Crews in Moorhead, Minn., are watching recycling “pick up” substantially after rolling out 16,000 no-sort recycling bins. Residents are recycling five times more than they did in 2017, and are helping Moorhead become a GreenStep City. City leaders procure 96-gallon Toter carts and other equipment by using cooperative contracts through their government partner, Sourcewell, which has hundreds of vendors already on contract.

See how blue bins are turning the city green.
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Editor’s Note: President Spearman gave the following speech during the PWX 2019 Opening General Session on September 8, 2019.

Once again, good morning and welcome to PWX 2019: “It Starts Here.” Because of the services that you provide to our communities and citizens, public works does start here with you, the dedicated men and women who make our lives better every day and work together to contribute to a higher and sustainable quality of life for all. I am proud to be part of an industry and profession that I believe is one of the highest forms of public service. And I am honored and humbled to be able to serve as your president for the coming year. I promise that I will be an untiring advocate to tell your stories and be a voice for the value of the services that you provide every day to our citizens without seeking praise and recognition. Because “the public works because of public works.”

You have learned a little bit about my family already. And my family is very important to me. I am very blessed to have my wife and partner of forty-three years, Molly, here with me today. She is a public works professional in her own right as she oversees a school bus fleet of 6,000 buses, forty maintenance shops and 500 maintenance personnel in her role as the South Carolina Superintendent of Education. And she is an APWA member.

I also am happy to have my son, Mitchell; my daughter, Katie, and her husband, Lee Cornwell; and one of the new loves of my life, Molly Brooke Cornwell here as well. Marilyn Anne Cornwell, my other new love, is back home in Charlotte but I do have pictures. Mitchell works as a development officer at the University of Texas. He could have been a great city planner, but he decided to be an attorney instead. Katie and Lee have civil engineering degrees and actually met in the concrete lab at Clemson University. Go Tigers!

I also have to remember and thank my group of supporters who cannot be here today—my father, my mother, my grandparents, numerous aunts and uncles and friends that provided me with the nurturing and encouragement to go out in the world and experience the life that I have been blessed to have.

I also have another important family—my APWA family! And we are a family that cares about each other and celebrates the good times and supports each other in the trying times. This association is unique in that regard and I am proud to be associated with each of you.

William E. (Bill) Spearman, III, P.E.
APWA President
I have been fortunate that many APWA leaders and members have given me opportunities to participate in this wonderful association. Bob Grimes, my boss at Woolpert, didn’t ask, he simply told me that I was going to be active in APWA. South Carolina Chapter leaders like Missy Gentry and Robert Anderson gave me the opportunity to serve on the chapter board and the chapter has always supported my national service. Past Presidents Dwayne Kalynchuk, Tom Trice, Bob Freudenthal, Bill Verkest, Noel Thompson, George Crombie and others gave me opportunities to serve APWA on the national level through committees, task forces and focus groups. I encourage you all to get involved with your local chapter and find that one person that could add so much to this association and get them involved as well.

This is an exciting time to be an APWA member. We now have over 30,000 members. As I have traveled around the association this past year, I have experienced an excitement that is contagious. I have seen chapters recognize the important role that our operational staff play in delivering our services to our communities. Many of the chapters are including operational tracks in their conferences. APWA recently launched the Winter Maintenance Operator Certificate program available to chapters and agencies now. We cannot underestimate the positive impact that our Roadeo and mechanic challenges have on the participants when their skills and abilities are showcased. I am also happy to see the young and diverse faces participating in these chapter events. Folks, these are the faces of the future of our industry and profession. When you meet them here in Seattle, at chapter and branch meetings or even in your own offices, take a moment to get to know them and offer to be a coach or mentor and recognize them as a colleague. I assure you that it will pay dividends now and in the future.

In the public works industry, we are bridge builders both literally and figuratively. We build and maintain the infrastructure and provide services that make lives better. And our efforts build the bridges that link today with tomorrow. Thank you so much for the opportunity that you have given me to serve on your national Board of Directors and as president-elect over the past seven years. Thank you for your hospitality, your support and most importantly, your friendship. I am excited for what lies ahead in the coming year as I visit with you in Canada and the United States to learn about the great things that you are doing and to be able to tell your stories.

Please enjoy everything that PWX 2019 has to offer, network with your colleagues, visit the exhibitors, attend the social events, attend the Roadeo, celebrate with our award winners, and enjoy Seattle and all of the hard work of the Washington Chapter to make this PWX very special. Thank you!

AMERICAN PUBLIC WORKS ASSOCIATION
Mission Statement: The American Public Works Association supports those who operate, improve and maintain public works and infrastructure through advocacy, education & member engagement.
APWA is Listening to You!

William E. (Bill) Spearman, III, P.E.
APWA President

As we visit chapters and meet with our members throughout the U.S. and Canada, we have listened to you. We have heard from you that you would like increased opportunities to play a role in serving on national committees and on the Board of Directors. In many associations in order to serve on the Board you need to have moved up through the ranks—which in some associations can take 30 years. We believe that there is plenty of talent and expertise within the ranks of our membership and we want to provide opportunities to APWA members to contribute in a variety of ways without having to wait 30 years.

As a Board, we discussed the importance of opening Board positions in a timelier fashion and are thereby implementing term limits. People of all ages and levels of experience can contribute to the Board of Directors and should not have to wait for years if they are ready and qualified to contribute. We want a diverse and inclusive Board of Directors to help guide APWA into the future. It is for this reason that the Board embarked on studying its governance model. To make any changes to the governance structure requires amending the APWA Bylaws. We are also recommending additional amendments to further clarify Board member responsibilities and refine association best practices. Amendments to the bylaws require a majority vote of the APWA Board of Directors and a two-thirds affirmative membership vote of those members who cast a vote. On September 11, 2019, the Board of Directors approved amendments to the bylaws that the APWA membership will be asked to approve through an electronic ballot. An e-mail invitation will be sent to you with a link to cast your vote to approve the amended APWA Bylaws. What follows is a summary of the substantive changes:

Board Member Directors and Officer Term Limits
The Board approved term limits for directors and officers of the Board. During the past year, the APWA Board of Directors has been discussing the need to rotate Board members off the Board in an effort to create vacancies for others who are interested in serving on the Board. The Board found that our current bylaws do not expressly state a maximum term of office. The APWA Strategic Planning Committee was asked to study this issue and requested input from a focus group of the APWA Council of Chapters. Based on this work, the Board has approved the following changes to the bylaws:
“...Directors are restricted to serving a maximum of three two-year terms, meaning no Director shall serve as a member of the Board of Directors for more than six years...”

“A Director who is elected President-Elect may serve on the Board of Directors during his/her terms of service as an officer for up to three additional years, e.g., if elected as President-Elect he/she could serve (i) a one-year term as the President-Elect, (ii) a one-year term as the President, and (iii) a one-year term as the Immediate Past President, regardless of when elected to those offices and whether or not at the time of his/her election he/she had previously served or was then serving on the Board of Directors.”

With this amendment, no Board member shall serve more than nine years other than if a Board member has stepped in to fill an unexpired term of another Board member with less than one year remaining of that term of office. In this instance, the remaining time left on the unexpired term will not be counted against the total of six years as a director or the nine-year maximum of serving on the Board.

**Change of Title from Directors-at-Large to Technical Directors**

The Board approved the change of title from Directors-at-Large to Technical Directors. Currently those Board members who have responsibility for APWA Technical Committees have titles of Directors-at-Large. The Board felt that the title change would add clarity to the membership and public regarding their responsibilities. The bylaws have been amended to change the titles to:

- Technical Director, Engineering and Technology
- Technical Director, Environmental Management
- Technical Director, Fleet and Facilities Management
- Technical Director, Leadership and Management
- Technical Director, Transportation

**Change of Title from Executive Director to Chief Executive Officer (CEO)**

The Board approved the change of title from APWA Executive Director to Chief Executive Officer (CEO) to align with a trend in the association community, to add to the clarity when interacting with the business and international communities, as well as enhance the ability for APWA to attract candidates for this position in the event of a vacancy of the executive director position. Additionally, the amendment further clarifies that the Chief Executive Officer (CEO) serves as an ex-officio non-voting member of the APWA Board of Directors.

YOUR VOTE COUNTS!

Online voting to approve APWA Bylaw amendments is open November 12 – December 12, 2019.

To vote, simply log into your APWA.net account, click the MyAPWA menu option, and then click Vote Now.
Change in Language Regarding Special Memberships  
The Board approved various changes to the eligibility requirements for Special Memberships like Life Membership and Retired Membership. These changes were mostly minimal restructuring of sentences, primarily meant to ensure consistency in defining the Special Memberships. The Board also approved the removal of Honorary Membership.

Change in Meeting Provisions  
- **Electronic Meetings.** The Board approved changes to the section of the Bylaws related to Board of Director and Member meetings in accordance with Illinois law (APWA is incorporated in Illinois). This change allows the members to take action by any electronic means, which the law permits. In order to vote electronically, voting must be open to members for at least five days from the date the ballot is delivered. If the vote relates to: (i) removal of one or more directors; (ii) merger; (iii) consolidation; (iv) dissolution or sale; or (v) lease or exchange of assets, the ballot must remain open for at least 20 days from the date the ballot is delivered.

- **Executive Sessions.** Additionally, the Board approved a change regarding Executive Sessions of the Board of Directors. The new language clarifies that matters decided in Executive Session, subject to confidentiality and privacy concerns, will be reported to Directors not in attendance at the Executive Session, unless the Executive Session was called to discuss matters involving a sitting Director, in which case such information will only be made available to the sitting Director if required by law.

- **Waiver of Notice.** The Board approved a change to the Waiver of Notice provision regarding meetings. The language clarifies that attendance of a member or a director at a meeting will constitute a waiver of notice of such meeting unless the member or director attends the meeting for the express purpose of objecting to the lack of notice. This change is reflective of Illinois law.

Changes in Selection and Removal of Officers and Directors  
The Board approved changes to provisions related to the selection and removal of officers and directors. These changes reflect APWA’s current practices and Illinois law. The changes include requiring results of director elections to be verified by an independent third party and the inclusion of a blank space for members to write in an eligible candidate other than those named on the official ballot. The Board also approved changes allowing directors (other than Regional Directors) to be removed, with or without cause, by an affirmative vote of two-thirds of the membership voting at a meeting called for such a purpose. Based on Illinois law, Regional Directors may only be removed by the members who elected them, that is, the members residing in the Region in which the Director resides, by the same two-thirds vote as is required for removal of other Directors.

