the position.

With the key positions and competencies prioritized, assess your staff’s strengths. Who are the star performers that either already have the required competencies or, with some development, can acquire them? Look beyond the second in command to others in the department who display potential, regardless of where they fit on the organizational chart. Your analysis will show where your gaps in human capital are and the magnitude of the shortfalls.

From here you can put together a system of continual development. Approaches vary, so you can select those that best fill the gaps in each potential successor’s learning. Some examples include:

- Mentoring
- Special projects
- Leadership Academies
- Job shadowing
- Acting roles when incumbent is out of the office
- Attending conferences with seasoned staff
- APWA Public Works Institutes
- Certification
- Utilizing retirees short term to transfer institutional knowledge
- Tuition reimbursement for more formalized education

Use your analysis and selective approaches to design individual development plans with prospective successors. Establish measurable goals with specific timelines and, as the plan gets implemented, intersperse learning with continual feedback. Adjustments may be needed as the employee learns more of the responsibilities and understands how their competencies match up. For those positions in which the gaps cannot be filled internally, a recruitment plan will need to be put in place.

No plan will work if it just sits on a shelf. Succession development is a continual process that needs to be evaluated on an ongoing basis and adjusted in order to ensure its success.

While your succession development is designed to identify and cultivate future leaders, the process also builds employee commitment and helps employees realize their potential. People want to have an impact, and this continual process lets your staff know that they are valued and have a future in the organization.

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Yesterday about 175 people died in the United States from an overdose of prescription opioid drugs. Tomorrow we will lose 175 more, and every other day of the year, on average. Among people 25-65 years old, drug overdose caused more deaths last year than motor vehicle traffic crashes. Opioid addiction has been declared a Public Health Crisis by the U.S. Dept. of Health and Human Services. According to the U.S. government, more than 50,000 Americans died of overdoses in 2015, and the number rose to a startling 64,000.
in 2016. But where do all these drugs come from?

Ninety-two million Americans, or 38% of the entire population, received prescriptions last year for opioids like Vicodin, Methadone, Fentanyl and other potent pain-relieving medications. More than a third of the medications are never taken for their intended use. Unsure of how to dispose of them, consumers let them linger in drawers and medicine cabinets. Children and the elderly are suffering accidental overdoses in startling numbers.

Seventy percent of people who misuse painkillers report getting the drugs from a friend or a relative. Some of the drugs find their way into the wrong hands and end up on the black market, contributing to local crime problems.

In addition to the concerns about proliferation of drugs, many areas worry about the impact on local water supplies. In the absence of safe and convenient alternatives, consumers often flush leftover medications, leading to toxic effects on aquatic organisms and human health.

Similar concerns arise with needles. Whether used to inject medications for diabetes, hepatitis or other illnesses, or for less sanctioned purposes, disposal of needles and other medical sharps is a problem in every American city and county. As with medications, easy and safe disposal options are scarce. Residents throw them in the trash, drop them in the recycling bin or flush them down the toilet. Used needles litter the ground of parks and beaches. Workers on recycling sorting lines are getting dangerous needle sticks, interrupting operations and requiring expensive treatment. Needles show up in the filters of wastewater treatment plants. Public health and safety is at risk.

For all of these reasons, local and state governments have been taking action, developing innovative new approaches to getting these drugs off their streets and out of their water supplies. California’s Alameda County was the first to pass a local ordinance requiring pharmaceutical companies to establish and pay for a local drug collection program. They were challenged all the way to the U.S. Supreme Court, but prevailed at every step.

“We felt we had to take action,” said Alameda County Supervisor Nate Miley. “Safe and convenient medical disposal programs are one of the most effective solutions in preventing negative individual and environmental health impacts.”

Alameda County’s victory prompted others to follow suit. Now a number...
Pharmacist Janet Dumonchelle is thrilled with the new meds bin at Sacramento State.

of counties in California, several in Washington State, and others scattered across the country have similar programs. Massachusetts was the first to take a statewide approach, and New York is currently debating a similar step.