The Board also approved changes clarifying the method of selecting officers. The changes reflect current practices and allow the Board to appoint such Officers as it deems necessary in the best interest of APWA, excluding the President of APWA, who must be selected through the nomination process. The changes also allow the Board to remove an Officer with or without cause in any manner permitted by law.

Changes in Amendment Procedure  
The Board approved a change to the procedure for amending the Bylaws. Before the change, the Bylaws were silent on how the notice of change was to be sent to the membership. As amended, the provision will require the notice to set forth the proposed amendment or include a summary of the changes to be affected by the amendment. This change is in conformance with Illinois law. The change also requires that a majority of the Board of Directors approve a proposed amendment before submitting the amendment to the membership for approval.

Changes in Indemnification Provisions  
The Board approved changes to the section of the Bylaws related to indemnification. The Bylaws have always permitted APWA to indemnify persons to the fullest extent permitted by Illinois law, but legal counsel suggested the Board revise the Bylaws to set forth the exact statutory language. The Bylaws have been revised to include the indemnification provisions outlined in Illinois statutes.

Non-Substantive Changes  
There were a number of non-substantive language changes made to conform the bylaws to current practices and update the language to be consistent with Illinois requirements. These changes are not substantive and therefore no summary is provided. However, if you are interested in reading the full bylaws before you vote, please contact Teresa Hon at thon@apwa.net and request the redlined bylaws document.

Voting to approve the Bylaw amendments will be done by electronic ballot. On November 12, you will receive a notification and website link to cast your vote by December 12.
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Highlights from PWX 2019
WX 2019 was a whirlwind of excitement, with vendors quickly filling up exhibitor floor space and attendees rushing through the conference center to make it to their education sessions on time. Seeing the hustle and bustle of excited chatter and friendly faces would be more than enough to remind me that everything I worked towards for PWX was worth it.

When I first arrived at the Washington State Convention Center, I was amazed to see tall escalators leading up the six floors to where PWX 2019 would take place. The ceilings were sky-high, and light shone through the floor-to-ceiling glass windows, making the floors and walls glisten. In awe, I wondered how we would fill such a large space in just three short days before the show.

The next few days happened fast; there was so much to do before the conference started on Sunday. My job as office manager allowed me to direct exhibitors to their loading dock, arrange signage and carpeting to look its best, and help staff and attendees as they arrived. PWX 2019 was up and running and before I knew it, attendees were filing in by the hundreds.
I attended my first general session on Sunday. Vibrant lights, loud music, and exciting videography filled the stage, with “It Starts Here: PWX 2019” splashed across the screen. The crowded room was teeming with energy. The opening session was filled with talented, passionate speakers like our board members, past presidents, and APWA Executive Director Scott Grayson. Keynote speaker and Founder of Facing Homelessness Rex Hohlbein shared how his passion to help Seattle’s homeless population started a nationwide revolution. I was truly inspired by his speech and couldn’t take my eyes off the stage. As he finished, the crowd rose for a standing ovation. In this moment, I felt a wave of pride wash over me. I was proud of my association, and of the thousands of public works professionals from across North America who flew to Seattle to attend PWX.

My time in the management office was exciting. Challenging at times, but exciting. When I wasn’t in the office, I was able to explore the conference and sit in on education sessions. I took pictures and posted on social media using the #PWX2019 hashtag. We had so much engagement from attendees and members on social media that every time I would refresh the page, a flood of new tweets and Facebook posts would appear, displaying the widely used hashtag #PWX2019. By the end of the conference, I was able to track that nearly four million people used the PWX hashtag on Twitter alone—a record high.

As the excitement began to die down and the number of attendees dwindled, I finally found a moment to reflect. Coming into the conference, I thought I knew everything: the Connect LIVE! booth number on the exhibit floor, the keynote speaker topic that would take place Monday...
morning, the number of registered attendees since 2004—but I couldn't have told you about the experience, how people's faces lit up in General Sessions, how the convention center halls buzzed with inspired conversation around new solutions and innovations, and how the Get Acquainted Party at MoPOP would be packed with professionals ready to build new connections. I worked all year on PWX marketing e-mails and social media posts, but to experience it in person was eye-opening. All the planning and preparation from our staff and the hard work and dedication of our members came to life in those few days. I'm already counting down the days to PWX 2020 in New Orleans!

Abigail Grossman can be reached at (816) 595-5251 or agrossman@apwa.net.
According to the U.S. Department of Housing and Urban Development’s Annual Homeless Assessment Report, as of 2018 there were around 553,000 homeless people in the United States on a given night.

Public works and infrastructure professionals are encountering the impacts of homelessness throughout the many responsibilities of public works—including street, road, and bridge safety, public transportation, rights-of-way management issues, emergency management, clean water and wastewater treatment, public facilities and parks management, and solid waste collection and disposal.

As homelessness presents an increasing challenge for public works, staff are being asked to respond in productive and politically sensitive ways. In an effort to address these issues, PWX made homelessness the center of its focus.

Opening General Session

Rex Hohlbein, Founder of Seattle-based organization Facing Homelessness, presented in the Opening General Session. Facing Homelessness provides resources to bolster compassion and empathy through programming designed to reduce negative stigmatization of homelessness. “In homelessness, the individual disappears,” said Hohlbein. “We have all become spectators in an ever-increasing humanitarian crisis.”

There are an overwhelming 8,500 homeless in Seattle. “We are sidelined because we believe we do not have the skills to make a difference,” said Hohlbein. Rather than letting their faces disappear into the crowd, Hohlbein...
encourages us to focus on individual stories. “In the middle of that complexity, there is a human being in need,” he said. To help combat the negative stereotypes attached to homelessness, Facing Homelessness shares photos and stories of homeless individuals on Facebook and Instagram. They also provide socks, gloves, snacks, sleeping bags, and other supplies through their Window of Kindness volunteer program.

The organization’s latest project is called The BLOCK Project, which invites homeowners to place a 125-square-foot home in their backyard. These homes are off-grid and self-sufficient, complete with a kitchen, bathroom, sleeping area, solar panels, greywater system, composting toilet, and more. Once the home is complete, social service case managers help match the homeowner with a person in need. Their goal? Place a BLOCK home on every residential block in the City of Seattle.

His speech encouraged us to see homelessness as an issue that affects us all. “It is not a homelessness crisis; it is a community crisis,” he said. He also encouraged listeners to examine ourselves, recognize what platforms we’ve had available to succeed, and break down the barriers between us and who we see as “the other.” Simply saying hello can change our relationship with those in need. “The closer we come, the more we feel,” he said.

Proud to Care Kits
During Hohlbein’s speech, he announced the new face of APWA’s Proud to Care initiative. Proud to Care encourages us to go the extra mile in serving our communities. This year’s goal was to create 500 care kits to donate to Facing Homelessness. The care kits included a drawstring bag, socks, hats, snacks, hand-warmers, and a personal note from the attendee who assembled the kit. As the Care Kit station was scheduled to be available over the course of two days, it comes as no surprise that our dedicated members completed the goal of 500 bags in less than 45 minutes. “We could barely get the supplies out fast enough,” said Taylor Abbate, APWA Meetings Planner.

Virtual Reality
In addition to the Care Kits and Hohlbein’s heartfelt speech, PWX featured a virtual reality experience called “Becoming Homeless.” This immersive experience from Stanford University’s Human Interaction Lab allowed attendees to step into the life of a working adult facing the decline of resources—ultimately leading to homelessness. The five-minute activity takes the participant on a heart-wrenching journey, and it shares the stories of others who have become homeless along the way. Besides being impressed with the level of immersion, many participants called the experience “powerful” and “eye-opening.”

Education Session Recaps
Navigation Centers – A Different Approach to Shelter the Homeless
Facilitated by Mohammed Nuru, Director of San Francisco Public Works; Rachel Gordon, Director of Policy and Communications; Rachel Alonso, Project Manager; and Julia Laue, Principal Architect and Bureau Manager, this session unpacked the challenges and triumphs of implementing an innovative strategy for helping the homeless: Navigation Centers.

With roughly 10,000 new residents each year, San Francisco is faced with a housing affordability crisis. Over 8,000 people go homeless in San Francisco, 5,000 of whom are without shelter. Because public works employees are responsible for keeping the city clean, they regularly encounter encampments—which can block the right-of-way and pose major health risks to the community. The city spends roughly $13 million on cleanup due to homelessness-related issues.

Navigation Centers help connect those experiencing homelessness with medical services, mental health services, and case management. Guests have beds, showers, lockers, laundry, outdoor space—and can even bring their pets. Rachel Alonzo, Project Manager for the Navigation Centers, discussed the planning involved in construction, from funding and assessing site locations, to zoning issues and cost.
“The most successful projects get done through collaboration,” she said. The public works department has partnered with the mayor’s office, the Department of Homelessness, Pacific Gas and Electric (PG&E), and the California Department of Transportation (Caltrans). Sites vary from warehouses and modular trailers to storage containers and refurbished buildings (often the most cost-effective solution). Many sites are oddly shaped, which poses a challenge to designers working in short time constraints. “It keeps our staff on their toes,” said Principal Architect Julia Laue.

Once Navigation Centers are up and running, they are turned over to the San Francisco Department of Homelessness and Supportive Housing. They do the intake, bring in clinicians, and partner with nonprofits to keep the Navigation Centers running. However, Navigation Centers aren’t a solution for everyone experiencing homelessness. The centers are invite-only, and some who are invited do not choose to stay—but the vast majority do. Guests typically stay 30-60 days before transitioning into a more permanent solution.

“There is no magic bullet to solve the problem, but there are innovative approaches that do make a difference,” said Mohammed Nuru. The goal is to treat people with dignity and respect, hear their concerns, and help them transition to a better place. They are, as Nuru said, “a little alcove against all the bad out there.”

The “Becoming Homeless” virtual reality experience allowed attendees to step into the life of a working adult facing the decline of resources, ultimately leading to homelessness.
Making Space: Optimistic Strategies for Addressing Urban Homelessness in Public Works

In 2017, MIG SvR Senior Landscape Architect Brice Maryman received the Landscape Architecture Foundation (LAF) Fellowship for Innovation and Leadership, which allowed him to study the impact of homelessness on the landscape, document current management approaches, and—hopefully—offer comprehensive, community-based strategies to create better public spaces for all.