The various programs take slightly different approaches. Among the most comprehensive is one in Santa Cruz County, California. Building on a successful voluntary program operating since 2006, the County Board of Supervisors took the unusual steps of requiring all pharmacies to participate, and of including medical sharps as well as drugs. The results are impressive. Thousands of pounds of used needles and leftover medicines are routinely returned to the pharmacies for proper disposal. Private licensed carriers collect the material and send it on for disposal in facilities with specialized permits. It’s easy, and convenient, and best of all for the county, the pharmaceutical industry pays for it all. Local governments in California and across the country are taking notice.

“Producer responsibility is the only approach that provides a sustainable funding source for a program that can be national, have a harmonized public education message, make it free to dispose and as convenient to collect meds as it was to buy them, and use the best available technologies of the day for safe disposal for a small or large quantity of medications,” Sanborn said. “There is no other private sector or public sector program that can achieve all those goals.”

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Consortion Inspection 201 is designed for individuals who are interested in building their skillset in project management — as it applies to work performed in the construction inspection profession. This program provides general guidelines for the various areas needed to maintain professionalism and competence. The program includes an array of information for the student, including: communication, contractor relations, plans and specifications, construction meetings, progress meetings, scheduling, documentation, negotiations and project close out.

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- Roles and Responsibilities on Major Projects
- Supervising Others
- Scheduling and the Project
- The Right Software
- Critical Path Method Scheduling
- Negotiations
- A Typical Project
- Project Initiation/Bid Process
- Pre-construction Preparation: Plans and Specifications
- Pre-construction Preparation: Project Coordination
- Pre-construction Meeting: Attendees and Agenda
- Pre-construction Meeting: Processes and Procedures
- Conducting Progress Meetings
- Project Close-Out
- Close-Out Procedures
- Project Close-Out: Punch List Procedures

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For more information go to: www.apwa.net/elearning
On December 9, 2011, the Lowndes County Board of Commissioners voted to enter into an exclusive contract with a private company to manage their sanitation obligations to its citizenry due to shortcomings in their budget and previous failed attempts to sustain services successfully. The spirit of privatizing their sanitation was well meant; however, the timing of the implementation brought nightmares and unprecedented customer service challenges. The timing of the implementation precluded being prepared to enforce an exclusive contract, ensuring all county residents received a rollout container, and dealing with quality control issues. After two years of consistent complaints about the sanitation service and massive illegal dumping, the cleanliness of our community has dramatically improved and the citizens are happy with the service. This process taught me many valuable lessons as a newly elected county commissioner and later public works superintendent for the City of Valdosta.

First and foremost, it is important to understand that it is the responsibility of the county to provide sanitation service for our residents. We are required to do so by state law. The bid...
was let out several weeks prior to allow for any company willing to take on the responsibility of maintaining the county’s sanitation service. As a term to guarantee the lowest possible price for the taxpayers, the county agreed to an exclusive contract with a sanitation company. To an average business-minded person, this would logically make sense. But, the repercussions of the decision as a public agency proved to be a regrettable calculation. This is because a small business local sanitation service provider was instructed to cease and desist his operations due to the exclusive contract agreement. The small business owner provided timely and quality service which included cleaning out each trash container after dumping and spraying it with fragrance. His customers were truly satisfied with the services he provided to them countywide. Therefore, the small business owner continued to service his customers in Lowndes County despite the new sanitation contract between the county and new provider. Eventually, the local small business owner soon became a local hero and martyr for his customers and the entire county. The idea of arresting the small business owner came and went as fast as it was brought up. It was obvious that the customers of the small business owner would resist the change in service or create a hardship for the new county designated providers. Therefore, it became problematic to enforce the new exclusive contract agreement. Currently, there is still no other company in our area to provide such service as the small business owner.