“We tell ourselves stories about drug addiction, alcoholism, domestic abuse, or perhaps mental illness,” said Maryman, who then went on to show that the steadily increasing rate of homelessness does not seem to match with an increase of any of those causes.

The main correlations found were unemployment and lack of affordable housing. “The rental vacancy rate determines how big your homeless population will be,” he said. “When vacancy rate dips below five percent, that’s when your rates go up, and when homeless rates go up.”

Studies found that for every $100 increase in rent, there was a 6-30 percent increase in homelessness. Along with the data he shared, he asked probing questions about our relationship to homelessness, including “What is society’s responsibility?” “What is our moral imperative?” and “Are we helping or hurting the environment?”

As a landscape architect, Maryman aims to create public spaces that address those questions and alleviate the issues and effects of homelessness. He offers a three-pronged strategy: prevention, connection, and invitation. Prevention entails providing the essential elements of shelter, community, hygiene, and security that make a person feel at home. He posited that offering housing first can provide the stability and security necessary to address underlying issues and connect people with the resources they need.

Connection entails developing a relationship with the homeless individuals in a given neighborhood, not by giving money or aiding in their success, but by simply knowing them. By removing the barrier between the homeless and the rest of the community, we add a level of humanism that has long been missing.

Invitation entails creating space for those without homes. Maryman named examples of organizations like WeCount who supplies clean socks for the homeless, LavaMae who provide public showers on refurbished school buses, RealChange who provide newspapers for folks to sell for compensation. He also promoted the use of safe, economically diverse transportation systems like protected bike lanes because, as he put it, “physical mobility is economic mobility.”

Environmental Remediation Following Removal of Encampments in the Santa Ana River (Flood Control Facility)

Facilitated by Orange County, CA Deputy Director Kevin Onuma and Assistant Director/County Engineer Khalid Bazmi, this session gave a detailed account of how the public works department joined forces with other county agencies and organizations, and used emerging technology to enhance safety, improve water quality, and manage public perception in flood control rights-of-way.

In 2016, homeless encampments began to appear near the Santa Ana River—a 30-mile-long flood control facility in the heart of Orange County. In 18 months, the encampment numbers grew to over 700, posing a major safety risk to the general public, the public works staff, and the homeless. Campers may displace rocks, start fires, block maintenance roads, affect water quality, and cause other damage to the facilities. The campers are also in danger in the flood facility, as they could become trapped or drowned during a storm.

“Homelessness is not an issue public works will solve,” said Bazmi. “We are the ones dealing with the impacts and so on and we have a piece of the puzzle, but our roles are to maintain the facilities,” said Bazmi. “What is needed to deal with the impacts we are faced with is partnerships,” said Onuma.

To begin, Orange County Health Care Agency (HCA) housed people for up to 30 days in hotels to help connect them with the proper social services. This process was done with compassion and sensitivity, resulting in zero arrests throughout the project. The transportation authorities transported people to hotels and set up storage sites for personal belongings. Public Works—with the help and training of an outside contractor—sorted through trash, debris, and personal belongings. “In my years with the county, I’ve never seen so many departments work together on a project,” said Onuma.

They also implemented a geographic information system called ArcGIS to report hotspots for encampments. Inspectors can attach notes and photos, then share them with partner agencies who can quickly take action.

Safe, economically diverse transportation systems like protected bike lanes are important because “physical mobility is economic mobility.”

~ Brice Maryman

Brice Maryman’s three-pronged strategy for alleviating the issues and effects of homelessness: prevention, invitation, and connection.
In the end, they removed approximately 14,000 needles, 404 tons of debris, over 5,000 pounds of bio-waste, and moved 700 people in a two-mile area. “That’s something public works could not do by itself,” said Onuma.

To maintain the area, they’ve tightened security and trespassing enforcement, upgraded fences, and incorporated routine inspections and debris removal. Today, HCA provides outreach services in growing hotspots to prevent new encampments, so “...by the time public works staff gets to the site, they’re doing true public works work,” said Onuma.

**Hackathon: The Impacts of Homelessness on Public Works**

At PWX 2019, APWA introduced an all new program: The Hackathon. A hackathon is a sprint-like event in which field experts (usually software developers and computer programmers) collaborate intensively on a project. Hackathons are meant to promote unusual innovations and solutions, strengthen the culture of a community, and allow people to use their strengths.

This hackathon would focus on one thing: The Impact of Homelessness on Public Works. At 9:00 a.m., participants filed into the lobby to join. Facilitator Jamie Murdock kicked things off. “The goal of a hackathon is to be thinking bigger than what is the current state,” he said. He encouraged participants to be curious, ask questions, and speak with radical candor. “This is a very non-technical hackathon,” he said. “We want to apply the hackathon methodology to non-tech problems.” The hackathon would happen in four phases: a question burst phase, an ideation phase, presentations, and judging. In the end, there would be one winner.

With the help of Murdock and APWA Education Manager Matt Harper, the 26 participants were separated into groups of five (and one group of six). The facilitators made a conscious choice to include group members from various backgrounds, regions, and job positions to help diversify peoples’ points of view. “We are trying to innovate, and titles get in the way,” said Murdock. Each group would try to solve one question: How can we better provide public works services to unsheltered, homeless citizens?

Once in their groups, Murdock instructed participants to ask tough, honest questions—without justifying their question or attempting to answer. “When we are kids, we ask a lot of questions. As you get older, you better know the answers,” said Murdock. “Today we encourage you to be vulnerable.” Participants spent about 15 minutes asking some of the most difficult questions facing homelessness. As folks read their questions aloud, their group members listened intently. Questions ranged from technical (What zoning laws get in the way of building shelters?) to emotional (How can we show more compassion as a community?).
After the question burst, the teams split up to grab lunch and explore the exhibit floor. Participants reconvened with their groups at 1:00 p.m. sharp. Tables were set with stress relief balls, candy, colorful markers, Play-Doh, and other objects to help participants to keep their hands busy and their minds free. They spent three intense hours brainstorming solutions and devising strategy options to address the impact of homelessness on public works.

Conversations ranged from inspired to heated as participants shared their thoughts and ideas. “This is something that, especially over the last five years, I did not intend on becoming the subject matter expert, but it’s happened,” said Steve Materkowski, Senior Construction Manager at the Flood Control District in Denver, CO. “Operationally it touches so many things that we do.”

While group members talked, three mentors floated around the room to provide guidance, answer questions, and help people get “unstuck.” Mentors included Rachel Gordon, Policy & Communications Director at the San Francisco Department of Public Works; Katy Miller, Regional Coordinator for the U.S. Interagency Council on Homelessness in Seattle, WA; and Brice Maryman, Director of Landscape Architecture at MIG|SvR.

Ideas flew through the air. Participants considered ways to ease access to public transit, make use of inactive public land, collect refuse, provide drinking water and sanitation stations, build temporary shelters, provide safety, and much more. But no plan came without the idea of partnerships. Social services, nonprofits, and other agencies were an ever-present consideration. “Public works didn’t create homelessness; but it has been delegated to us to address,” said Maryman. “It’s time for us to start delegating back up; there’s a different set of tools we can use to solve these problems.”

As the teams discussed, they also each received one large foam board and set of markers to create visual aids for their presentations. Around 2:30 p.m., groups started to put pen to paper. To tackle the visuals, many used cups and boxes as stencils to carefully draw out their designs. Although they were drawing up serious solutions, the groups laughed, smiled, and encouraged each other.

As 4:00 p.m. neared, groups began to feel the pressure. Finishing touches were placed on presentation boards.

“The goal of a hackathon is to be thinking bigger than what is the current state.” ~ Jamie Murdock
and folks trickled into the presentation room. Each group would have two minutes to pitch their solution, followed by two minutes of questions from the judges. The judges gave a 1-5 rating in three categories: originality, potential, and presentation. Judges included Sara Vander Zanden, Executive Director of Facing Homelessness; David Blandford, Senior Vice President of Public Affairs for Visit Seattle; David Dancy, APWA Director of Marketing and Web Services; and the audience, who would vote for their favorite pitch. Once the rules were all out on the table, each team drew a number to see who’d go first.

The first team pitched the idea of a Mobile Connection Station (MCS, for short). The MCS would be placed in areas with a high number of unsheltered individuals. It would offer laundry facilities, charging stations, showers, and water—all run by the public works department. The MCS would also bring along social services to help connect people with the resources they need to get back on their feet.

The next team presented Water Worx, a water and sanitation station that would be placed in traditional park space. The team planned to provide water filling stations, sanitation stations, and restrooms. Further, they suggested using the gray water to water edible landscape—fruit trees and bushes would be available to all. They saw potential for a community garden as well and envisioned a space that all members of the community could enjoy.

The third team to present created the HOPE toolkit (homeless, operational, planning, and execution). The toolkit uses the ICS emergency response framework to address homelessness as an emergency.

Team four pitched Lots of Life, a quarter-acre community park. This functioned much like an RV park—with a fire safety line down the center of the lot, a community center, a business center, and a community kitchen. Trailer homes with sewer, water, and electric connections would line the outside of the lot, each with sustainable and cost-saving fixtures like solar panels. Residents would not be required to pay rent, but they would be asked to help manage and maintain the community.

The final pitch offered a low-cost housing solution aided by an app. CareBnC would allow host families to place a small, affordable housing unit in their backyard, screen potential residents and match them with an appropriate host family.

The judges then stepped out to deliberate, leaving the rest of the room to reflect on the day. “I think what’s been so amazing is, honestly, the difficult conversations and the internal and organizational struggles that everyone has articulated,” said Brice Maryman. “We all recognize how complex homelessness is.”

When the judges returned, they announced the winning pitch: CareBnC. The winning group members received 1,000 pairs of socks from Bombas to donate to the organization of their choice. They also received a $50 credit to the APWA Store. Overall, it was a happy and productive day. Facilitators and APWA staff members collected information from all of the participants to follow up with them on their pitches. “This is the starting point for a lot more to take place within the APWA community,” said Murdock.

The winning pitch was an app called CareBnC that would allow host families to place a small, affordable housing unit in their backyard, screen potential residents and match them with an appropriate host family.
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Booth 2024
PWA members from Canada were well represented again this year at PWX in Seattle. Two hundred seventy Canadians attended PWX, including 97 exhibitor representatives from 32 Canadian companies and one participant in this year’s Equipment Roadeo. As in the past, CPWA hosted a luncheon, educational session, and breakfast for international attendees at PWX. In addition, speakers from Canada shared their expertise at educational sessions on topics ranging from winter maintenance to organizational culture.


One hundred and ten Canadian, U.S. and international attendees gathered for the annual CPWA Luncheon at PWX 2019 to hear from Dan Gardner, author of Risk: The Science and Politics of Fear. Mr. Gardner noted that people struggle to accurately anticipate and effectively manage risks, even when the risks are reasonably predictable and mitigation simple. He spoke about how people decide what to worry about, why we so often get it wrong, and argues that the answers lie primarily in evolution.

CPWA at PWX 2019

Anne Jackson, Director of Sustainability and Canadian Government Affairs, American Public Works Association, Washington, D.C.

CPWA 2019 National Public Works Week Awards Contest

During the CPWA Luncheon, Patty Podoborozny, CPWA Director from Alberta, had the honor of announcing the winners of the CPWA National Public Works Week (NPWW) Awards Contest for 2019.

The CPWA NPWW Awards Contest recognizes municipalities that excel in public education and outreach during National Public Works Week. Celebrated annually in May, National Public Works Week is observed in both Canada and the U.S. and is an opportunity for public works departments to demonstrate and display how their services improve communities. It also provides an opportunity for staff recognition and team building and for public works departments to promote public works as a career choice to students and others entering the workforce.

This year’s entries featured creative approaches to public education and outreach. Municipalities that participated in the awards program are listed below, with winning municipalities highlighted:
First Time Entry

- Saint-Denis-de-Brompton, QC (pop. 4,305)
- City of Melville, SK (pop. 4,562)
- Town of Okotoks, AB (pop. 29,881)
- City of Pointe-Claire, QC (pop. 31,380)
- County of Wellington, ON (pop. 97,610) WINNER
- Corporation of the City of Thunder Bay, ON (pop. 107,909)

Community under 10,000

- Town of Redwater, AB (pop. 2,100) WINNER
- Saint-Denis-de-Brompton, QC (pop. 4,305)
- City of Melville, SK (pop. 4,562)

Community of 10,000 to 29,999

- City of Cold Lake, AB (pop. 15,000)
- District of Squamish, BC (pop. 21,157) WINNER
- City of Dieppe, NB (pop. 25,384)
- Town of Okotoks, AB (pop. 29,881)

Community of 30,000 to 99,999

- City of Pointe-Claire, QC (pop. 31,380)

Community of 100,000 or more

- City of Moose Jaw, SK (pop. 34,000)
- Ville de Victoriaville, QC (pop. 47,301)
- County of Wellington, ON (pop. 97,610) WINNER
- City of Nanaimo, BC (pop. 97,619)


County of Wellington Manager of Solid Waste Services Das Soligo (far left) and County Engineer Don Kudo (center left) accept the CPWA NPWW First Time Entry Award from CPWA President-Elect Patty Podoborozny (center right) and CPWA Past President Steve Blayney (far right)
• City of Richmond Hill, ON (pop. 207,846) WINNER
• City of Vaughan, ON (pop. 320,000)
• City of Surrey, BC (pop. 550,000)
• City of Brampton, ON (pop. 650,000)
• Region of Durham, ON (pop. 682,000)
• City of Mississauga, ON (pop. 790,000)

Thanks go out to all participating municipalities for their efforts and outreach during National Public Works Week and for the excellent entries received. Winning municipalities will be presented with awards before their Councils in the fall.

Thanks also go out to the volunteers who served as evaluators for this year’s awards contest: Patty Podoborozny, Sherwood Park, AB; Martin LeBlanc, Shedia Cape, NB; and Rylan Wadsworth, Montreal-Ouest, QC.

CPWA Education Session: CPWA Advocacy and Outreach Update – “It Starts Here”
CPWA President Chris Hamel, Past President Steve Blayney, and consultant Alan Young spoke about the current political landscape in Canada and what the CPWA Board of Directors is doing to support advocacy of public works and infrastructure as a top priority. Chris and Steve also discussed how members and chapters can enhance efforts to increase the voice of public works to policymakers at all levels, including encouraging members to “Tell Your Story.”

CPWA International Infrastructure Round Table
CPWA hosted the leaders of international associations attending PWX for a Monday morning breakfast and discussion of public works issues. Attendees included leaders of the Institute of Public Works Engineering Australasia (IPWEA) and IPWEA New Zealand. APWA was represented by Region 1 Director Gary Losier and discussion was led by CPWA Past President Andrew Stevenson. Attendees shared the challenges and opportunities facing their associations and best practices for infrastructure development and management in their countries.

Anne Jackson can be reached at (202) 218-6750 or ajackson@apwa.net.
APWA 2020 CONFERENCE EVENTS!
On PWX Monday, 70 APWA Chapter Roadeo champions from across North America braved the Seattle rain to compete in the third annual APWA National Equipment Roadeo. Neither the weather nor the offsite location, at T-Mobile Park, deterred their fans and PWX attendees from coming out to cheer on the skilled operators.

This year’s National Equipment Roadeo was limited in scope due to the size of the location. Our APWA Washington State Chapter Roadeo Committee rose to the challenge by creating a mini excavator-only event with two courses, which competitors had to complete as a set:

- **Cylinder Course, run on a CASE CX37C.** The operator needed to run a cylinder through a course of cones while keeping the attached chain on the ground.

- **Balls Course, run on a Caterpillar 303.5E.** The operator needed to remove five different size balls from the top of five stands, placed in a random pattern, and deposit all into a can.

**Winners:**

- 1st Place: Matthew Bishop, Charleston County, North Charleston, SC
- 2nd Place: Scott Hiam, Clark County Public Works, Vancouver, WA
- 3rd Place: Dan Weissenfluh, Clark County Public Works, Vancouver, WA

Congratulations to our winners and thank you to our National Sponsors, CASE and Caterpillar.

— submitted by Lysa Byous, APWA Meeting Planner/Exhibit Manager (lbyous@apwa.net).
PWA recognizes and appreciates the value that our exhibitors bring to PWX. In addition to offering topnotch educational programs in our Exhibitor Solutions Theaters and Technology Solution Theater, to sponsoring a myriad of programs, they bring the latest in new products, services and technology to the front, assisting us all in our work.

APWA celebrates our exhibitors by presenting a Best Booth Award to the three booths that a committee selects during PWX based on design, engagement, product presentation, and booth personnel. Winners for 2019 are:

**Best Booth – Large**
CASE Construction Equipment

**Best Booth – Medium & Best in Show**
Oldcastle Infrastructure

**Best Booth – Small**
Sakura of America

Our New Product Showcase and Theater features the latest to hit the market since the previous year’s PWX. Exhibitors can showcase their product as well as to make a presentation about it. Out of the thirteen new products featured, attendees voted the Allied Forward Controls by Allied Mobile Systems as the Best New Product for 2019.

– submitted by Lysa Byous, APWA Meeting Planner/Exhibit Manager (lbyous@apwa.net).
President Spearman presents the Best Booth (Small) Award to Sakura of America.

APWA President Bill Spearman presents the Best Booth (Large) Award to CASE Construction Equipment.
Diversity and inclusion represented at PWX 2019

PWX First-Timers and New Members Meeting
Sunday, September 8, 2019
Hosted by the APWA Diversity and Inclusion Committee

If standing room only is a great sign of a successful event, the 22nd First-Timers and New Members Meeting achieved that goal! This event is one of the first activities that an attendee can participate in to kick off their PWX experience. By the great sounds of networking chatter, everyone enjoyed a delicious breakfast while Kimberly Strong, the 2019-2020 Diversity and Inclusion (D&I) Committee Chair, welcomed all. In the audience, special recognition was given to guests from the APWA Board of Directors, Past Presidents of APWA, and the D&I Committee members. APWA Executive Director Scott Grayson and 2018-2019 APWA President David Lawry shared their perspectives for a great PWX experience along with the benefits of being an APWA member. The Washington State Chapter Membership Co-Chair, Molly Toy, shared a warm welcome from the APWA Washington State Chapter along with some ideas for the don’t-miss attractions Seattle has to offer.

Prior to a networking ice breaker activity to use for future networking, the attendees considered the primary reasons for attending PWX which include outstanding educational opportunities, state-of-the-art equipment and materials on the show floor along with valuable service providers, and valuable networking across the nation and internationally. Kimberly Strong shared tips and tools to ensure that attendees got the most out of PWX. Kandace Thomas made sure that through a trivia contest about PWX events a couple dozen attendees earned PWX-themed prizes. The competition was fierce but good-natured and the result was that attendees left with a better game plan to get the most out of PWX!

The Committee for Diversity and Inclusion is responsible for advancing diversity issues throughout the association, placing value on all individuals and the different perspectives of those individuals, and promoting the process for all to feel included as part of the whole. If you have an interest in getting more involved at a national or
Diversity Brunch at PWX 2019

This year’s PWX Diversity Brunch made history. We had a record number of people in attendance.

Committee members greeted each guest as they arrived. We were so excited to have incoming APWA President Bill Spearman, APWA Past Presidents, Board members, and APWA standing committee members take time out of their jam-packed PWX schedules to attend our event.

After everyone had a chance to enjoy the delicious food, incoming Diversity and Inclusion Committee Chair, Kimberly Strong, opened the brunch by giving the attendees a very brief overview of the Diversity and Inclusion Committee’s Charter.

Justin Miller introduced our speaker, Mrs. Lora Proctor. Lora is the Customer Service Representative Tech for Tacoma Public Utilities, Customer Solutions Office and the TV Co-Host for Tacoma Report. Lora had a captive audience as she gave an overview of Customer Solutions. Customer Solutions was designed to meet the needs of vulnerable customers from diverse backgrounds including but not limited to seniors, veterans, disabled and limited income.

Programs within Customer Solutions include: Bill Payment Assistance Program – Based on income and household size; Bill Credit Assistance Plan – Customers can receive a utility credit depending on the number of services billed through Tacoma Public Utilities; and the Discount Rate Program – Customers who are 62 years of age and up or an adult receiving qualifying disability income who is an account holder can receive a 30% discount.
The learning objectives from her presentation included how we should recognize that a person’s current situation does not define who they are; we should understand that diversity and inclusion is about all of us; and we should practice self-inclusion using the DIVE IN approach. The DIVE IN approach requires everyone to set aside our prejudices and DIVE IN to assist those we serve with a self-inclusive attitude.