Nevertheless, after much litigation and public outcry, the exclusive sanitation contract was renegotiated due to poor customer service complaints stemming from not enough trash containers for the residents and poor customer service in the unincorporated areas. Prior to entering into a sanitation agreement, residents had options to pay for sanitation service from another commercial-size company, a small local business owner, our county drop-off site, or to request burn permits in our area. Between the timeframe of approval and implementation of the new sanitation ordinance, the new sanitation providers for the county did not deliver enough trash containers to the residents. This delayed the implementation of the service for weeks, and ultimately opened the door to massive illegal dumping. Citizens dumped residential trash, yard debris, and bulk items along our nice country roads. They even spread household waste along our major thoroughfares in the county. Most of it was just showcasing public defiance and mockery, because they placed couches in medians with rugs and televisions. To this end, citizens complained about the mandate to utilize the new sanitation provider and receiving old trash cans instead of new ones. As stated earlier, the mandate stemmed from the exclusive contract.
But, the old trash cans derived from the new sanitation provider not having enough containers for the residents and simply giving them the ones previously used by other customers. Some of the trash cans looked decent; however, some of the containers appeared really faded and worn out. Residents wanted new trash cans for the new service. It might seem petty to some, but they did have a point. When implementing a new mandate, it is best to have your product appear to be of the highest quality, which sets the tone for the expectations in service.

So as many citizens expected, the services reflected their used trash cans. The service was not as promised in the beginning. Complaints began raining in about missed trash pickups. This was somewhat expected to a certain degree. So, county staff asked residents to give the new sanitation service provider time to get things together. However, the complaints continued for months. Normally, this would not be as big of a deal, but the mandated service also meant an increase in sanitation costs for some residents. Understanding, in municipal sanitation operations, missed pickups are recovered that day or the next day, which truly delineates the difference between the private and public sector. One operates as a business. The other operates as a service. Needless to say, many residents' missed trash was retrieved the following week. This meant their trash had to sit on their yard for several days and possibly killed their grass. Not to mention, citizens began to complain about turned over trash cans. This is because the new provider utilized side arm sanitation trucks to empty residential trash cans. When the side arm sanitation truck would empty the trash can, some of the cans would fall into the ditch. The drivers of the side arm sanitation trucks did not get out of the truck to stand the trash can back up or put it in its origin area. As a result, many trash cans were further damaged from falling off the truck. In addition, the trucks would leave paper and waste along the street due to their inability to get out of the truck. The streets and roads of Lowndes County were looking very bad. Until having a possible contract retraction meeting with the members of manage-
ment with the new sanitation service, stern quality control measures were put in place to ensure optimal customer service for the residents of Lowndes County, Georgia.

While privatization was a troubling reality to some at the time, it has proven to be the best solution to Lowndes County’s sanitation dilemma.

After meeting with the leadership of the new sanitation provider in Lowndes County regarding continuing complaints, they were willing to put several operational quality control mechanisms in place, but with an additional increase to the previous price for service. In exchange, the exclusivity of their contract was renegotiated which offered an opportunity for the other local small sanitation provider to operate legally. It seemed to be a win-win for our community. Nevertheless, the additional price increase mandated a complete turnaround in quality control. Follow-up in service by their staff along sanitation routes helped reduce the amount of trash flying from trucks.

While privatization was a troubling reality to some at the time, it has proven to be the best solution to Lowndes County’s sanitation dilemma. As a public works superintendent for a local municipality, I have grown to value the decision made by our county government more and more each day. There are tough decisions which arise out of public works departments around the nation such as funding shortfalls, inefficiencies, customer service issues, and unsustainable operations. The truth is that it isn’t always what you do, but rather how you do it. Educating your electing officials, staff, and citizenry is a key component to effectively managing solid waste. All key players and those affected need to be included in the process, because the city or county is not just for one group or another. It is for all of your citizens!

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Today’s trucks are beginning to look like the inside of a fighter jet with an array of technology at the driver’s fingertips. This may include automated vehicle location, automated controls, 360-degree cameras, configurable screens, camera control and driver alert systems. The decision to add technology to your fleet can add thousands of dollars to your vehicle and requires driver training and maintenance to keep it all functioning. You may not need or use all of the technology currently available but you probably already have some operating in your fleet now and are thinking about adding more. Is the technology worth the price? In many ways the answer is yes, but the savings are typically...

Future Fleet: Technology in waste fleets

Trent Tompkins
Director, Waste Collection Services
City of Edmonton, Alberta
Member, APWA Solid Waste Management Committee
found over time in improved safety, increased fleet availability, fuel savings and operations efficiency.