Mrs. Proctor gave us tools to take back to our organizations on how to promote diversity and inclusion. She advised us all to work towards hiring staff that reflect the communities we serve, market our programs and services in multiple languages, and to go outside our four walls into the communities we serve. At the conclusion of her presentation, she was asked and answered an array of thought-provoking questions.

All in all, the Diversity Brunch was a success. We thank Mrs. Proctor for being our speaker. She left us all with something to not only think about but take back to our organizations.

Lora’s most current book is titled Deserved Vengeance: Judgement Day available on Amazon.

If you were unable to make it to this year’s brunch, we look forward to seeing you at PWX 2020 in New Orleans. Special thank-you to APWA staff for making this year’s event the success that it was.

In closing I would like to leave you with a quote from Verna Myers that Mrs. Proctor gave to us: “Diversity is being invited to the party; inclusion is being asked to dance.”

If you are interested in joining the Committee for Diversity and Inclusion, please go the APWA website’s nominations page to nominate yourself or someone else. We would love to have you join our team.

– submitted by Kimberly Strong, Public Information Specialist, City of Chattanooga, Tennessee, and Chair, APWA Committee for Diversity & Inclusion (kstrong@chattanooga.gov)
and realize that stereotyping creates barriers which can deeply affect the individuals in our communities.

As Lora said, “Diversity and inclusion is about all of us, and it takes commitment.”

– submitted by Justin Miller, Asst. Engineering Services Supervisor, City of Durham, North Carolina, and member, APWA Committee for Diversity & Inclusion (justin.miller@durhamnc.gov)

“Dare to Ask: Women and Men Working Together – Continuing the Discussion”

A PWX 2019 educational session coordinated by the Committee for Diversity & Inclusion

Continuing the high-energy conversations from PWX 2018 in Kansas City regarding women and men working together, attendees shared their wisdom at a “Dare to Ask” session surrounding best practices and solutions for challenging workplace situations when women and men work together in public works. Facilitated by members and a friend of the Diversity and Inclusion Committee including Bev Farraher, Justin Miller, Vic Bianes, and Cate Thompson, several scenarios of conflict or disfunction were posed to the attendees. While a facilitator would kick off the discussion with their insights, the attendees were the robust, professional, and high-quality source of knowledge with insights, recommendations, and counsel which increased everyone’s knowledge.

While women and men have worked with, around, and in the vicinity of each other since time began, concerns still exist that women and men have not yet achieved a fully successful level of comfort or productive collaboration working together. When these situations arise, the fears undermine the achievements of both men and women which ultimately reduce the productivity and success of their organizations. If career growth paths are limited by challenges with gender interaction, the
percentage of staff that can contribute effectively to the overall success of an institution is greatly limited.

Of course, applicable laws, human resource policies, conflict resolution skills, advocacy skills, respectful workplace behaviors, and cultural competency skills factor into any interaction. Even with such skills and efforts, there can be substantive and debilitating challenges.

Consider below some of the scenarios about which attendees shared useful insights. Keep in mind that in most of the scenarios the bias could be switched. These discussions were not about focusing on any particular area of diversity but rather to have engaging conversations on how to work through a difficult workplace situation. The committee had a voting chart located in different locations to gather attendees’ feedback on which questions to address and discuss in the session. Scenarios that had the most votes included:

• “In a group meeting, a female brings up an idea and the conversation moves on without acknowledging the idea. Later, a man brings up the exact same idea and everyone acknowledges it and gives credit to the man.”

• “A new female employee hears about some coworkers who are making bets that ‘she won’t last the week’. This makes her feel unwelcome and certainly not included in her new work group.”

Each of the scenarios was familiar to various attendees. Attendees were open with their personal challenges and experiences that they had experienced in the workplace. As the attendees shared their situations, potential solutions were discussed, what course an affected person could take, what actions that upstanders or champions can take to resolve the situation during that moment or at another more appropriate time. Several pieces of wisdom shared were to take note of situations happening around us; take note of our comfort level; become more adept at addressing situations in the moment as effectively as possible; and challenge ourselves to take an active role as an upstander, leader or champion when we have that opportunity.

The overall goal remains the same; it is important to increase knowledge and skills in the workplace, create better understanding of each other’s individual beliefs and diverse backgrounds, and improve communication and interaction amongst all individuals in the workplace. It is also critical to continue to improve the workplaces’/institutions’ practices, policies, processes and traditions to support diversity and inclusion. Keeping these practices in mind will allow opportunities and potential for all to contribute fully to the success of any organization which is the best accomplishment of all.

– submitted by Beverly Ann B. Farraher, P.E., PTOE, Operations Manager, St. Paul Public Works Department, and member, APWA Committee for Diversity and Inclusion (beverly.farraher@ci.stpaul.mn.us)

Women in Public Works: We Lead from the Ground Too!

A PWX 2019 educational session coordinated by the Committee for Diversity & Inclusion

Exciting conversations, learning, and sharing knowledge could be felt in the room as I had the pleasure of facilitating the questions of a panel of six women representing the front lines of public works. The Women in Public Works panel consisted of Shavone Glaser of St. Paul, Minnesota; Sally Hunt of Pierce County, Washington; Carmen

The panelists from the “Women in Public Works: We Lead from the Ground Too” educational session at PWX 2019. From left to right: Justin Miller, Sally Hunt, Lora Proctor, Shavone Glaser, Flecia Torain, Carmen Kasner, and Renee Tyler.
Kasner of San Diego, California; Lora Proctor of Tacoma, Washington; Flecia Torain of Durham, North Carolina; and Renee Tyler of Dubuque, Iowa.

It is estimated that 99% of the frontline operations positions in public works are held by men. This imbalance in the workforce can be attributed to gender stereotypes, perceptions of gender roles, biases, and the lack of education about the benefits of creating a diversified workforce.

Our panelists were able to share from their own experiences the obstacles women often face to advance in the industry, challenges they have faced in the workplace, and offered advice on how to attract more female applicants to frontline positions.

Based on being underestimated on their abilities by their male cohorts and feeling pressure and stress since they did not have the support of their male cohorts, the panelists were able to share testimonials and real-life examples. These included how their male cohorts did not make it a secret and shared with them on how they would not be able to “do the job” or complete certain tasks because they were female. One panelist shared that when she first started working in operations, several men were taking bets that she would not last a month in her position. Well, she proved them wrong and continues to encourage more females to enter the public works department in her community.

The panelists continued to repeat the same theme throughout most of the discussion in that they all had to work harder than their male counterparts to prove to their supervisors that they could in fact perform the assigned tasks. The panelists encouraged other women and male mentors in the industry to create a more inclusive environment in the local town, city and county departments.

Overall, the panelists communicated that the solution is simple—every workplace needs to ensure that all employees are treated as equals and have the same opportunities regardless of their gender, background or beliefs.

The end of the session included a question and answer session from the audience along with several attendees at the end discussing their own experience with the panelists. The immediate feedback from attendees was that they were very thankful for an educational session that addresses these real-life issues. The Committee for Diversity and Inclusion will continue to coordinate educational sessions that address the challenges in the workplace to raise awareness.

– submitted by Justin Miller, Asst. Engineering Services Supervisor, Durham, North Carolina, and member, APWA Committee for Diversity & Inclusion (justin.miller@durhamnc.gov).

2019 PWX EDUCATION SESSIONS

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James Sun believes workplace diversity initiatives are evolving. Many organizations are now recruiting and building teams based on individual team member understandings of various cultures and perspectives. He is intrigued by research that indicates that there is a strong correlation between workforce diversity in gender, ethnicity, culture, and age, and business/organizational performance and value creation. The research shows that diverse teams outperform industry norms by 35%.

During his PWX Closing General Session presentation, James described his childhood where his family was the only Asian family in the neighborhood, recalling instances of racism and its impact on him. He also shared the insights he gained when he became the first Asian male contestant to appear on “The Apprentice” reality show, eventually making it through to the finals. Today, he is a successful millennial entrepreneur and in-demand speaker on diversity and inclusion.

APWA’s PWX audience enjoyed his insights and many felt that he provided a perspective that will have ongoing relevance to how organizations approach diversity and inclusion in the coming decade.

– contributed by Karen Wilson, APWA Conference Education Manager (kwilson@apwa.net)
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On September 30, 2020, the current federal surface transportation law, the Fixing America’s Surface Transportation (FAST) Act (Public Law 114-94), will expire. The FAST Act defines all transportation programs falling under the U.S. Department of Transportation and authorizes all federal funding provided to support these programs. For APWA members, the importance of this law and its programs are key to operating, maintaining, and building transportation infrastructure across the U.S. Therefore, it was determined by APWA’s Government Affairs Committee (GAC) and Government Affairs staff that a policy work group solely focused on identifying and drafting the Association’s policy priorities for the next federal surface transportation law be temporarily formed. The work group was comprised of members from the GAC and the Transportation Technical Committee and supported by the Government Affairs team.

Drafting the standalone policy took over five months. The process began in the early spring of this year and ended with the APWA Board of Directors approving the new “Surface Transportation Reauthorization Priorities” document during its meeting at PWX this past September in Seattle.

APWA’s policy goals for the upcoming reauthorization of federal surface transportation are:

- **FUNDING:** Increase the federal motor fuel tax, and provide a more stable, long-term revenue source for our national and regional multi-modal transportation systems;

- **STREAMLINING:** Eliminate unnecessary, duplicative, and burdensome requirements that delay the delivery of critical transportation improvements; and

- **SAFETY:** Increase the emphasis on safety for all transportation system users.

Specifically, APWA calls upon Congress and the Trump Administration to:

- Increase and index the federal motor fuel tax by 25 cents in the short-term;

- Transition to a vehicle-miles-traveled (VMT) or similar user fee as soon as possible;

- Enact a federal transportation reauthorization bill that is a minimum of six years long;

- Eliminate unnecessary, duplicative, and burdensome requirements that delay the delivery of critical transportation improvements, and;

- Increase the emphasis on safety for all transportation system users.

This new policy document is now being utilized to advocate for APWA’s reauthorization priorities to the U.S. Congress and the Trump Administration, and it will continue to lead our efforts until a new surface transportation bill is signed into law. An ideal scenario is that the next surface transportation reauthorization law is enacted before the FAST Act expires. What are the odds that a new law is enacted on time, or even early? Considering the current political climate, and activities ongoing which have nothing to do with public works and infrastructure, as well as 2020 being a Presidential election year...the odds are unpredictable. Furthermore, history over the past two transportation reauthorization cycles shows us that multiple extensions and transfers from the federal government’s General Fund were needed until policy prescriptions and funding for the Highway Trust Fund (HTF) were agreed upon. That being said, and seeking to be an optimist, investment in our nation’s infrastructure has historically proven to contribute to a healthy economy. Also, broad infrastructure investment has been touted over the past three years as something both political parties support. Of course, finding the enormous level of funding to support the federal investment needed, and how to shore up the HTF that has not seen an increase since 1993 in the federal gas and diesel taxes which primarily fund it, are the uphill climb. As noted above, APWA is calling on Congress and President Trump to increase the federal gas tax by 25 cents over three years, and adopt a vehicle-miles-traveled, or similar user fee, as soon as possible for the long-term health of the HTF.

At the end of July, the Senate Environment and Public Works (EPW) Committee passed a bill, the America’s Transportation Infrastructure Act (ATIA), S. 2302, which calls for a five-year transportation reauthorization and a proposed funding level of $287 billion, a 27.7% funding increase over the FAST Act. The legislation would provide federal funding to programs for highways and bridges and would maintain the traditional formula for distributing 90% of the money to the states.

In drafting the legislation, EPW Chairman John Barrasso (R-WY) and Ranking Member Tom Carper (D-DE) sought to focus their committee’s efforts on providing stable federal funding, and on increasing safety of the traveling public, as well as increasing innovation and resiliency. The legislation also would codify the streamlining measures put into place by One Federal Decision, which aims to eliminate duplication in federal permitting processes and sets a two-year goal.
to complete all environmental reviews and authorization decisions regarding major infrastructure projects.

The EPW bill is the first serious shot this Congress has taken at authorizing federal surface transportation programs. It is important to note that, in the Senate, the EPW Committee does not have full jurisdiction over all transportation programs. The following committees each have jurisdiction over portions of federal surface transportation programs: Senate Finance Committee (funding); the Senate Commerce, Science and Transportation Committee (transportation safety, technology, research, railroads); and the Senate Banking, Housing and Urban Affairs Committee (transit). As of the drafting of this article, S. 2302 was not yet scheduled for Senate floor action, but EPW staff were hoping to have the bill considered by the full Senate this fall.

In the U.S. House of Representatives, it is the House Transportation and Infrastructure (T&I) Committee that has jurisdiction over surface transportation reauthorization, and the Ways and Means Committee that will determine how to fund it. To date, the T&I Committee has not released a reauthorization bill but has hosted multiple hearings on various aspects of any future legislation it may draft. Initially it was believed T&I would be the first of the Congressional committees to move on a reauthorization measure. However, as the year has progressed, it is looking more like T&I will release a bill early in 2020.

Whatever the ultimate pathway for reauthorizing surface transportation programs becomes, APWA will be actively engaged in advocating for our policy priorities and increasing federal funding levels to continue a long history of federal government commitment to our nation’s transportation infrastructure. The public policy priorities approved in September lead that charge and clearly define APWA’s goals.

To learn more about APWA’s Government Affairs activities and the Association’s public policy priorities, please contact Andrea Eales at aeales@apwa.net.
Wireless technology has come a long way since Guglielmo Marconi invented the wireless telegraph network in 1896. Today we are constantly hearing about the race to establish 5G networks.

**History of G**

1980s – First Generation/1G Analog technology allows the first wireless conversations from across the globe. No texting.

1990s – Second Generation/2G Short Message Service (SMS) provides text messaging capabilities. Able to collect and transfer information. Initially slow rate of 9.6 Kb/s and improving to 56 Kb/s.

2000s – Third Generation/3G Multimedia Messaging Service (MMS) is developed allowing devices to send photos and video. Initial speed is 4 times faster than 2G with speeds of 200 Kb/s and improving to speeds of 7.2 Mb/s.

2010s – Fourth Generation/4G LTE can utilize high-speed networks. Still has a great deal of growth potential. Provides speeds of 100 Mb/s.

2020s – Fifth Generation/5G. It is anticipated the network will be 1 to 20 Gb/s and be more reliable. 5G carriers claim cellular data connections will be 100 times faster. A two-hour movie which would previously take 6 minutes to download would take only 3.4 seconds in 5G.

According to Global System for Mobile Communication, at the end of 2018, 5.1 billion people subscribed to mobile services, accounting for approximately 67% of the world’s population. And the world continues to move into Internet of Things (IoT), meaning the interconnectivity of health devices, equipment, appliances, vehicle-to-vehicle, to name a few.
Economic Impacts

In 2017, IHS Economics studied the economic impacts of 5G on the global economy and our domestic economy. Here are their key findings:

- In 2035, 5G will enable $12.3 trillion of global economic output (2016 dollars). That is nearly equivalent to U.S. consumer spending in 2016 and more than the combined spending by consumers in China, Japan, Germany, the United Kingdom, and France in 2016.

- The global 5G value chain will generate $3.5 trillion in output and support 22 million jobs in 2035. This figure is larger than the value of today’s entire mobile value chain. It is approximately the combined revenue of the top 13 companies on the 2016 Fortune 1000—a list that includes Walmart, State Grid, China National Petroleum, Royal Dutch Shell, ExxonMobil, Volkswagen, Toyota, Apple, Berkshire Hathaway, and Samsung.

- The 5G value chain will invest an average of $200 billion annually to continually expand and strengthen the 5G technology base within network and business application infrastructure; this figure represents nearly half of the total U.S. federal, state, and local government spending in transportation infrastructure in 2014.

- Moreover, 5G deployment will fuel sustainable long-term growth to global real GDP. From 2020 to 2035, the total contribution of 5G to real global GDP will be equivalent to an economy the size of India, currently the seventh largest economy in the world.

5G Infrastructure and Local Government Challenges

With such potential economic benefits, industry utilities have been in a hurry to begin installing infrastructure. The deployment of the network is dependent on fiber optics and 5G small cells. 5G small cells are small base stations which communicate back to the main towers. As mentioned earlier, they are designed to provide greater and faster data; however, they also have a shorter range. The purpose of the small cells is also to fill gaps in the 4G network.

CTIA, representing the wireless communications industry, predicts 800,000 small cells will be installed over the next few years.

The GAC has been discussing how to advocate on 5G deployment rights and concerns. Local governments were not prepared for the rapid request to install additional infrastructure within the public rights-of-way.

In an effort to expedite the permitting process, communication companies have been working with state legislatures to pass laws to limit fees and provide utilities rights to install infrastructure within the rights-of-way and on municipal infrastructure such as streetlights and traffic infrastructure.

This has led to the clustering of cells on utility poles. The placement of cells on municipally owned infrastructure also raises the question of liability. While...
not always discussed, aesthetics is also a factor.

Currently, there are at least 20 states that have cell laws.

There are some objections to the installation of the small cell based on concerns of radiation and electromagnetic field exposure. The federal government has not supported the claims to date. Some communities such as Mill Valley, California, have taken steps to restrict the installation through local ordinances. Other communities such as Atlanta, Cleveland, Dallas, Las Vegas, Los Angeles, and New York have already implemented 5G. It appears that many communities don’t object to the expansion of the network but would like a seat at the table. Municipalities have always worked in the best interest of their residents; however, members of our association seem to be indicating the rules are being set for them at the state level.

It is important to keep in mind the importance of our policies at APWA. The APWA Technical Committees work diligently to establish policy priorities to assist in informing all levels of government as to how we all need to integrate to achieve our goals.

**Policy Priorities**

**Emergency Management Committee Policy Priority.** “APWA opposes unfunded mandates pertaining to federal cybersecurity and telecommunication regulations that may be placed upon state and local governments. State and local governments should be consulted regarding any proposed telecommunication modifications that may impact public right-of-way.”

**Surface Transportation Reauthorization Policy.** “Protect state and local level control regarding public works projects, which is key to successfully designing, maintaining, and operating transportation infrastructure. APWA opposes unfunded mandates and any effort to impede the appropriate use of public right-of-way. APWA strongly encourages the federal government and industry to coordinate with state and local governments on transportation and infrastructure projects.”

5G utilizes higher frequency waves which allows for higher data transfer with significantly less delay (50 times less than 4G) but have a reduced range. Publications imply a small cell would be required every 500 feet or on every city block. Concerns are that the higher frequency waves will travel further into the dermis and epidermis as they are in closer proximity. The Federal Communications Commission (FCC) and Food and Drug Administration (FDA) did not find any concerns. However, in 2011, the World Health Organization’s (WHO) International Agency for Research on Cancer cited cellular radio waves as a possible carcinogen in 2011 and is undertaking a “high priority” study. We will have to wait to see the outcomes of future studies.

With the prospect of economic growth associated with 5G and the pursuit of being the first to implement, there is great support behind the next great innovation. Public works may not have been involved in implementation and development of the upcoming 5G network development; however, not unlike most developments in our jurisdictions, we need to understand the needs of our constituency.

Please reach out to legislators and tell your story and work to have a seat at the table. No one understands our communities’ infrastructure, operations, and challenges as well as you do.

Eric Labelle can be reached at (207) 897-6752 or eric.labelle@main-landdci.com.

Source: National Conference of State Legislatures
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When your municipality straddles a provincial border, as the City of Lloydminster does with Alberta and Saskatchewan, building a new wastewater treatment plant is no simple undertaking.

The community’s unusual bi-provincial status requires cooperation on many fronts. Lloydminster Hospital, located on the Saskatchewan side, serves everyone through an interprovincial agreement. A series of special provisions exempts the Saskatchewan side from provincial sales taxes to create a level playing field with Alberta, which has no such tax. And, while Lloydminster is incorporated by both provinces as a single city with a single municipal administration, each side falls within its own provincial riding.

Residents rely on replica survey pins from the 1800s and a simple line down a sidewalk to mark the dividing line because no natural north-south markers exist. The North Saskatchewan River flows nearby but in an easterly direction, itself crossing the border. So, when officials designed the city’s plumbing networks decades ago, they
placed intakes from the river in Alberta and treatment and outflows in Saskatchewan, carefully ensuring each facility met the required specifications of its provincial host.

Fast forward to 2016, when the federal government notified the city that its 32-year-old lagoon-based wastewater treatment plant needed amending in order to improve the quality of effluent and meet evolving climate change adaptation standards. City politicians set their sights on a new mechanical system and braced themselves for yet another round of complicated multi-jurisdictional negotiations.