One of the more common features in use today is automated vehicle location or AVL, and it is available in a number of configurations. Active AVL allows for real-time data collection via cellular transmission from the vehicle about such parameters as vehicle location, speed, direction and other configurable factors. This allows for active dispatch and response to changes in your routing or emergency situations. Depending on your area, active AVL may also be part of your working alone safety strategy.

Active AVL allows for driver feedback technology that alerts the driver when they may have accelerated aggressively, cornered too hard or braked quickly. The instant feedback helps coach drivers, promotes positive changes in behavior, and the alerts may be monitored by dispatch as well. Swipe card access with unique driver identification is also useful in managing fleet and driver performance. Driver identification can be helpful when following up on vehicle damage or tickets as well as other pre-trip inspection functions. Other sensors associated with engine performance, compactor activation, stowing of collection arms and speed can also be attributed to the driver ID to help manage individual performance and safety.

Passive AVLS collect data from your vehicle and transmit once the vehicle passes a data receiver. These receivers may be located at your fleet shop, fueling locations or strategically throughout your community. The information collected will be delayed but can be used similar to active AVL data once it...
is downloaded from the vehicle. AVL data can be updated on a constant basis and fed into routing software to help show effective use of your fleet or variance from routes. This can also include vehicle run time, idling, and other engine and component parameters. AVLs can also be used for asset management and connected to transfer trailers or roll-off bins to monitor asset location and use.

Radio Frequency Identification (RFID) is widely used in waste management applications and is commonly found in automated cart collection systems. RFID can provide similar information as AVL by showing a cookie crumb trail of services that have been completed. The limitation to using RFID in place of AVL is that the data will only show where an RFID tag has been serviced and identified and will not provide any non-service data such as off route travel or disposal point activities. However, RFID has a number of other benefits and can be used with carts, front-end containers, roll-off bins or fixed location assets. The tag can be read with truck-mounted readers or a handheld unit depending on the application. The data collected typically will correspond to an address or services account that may be updated for both residential and commercial billing.

Front-end trucks and container collection can utilize additional combinations of technology including fork scales and RFID account management. If a bin has an RFID tag and the truck is equipped with fork scales the truck can service the bin and capture both weight and account details. This combined technology can help manage overweight vehicles and account management. This can also help managers address a common front-end service business issue by gathering detailed account weight. Typical bins services charge by volume but pay by weight at the disposal or processing location. On-board scales will tell you which sites are driving your costs and where account management may be required. Wireless volume monitors are also becoming available that can advise when a bin is full or a roll-off compactor is at maximum weight and requires service which helps to improve route planning and dispatch functions.

Vehicle cameras with cab-mounted monitoring screens are increasingly common in daily operations. Drastic improvement in picture quality and price reductions has increased the number, applications and value of vehicle-mounted cameras. This may include cameras mounted outside the cab, inside the cab, and hopper cameras that provide closed circuit, stored or direct video feed of the operations of the truck. Many waste fleet vehicle cameras are also integrated into driver functions such as turning and braking.

360-degree camera systems are changing the way that operators see the work around them. Cameras are mounted on all sides of the vehicle and integrated software creates a bird’s-eye image of the vehicle and surroundings. Automatic controls further enhance camera functionality by connecting operator actions to camera views. For example, when the driver uses the left turn signal or turns the wheel over a predetermined angle, the camera monitor automatically switches to that side of the vehicle providing the operator with a full view of the obstacles or traffic. This technology can also be used with the activation of the collection arms, hopper or other components.

Just as your fleet requires mechanics and service technicians for the engine and hydraulic components of the vehicle, you will need to ensure that you consider service for your equipment and software. Both hardware and software will require operator training and any equipment that has been customized will require additional support. You will need to plan for spare parts and service contingencies just like any other hardware on the vehicle. Keep in mind the availability of replacements or services and consider whether in-house or service agreements will meet your needs.

Once you have determined what technology you want on your fleet there are a number of ways to integrate and manage the technology. There are fleet solutions providers that can offer a complete package of equipment, monitoring and maintenance for your fleet. However, you may only want one or two of the functions or have existing agreements for some services. There is an endless number of vendor and equipment options and configurations that will meet your needs and I encourage you to work with your fleet group to help determine what is best for your operations and your organization.