Under the lagoon system, which will remain in place until its replacement is completed on an adjoining city-owned site, effluent travels through a series of three lagoons before its discharge into the North Saskatchewan. Cold-water nitrification and full aeration features, added over time to enhance bacterial activity, weren’t enough to stave off the need for an eventual overhaul, and Mayor Gerald Aalbers says a doubling of the population over the last three decades to roughly 31,500 and further plans for growth hasten the need for change.

Aalbers wasn’t yet on council when politicians considered public-private partnership funding and initiated a series of grant applications to the three upper-tier governments. But he says P2 and P3 models didn’t sit well with local residents. “We would have given up our infrastructure as collateral to another company to operate and would never see owning it ourselves,” he explains. “People felt it was important to have direct control.”

Following a municipal election in 2016, a newly elected Aalbers and his team settled on a municipally owned project. With an $81.5 million preliminary budget, the federal government stands to contribute $24.2 million through matching infrastructure grant programs that have Alberta and Saskatchewan providing $12.7 million and $12.1 million respectively. That will leave the city covering the remaining $32.5 million.

“We’ll have to borrow money against this eventually, though we don’t know how much yet,” Aalbers says. “That will depend on the final tab for the project. But we have the authority in place to do that so we can move forward.”

Reaching this point wasn’t easy given the multiple jurisdictions involved. With the Conservatives replacing the NDP in Alberta earlier this year, the city has effectively had to work with two governments in that province. “We ended up having two ministers of municipal affairs in Alberta and three in Saskatchewan over a three-year time frame,” Aalbers says, describing considerable back and forth to bring all parties on board. “I’ve lost track of how many trips I’ve made to Regina and Edmonton.”

While pursuing provincial commitments, the city also had to respond to the Canadian Department of Environment and Climate Change directive to have the new plant operational by 2020. The conundrum, Aalbers explains, is governments insist money can’t be spent without project and financial approval. “Our community was caught in the middle. We have a directive that says we have to build the plant and get our wastewater treatment into better condition, but at the same time we’re waiting on another government department to give us the grant funding and approval to move forward. We’re damned if we do and damned if we don’t.”

The realization that complex projects take time to plan has, thankfully, prevailed. With approvals, financial commitments and initial plans in place, the city has issued requests for proposals and expects to line up contractors and vendors and have key equipment and prefabricated materials onsite or available by late 2020.

Terry Burton, Lloydminster’s director of engineering and planning, says he expects the new system will almost certainly fall into the mechanical catego-
While a membrane plant is a strong possibility, a final decision will be made once actual proposals are in hand. “The City has identified key requirements for the facility to meet. This includes more stringent treatment requirements to future-proof the facility as much as possible,” Burton says. “We’re proceeding with an integrated project delivery method where we’ll collaboratively design a treatment system that meets environmental regulations and the critical objectives the city has. That collaborative design process is basically starting from scratch, so they’ll look at all the options and at the current site and conditions and come up with something that meets all those objectives.”

Regardless of which technology is selected, proponents face at least minor technical challenges. “Integrating with the existing system will be the biggest challenge that we face,” Burton says, adding these same situations also present opportunities.

For now, preparatory work continues. The city is proceeding to de-sludge its lagoons one last time, for $3 million, to ensure the old system functions optimally until it’s replaced.

The city is also in discussions with neighbouring municipalities to explore the potential for regional water and wastewater servicing agreements, Burton says. Ultimately, Burton sees the new system as representing one less worry in terms of Lloydminster’s growing infrastructural needs. “This is a big win for us,” he says.

Mayor Aalbers says, meanwhile, it’s “a distinct possibility” he will seek reelection in the 2020 municipal election, and he looks forward to seeing the project through to completion.

“It’s always nice to see something start to finish,” Aalbers says. “We don’t spend $80 million dollars on a regular basis on any one item, so this will be a project that carries us forward.”

*Saul Chernos is a Toronto-based freelance journalist and frequent contributor to Water Canada.*

"That collaborative design process is basically starting from scratch, so they’ll look at all the options and at the current site and conditions and come up with something that meets all those objectives."

~ Terry Burton, Director of Engineering and Planning, Lloydminster
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Removing the risk

Considerations for effective risk management of P3’s

The delivery of P3 infrastructure projects can be negatively impacted if risks are inappropriately assigned or under-managed throughout the lifecycle of a project. Truly effective project risk management requires a strategy that can also accommodate the uncertainty and variety of risks projects can be exposed to from the cradle to grave of a project, regardless of size.

Given this, it is never too early to start talking about, analyzing and mitigating project risks as they inform the most important discussions on large and complex infrastructure projects, regardless of the type of procurement. The lack of management attention to cost, budget, schedule, and scope risks is the Achilles heel of project management. In fact, risk conversations should happen as often as possible and in as many planning streams as possible to ensure the sponsor is soliciting and receiving broad input from all stakeholders to inform the project’s risk register. For example, potential risks (and thoughts on how to best profile and mitigate them) can be identified through public consultation and engagement efforts, deliberations with senior executives and/or elected leaders, and as part of market soundings. Doing so allows sponsors to get a broader perspective and clarity on the project’s risks as well as evolving market trends on risk tolerance as they relate to the project’s desired outcomes. Limiting the development of risk registry to only inputs from the project team is not a recipe for project success.
Every project is unique, and the goal of every sponsor is to design a procurement with strong risk protection and a risk regime that results in best value for taxpayers. This is achieved when risks are assigned to the party best positioned to manage, understand and accurately quantify them. When it comes to the task of assigning appropriate risks to respective parties, there is often good alignment between sponsor and contractor as it is in the interest of both to keep the project on budget and on schedule.

Further, opportunity and risk must be assessed together—so it is important to focus on both project risks and opportunities, as opportunities such as the potential for fast-tracking projects can often become a means to mitigate potential risks. All too often, project sponsors tend to focus on risk and tend to spend very little time assessing opportunities. Every opportunity not assessed is a potential threat to a project down the road. The use of incentives to encourage contractors to accept the risks the sponsor does not wish to retain can be a powerful tool during the procurement phase to achieve project objectives. For example, pricing options can be used to incent contractors to move from a shared-risk approach to taking on full risk in circumstances where it makes financial or strategic sense.

Just as the scope, performance and project outcomes need to be well-defined, risks too need to be clearly identified with clear and concise contractual obligations in place to address responsibilities with respect to scheduling and completion dates, financial payments, force majeure (unforeseeable and/or uncontrollable circumstances that could impact cost and schedule), project milestones, and operations and maintenance. This means sponsors need to develop and track responsibilities for managing and mitigating all risks and opportunities, regardless of ownership, and monitor them based on an analysis of both qualitative and quantitative risks—the whole time keeping in mind that risk management is an ongoing process, not a static one, with strategies, plans and dedicated resources in place from project initiation right through to close-out.

The vast majority of risks/claims on infrastructure projects tend to occur in the following eight areas: utility relocation and coordination; geotechnical risks; contamination; permits and approvals; bundled projects; scope changes; property-related issues; and construction interfaces with other contractors. The following discusses recent approaches that have been taken to develop risk profiles in the first two areas listed above: utility relocation and coordination, and geotechnical risks.

It is not only important to discuss potential risks broadly and early on in the project, but it is also important to launch early investigation works to inform the development of a project’s risk profile. Robust geotechnical investigations and subsurface utility engineering (SUE) are two critical tools to help determine whether risks can be efficiently retained, transferred or are
better addressed through early works programs that can de-risk certain project elements prior to contact award. P3 procurement models are evolving, and it is becoming increasingly obvious that the contractors bidding on these large and complicated projects cannot efficiently take on the full scope of risks related to utilities. Another tool that is being more commonly used to create a more effective risk regime for utilities is a Utility Baseline Report (UBR). As contractors are dependent on third-party utility providers to self-perform utilities work (including provincially/federally regulated private utilities) to clear utility conflicts, they are (understandably) not prepared to fully accept an unlimited schedule risk of this nature. Therefore, it is becoming common practice to institute a UBR process, which transfers some of this schedule risk to the project sponsor.

In specific terms, a UBR process includes listing all utility projects that support the project and providing the up-set durations typically required to have these projects completed. If these timelines are exceeded such that they materially impact the contractor’s schedule, then the contractor may be entitled to schedule relief and compensation (on a cost-sharing basis depending on the duration of the delay). In addition, UBRs typically include a mislocated/unknown utility’s regime to address schedule and risk costs that contractors may otherwise estimate and carry within their respective bids. Conflicts with existing mislocated and unknown utilities can have a significant bearing on projects, particularly in urban settings. Often, it is not the actual cost for protecting and/or relocating the impacted utility, but rather the delay for executing the unanticipated work, that can have the greatest financial impact. With the contractors not entirely in control of these variables, they perceive this as a significant risk exposure that would otherwise come with considerable additional project costs in the form of risk pricing. With schedule relief and potential compensation on a cost-sharing basis informed by a UBR, these risks can be priced in a more accurate and efficient manner.

For geotechnical risk, it is possible for sponsors to successfully transfer all geotechnical risk to contractors provided the geotechnical investigations are completed in accordance with industry best practices. These investigations are not only necessary to guide preliminary designs, they also help reduce project risks tied to contingency budgets for unknown or unforeseeable subsurface and groundwater conditions. But even with more robust and standardized data, one size does not fit all, and in some cases, optionality can be structured in bids whereby potential contractors can bid and receive procurement incentives in the open market period to take on full geotechnical risk. Whether the risk is fully or partially transferred to proponents, if there is an error in the geotechnical data reports that can be validated, the contractor may still be entitled to compensation as per the terms of the contract.

In fact, when addressing risk, sponsors should let the principles of appropriateness and reasonableness guide the way. And while fully transferring risks to the contractor through RFP incentives can work, it is not a panacea for risks the sponsor does not wish to retain.

With contractors becoming increasingly skittish about taking on more risk, new appropriate and reasonable risk-sharing approaches will need to be established, as many high-profile cost and schedule risks borne by contractors in the past may not be tolerable or cost-efficient to transfer as the market continue to evolve. And establishing these new approaches will require starting many and multiple open, transparent and frank conservations about risk from the project’s outset.

Charles Wheeler is the Vice President of Transit for Comtech Group.
Applications are now being accepted for the 2020 Jennings Randolph International Fellowship Program funded through the Eisenhower World Affairs Institute.

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wo organizations were looking for the same solution. All it took was one Google search for them to find each other. The rest is history.