Technology is changing rapidly and there are several opportunities to enhance your fleet and services. The next generation of technology will include electric vehicles, autonomous driving applications and drone monitoring to provide real-time visuals of vehicles when required. Benefiting from the advances requires a keen understanding of what is available and what your needs are. The core function of collecting and processing waste continues to change and technology will help us manage our operations efficiently and safely.

Trent Tompkins can be reached at (780) 496-6681 or trent.tompkins@edmonton.ca.
Director of Water Department

Organization: Jefferson Parish
Job Type: Full Time
State/Province: Louisiana
City: Jefferson
Post Code: 70123
Salary and Benefits: $74,863-$105,340 plus auto/cell allowance

The Director of Water oversees two water treatment plant facilities; plus water distribution in Grand Isle; various water towers; approximately 1,600 miles of water mains and thousands of valves, hydrants and water meters; and approximately 270 civil service employees. The annual operating budget is $40 million with a capital budget of approximately $11 million. The Director’s duties include: provides policy development and management guidance in the area of water; evaluates department operations and report to director of public works on a regular basis; is responsible for capital facilities planning; directs the water department in formulating and evaluating operating policies, programs and procedures; prepares reports on departmental operations, evaluates performance against established objectives, and prepares special reports on operating problems or plans as required; manages daily operations including treatment, distribution, billing, lab operations and other activities; prepares annual operating and capital budget, approves expenditures and monitors revenues and collections; receives and responds to complaints regarding department operation and water quality; directs administrative and field staff; handles personnel matters; and carries out all duties as assigned by the Parish President.

Minimum requirements: shall have a four-year degree in civil, sanitary, chemical engineering, or related acceptable degree, with five years of administrative experience and shall devote his entire efforts to this purpose for which this department has been created; or 10 years of significant management experience with a public utility. Preferred Requirements: 7 years of water utility management/supervisory experience. Louisiana Registered Professional Engineer preferred.

Knowledge of effective management and supervisory techniques and procedures; commitment to providing excellence in public service; proficient verbal/writing communication skills; ability to work within a culturally diverse community; provide leadership in developing and implementing policy initiatives for Jefferson Parish; familiarity with local/state/federal laws applicable to water utility operations and in providing potable water supplies to Parish residents; working knowledge of Outlook, Word and Excel computer programs; knowledge of personnel policies, supervision principles, budget development, administration principles, contract development and administration, and billing and collection policies and procedures.

The Director of Water shall be appointed by the Parish President with the approval of the Council. The individual selected for this position will be required to report to duty during emergency situations. The position is considered unclassified, limited-tenure, at-will employment. The individual selected for this position will be subject to a background check and will be required to submit a financial disclosure statement annually. The successful candidate shall possess and maintain a valid Louisiana Driver’s License or have the ability to secure one within 10 working days of hire.

For complete information visit www.jeffparish.net and select “Executive Employment Opportunities.”

www.apwa.net / March 2018 / APWA Reporter 75
EDUCATION CALENDAR

For more information about these programs or to register online, visit www2.apwa.net/Events. Program information will be updated as it becomes available. Questions? Call the Professional Development Department at 1-800-848-APWA.

2018

March 19-22
CSM, CPII and CPFP Certification Exams (computer-based testing)

March 22
Resiliency in Solid Waste

April 12
New Era: Local Government Taking the Lead on Sustainability

April 26
Growing and Maintaining Healthy Grass

May 6-9
2018 North American Snow Conference, Indianapolis, IN

May 21-24
SM, CPII and CPFP Certification Exams (computer-based testing)

June 21
Leveraging GIS for Public Works

July 16-19
CSM, CPII and CPFP Certification Exams (computer-based testing)

August 26-29
2018 PWX, Kansas City, MO

September 17-20
CSM, CPII and CPFP Certification Exams (computer-based testing)

November 12-15
CSM, CPII and CPFP Certification Exams (computer-based testing)

2019

May 19-22
2019 North American Snow Conference, Salt Lake City, UT

September 8-11
2019 PWX, Seattle, WA

= Click, Listen & Learn program (Free to Members)

= Live Conference (Paid Registration)

= Certification Exam

= Web-based training

APWA members may access past Click, Listen & Learn programs from the Members’ Library at no cost. Programs can be streamed to your computer via the link found in the library.

If you have expertise that you would like to share, please use the online Call for Presentations form to describe your expertise and perspective on the topic. www.apwa.net/callforpresentations/
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ClearSpan Fabric Structures is the industry-leading manufacturer of tension fabric buildings, offering American-made structures with in-house engineering, manufacturing and installation. These structures provide energy-efficient, economical solutions for equipment storage, warehousing sand and salt storage, and more. ClearSpan Hercules Truss Arch Buildings feature abundant natural light and spacious interiors without support posts, allowing easy clearance for forklifts, dump trucks, skid loaders, conveyors and other heavy machinery. Hercules Truss Arch Buildings can be custom engineered to fit the building requirements of the specific location. With minimal foundation requirements, the structures can be permanent or temporary, and are easy to relocate. For more information, please visit www.clearspan.com or call 1.866.643.1010.

Reality Modeling Software

ContextCapture is Bentley’s reality modeling software that can quickly produce 3D models of existing conditions for infrastructure projects of all types, derived from simple photographs and/or point cloud. Without the need for expensive or specialized equipment, ContextCapture enables users to quickly create and use these highly-detailed 3D engineering-ready reality meshes to provide precise real-world context for design, construction, and operations decisions throughout the lifecycle of projects. Project teams can easily and consistently share reality modeling information, consumable and accessible, on desktop and mobile devices, in many formats, including native use within MicroStation for use in any engineering, operations, maintenance, or GIS workflow. For additional information, visit www.bentley.com/ContextCapture.

X71 Series Reversing Grinder

Zoeller’s bidirectional grinder pumps powered by a Tulsar Canada control panel are an ideal solution to cut through the FOGs that create headaches for municipalities and business owners. Bidirectional grinder pumps reverse direction each cycle to minimize jamming of debris in the inlet and ensure wastewater keeps flowing through the pipes at a brisk two to three feet per second. Setting up two pumps on alternating cycles provides redundancy and backup, and equalization of the wear on the pumps. Assembled in North America with North American parts, they are proven and reliable to help find efficiencies in wastewater systems. For more information, visit www.zoeller.com.
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IN CONJUNCTION WITH
IFME International Federation of Municipal Engineering
FIIM 19th WORLD CONGRESS 2018
THE POWER OF PUBLIC WORKS!
### UPCOMING APWA EVENTS

**PWX**

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<td></td>
<td>Aug. 26–29</td>
<td>Kansas City, MO</td>
<td>For more information, contact David Dancy at (800) 848-APWA or send e-mail to <a href="mailto:ddancy@apwa.net">ddancy@apwa.net</a>.</td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td>Sept. 8–11</td>
<td>Seattle, WA</td>
<td>For more information, contact David Dancy at (800) 848-APWA or send e-mail to <a href="mailto:ddancy@apwa.net">ddancy@apwa.net</a>.</td>
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**National Public Works Week:** May 20–26, 2018

Always the third full week in May. For more information, contact David Dancy at (800) 848-APWA or send e-mail to ddancy@apwa.net.

**North American Snow Conference**

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<tr>
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<td>2018 North American Snow Conference</td>
<td>May 6–9</td>
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<td>For more information, contact Brenda Shaver at (800) 848-APWA or send e-mail to <a href="mailto:bshaver@apwa.net">bshaver@apwa.net</a>.</td>
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**19-22** APWA: CSM, CPII and CPFP Certification Exams (computer-based testing), (800) 848-APWA, www.apwa.net


### APRIL 2018

**12** APWA Click, Listen & Learn: “Growing and Maintaining Healthy Grass,” (800) 848-APWA, www.apwa.net


### MAY 2018


**26** APWA Click, Listen & Learn: “Growing and Maintaining Healthy Grass,” (800) 848-APWA, www.apwa.net

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