It started in 2014. Dr. Brian Branfireun, a Canada research chair at Western University, was in need of a better way to collect data. With unpredictable weather and limited resources hampering his ability to collect valuable data from the water, he hoped for a solution that would put less strain on his limited resources.

“The research that catalyzed this was collaborative work I was doing in the Northwest Territories, being led by my colleague at the University of Waterloo, Dr. Heidi Swanson,” said Branfireun.

“I was doing work on water chemistry and she was doing work on food webs and lake ecology, and connecting those dots together. We were working on a number of small lakes in the Northwest Territories and doing some of this water chemistry characterization. We recognized the challenge, and in some cases inefficiency, of making just single measurements in a lake and sort of crossing your fingers that that was reasonably representative.”

While on one of his northern research excursions that year, he remembered a conversation from a few years earlier. He had met Natalia Lecki, a Western graduate who had recently started working in sales at Hoskin Scientific. Dr. Branfireun asked Lecki what the cool new technology was, and she mentioned the i3XO
EcoMapper AUV (Autonomous Underwater Vehicle) from YSI.

He reached back out to Lecki and, after learning more about the technology, worked with his colleague from Waterloo to pursue a grant to purchase the EcoMapper. They were successful in getting the funding, and began planning to purchase the AUV.

Elsewhere in Ontario

David Sweetnam, executive director of Georgian Bay Forever (GBF), was facing a similar issue to Branfireun. Sweetnam, a biochemist by trade, would hop in the boat to travel to different areas of Georgian Bay, collecting samples in 12 different areas in order to obtain data about the water. The process provided very limited information, was time consuming, and was expensive.

Sweetnam did some research of his own and discovered the AUV, and the potential it provided to secure real data that could show important aquatic trends throughout Georgian Bay. In early 2017 he began thinking about the idea further and sharing it with members of GBF team. He had seen health care foundations successfully rally fundraising efforts around a single purchase, like an MRI, and thought the AUV could provide a similar opportunity. Based on the purchase price (around $350,000 with additional technologies included), Sweetnam estimated it would take the nonprofit organization around five or six years to raise the capital. And that’s exactly what they were working towards in August 2018.

Running out of time

By the summer of 2018, Branfireun and his colleagues were having a dilemma. They had obtained financing for the AUV, but based on a fluctuating dollar and a lack of additional capital, they found themselves short of the amount needed to purchase the AUV that had all of the desired sensor technology included, invaluable to the research they wanted to conduct.

So Branfireun went to his computer, hoping that a Google search might uncover a potential collaborator, one who could provide the missing capital to order the enhanced version of the AUV. And thanks to some great online storytelling, Georgian Bay Forever popped up in his search.

Seeing that GBF was already in the midst of a capital campaign to purchase an AUV, Branfireun immediately reached out to Sweetnam to talk about the potential to work together on the purchase. Sweetnam saw it as a chance to work with leading academic institutions and have access to the technology several years earlier. And by August 2018, they had raised a decent amount of money; enough money to help purchase the enhanced unit. Quickly the two worked with their respective partners, and were able to strike a deal to work together. By the end of March 2019, just a few months after their first conversation, Branfireun took delivery of the EcoMapper.

The EcoMapper will collect invaluable data that they seek to understand water trends in the respective regions.

Sharing the opportunity

Both Georgian Bay Forever and the academic consortium will have their opportunity to use the EcoMapper to collect the invaluable data that they seek to understand water trends in the respective regions.

“One of the biggest holes that exists on the Canadian side is the detailed coastal bathymetry,” explained Sweetnam. “A digital elevation model is a computerized simulation of the physical space that we’re in. And when you have a computer simulation of that, you can play around with water levels to see, say, what would happen if the water levels went up to the peaks or if they dropped to the all-time lows (from 2013) again.”

GBF will also use the additional technology included on the enhanced EcoMapper, such as the high resolution side scan sonar imaging, to be able to collect data on things like water flow patterns and volumes of blue-green algae. And because the vehicle can be programmed to follow the same route in a given body of water any time it is placed in the water, the data points that come back can be from the exact same location year after year, given accurate data on changing trends in a given body of water.

Branfireun, Swanson and their additional academic partners, including Wilfrid Laurier University, will take the technology to northern Canada, where
they will conduct more complete characterizations of small, remote lakes, as well as efficient spatial surveys that will produce rich data on water quality.

The EcoMapper has also opened the door to new research opportunities. The technology will be taken to the Grassy Narrows region of northern Ontario where it will be used to provide valuable data on water body characterization. It will also be used in the Yukon, where the technology can help map groundwater interactions with large, alpine lakes.

Thanks to a single Google search, we will soon have a better appreciation for the health, condition, and shape of several bodies of water throughout Canada.

Andrew Macklin is the managing editor of Water Canada.
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The 6 Must-Do’s of Media Relations

Emily Dowsett, Government Affairs Media Manager, American Public Works Association, Washington, D.C.

1. Take and share pictures
Pictures put a “human face” to your organization, so remember to snap pictures of your team out in the community, working for the greater good. When you’re out in the field, take photos of projects underway! Post them to Facebook to keep your community updated on all the progress you’re making. You may see these colleagues, projects, and jobs every day, but members of your community may see these posts as a fascinating inside look. And if you’re not on social media already, get there. I promise that, when done correctly, it’s worth it for your business and your reputation in the community.

2. Reach out to your local media (now)
The time to build relationships with your local media outlets is now—not when something has gone wrong and you need them on your side! Reach out to local reporters who cover public works to introduce yourself and your operation. If you let them know what your organization does and that you’re willing to serve as a subject matter expert, they’re more likely to give you a call when the need arises.

When you’re out in the field, take photos of projects underway! Post them to Facebook to keep your community updated on all the progress you’re making.

3. Use press releases sparingly
A good press release can be instrumental in gaining valuable, earned media placements for your organization. That being said, not everything is “press-release worthy,” as I like to say. Once upon a time, press releases were one of the few ways a company could get information out to the masses. That simply isn’t the case anymore. With websites, newsletters, blogs, and social media, there are many other channels to convey news and information. Use press releases sparingly. Each time you send a press release to a reporter, you run the risk of becoming a nuisance and causing them to unsubscribe. Only send a release that you truly believe is truly
newsworthy information, and only send it to reporters who you know will be interested.

4. Have a crisis communications plan in place
When a crisis strikes, you want to have an action plan ready to go—now. This will allow you to efficiently and effectively handle the fallout, at least from a public relations perspective. Assess potential risks and identify your crisis communications team now. Figure out who will speak on behalf of your organization and what the message will be. Develop holding statements that can buy you time and have a media outreach list ready to utilize. The more prepared you are now, the easier it will be when you’re really in the thick of it.

5. Practice good media etiquette
Good relationships with members of the media are crucial to your organization’s media and public relations efforts. Whenever you receive a media inquiry, be sure to respond in a timely fashion. If you don’t, they’ll find someone else who will! Also, be factual. Always stick to the proven facts. Unless you are speaking as a private citizen (and not representing your organization), avoid providing your opinion. And remember to be polite. It should go without saying, but in this instance, it’s of the upmost importance. Finally, follow up. If you don’t know an answer on the spot, or want to provide additional information, follow up with the reporter. Your effort to help them and their story will be much appreciated.

6. If you don’t know, ask someone who does
Reach out to your APWA media guru. We’re here to help and happy to share our knowledge.

Starting next month, this column will be penned by APWA’s new Public Affairs Manager Charles (Charlie) Arena, who also welcomes any and all media-related questions.

This was Emily Dowsett’s last article for the Reporter. APWA thanks Emily Dowsett for her contributions and wishes her the best on her new endeavors. Charles Arena has been hired as APWA’s Public Affairs Manager. He can be contacted at: carena@apwa.net.
Building your team

Wilfrid Nixon, Ph.D., P.E., PWLF, President, Professional Snowfighters Association, Iowa City, Iowa; member, APWA Winter Maintenance Subcommittee

If you drive around the U.S. much, you have no doubt seen the trucks that carry the slogan on their back—“Our greatest asset sits 80 feet ahead”—indicating that for that trucking company, their operators are the most important part of their company. In a similar way, our plow operators are the most important part of the winter maintenance operation of any agency.

This raises a very troubling question for many agencies today. We have historically low unemployment and there are more vacancies in the workforce than there are people looking for work which means that most people looking for jobs will have multiple opportunities available to them. The troubling question for agencies is, “Why should I come to work for you?”

There is a second, related question that agencies face: “Why should I keep on working for you, when there are other options for me elsewhere?” Put together, agencies are having to answer the question, “How do we become (or remain) a place where people want to come and work?”

Finding a good answer to this question is complicated by there being five generations in the workforce today (an unusual situation) and each of those generations is motivated in their own unique ways. Of course, generalizations about whole generations are not necessarily applicable to individuals, but the important thing for each of us to consider is that our colleagues may well not be motivated in the same way that we are, and that gestures or benefits we appreciate might not be equally appreciated by others in our organization.

Younger workers in particular are considered to be much more focused on attaining work/life balance than those of us who are older. The practical implication of this is that younger workers may want to trade overtime for time off, rather than taking the money, and in turn this can create a challenge for agencies—the work still needs to be done, but some of our workers may value time away from work more than “time and a half.”

So, what can agencies do to manage these new realities in employee expectations? The first step is acknowledge-
ment—an agency cannot make any progress toward fulfilling new expectations if the agency does not accept that the expectations have changed. The primary challenge here is for those of us in older generations—we may not value those things that many of our employees do consider important, and as a result, we may not take their concerns seriously. That sort of situation is only going to lead to problems!

The second step is to find out what our employees want, on an individual basis. If not everybody wants the same thing, we need to know that, and we need to know what each person would like to see in their work experience. That means discussions with each employee—yes, I know that is obvious, but it is perhaps not the sort of thing that we always do in winter maintenance operations.

If we get through these first two steps, we may now have some ideas what it is our employees want. The third step is figuring out how to make these options possible, without creating issues of unfairness or inequity. The degree to which we can maneuver may be limited by employment contracts, and there is of course the danger that having taken the time to listen to what people would like to happen, we create disappointment if we cannot give them what we want. At this point it is really important to empower our employees to come up with ways of creating equitable solutions. We have to be careful in doing this to make sure that all our employees have a voice in the discussions, and we also have to note that we will not be able to make everybody happy on every issue. But hopefully we can create enough flexibility that our five generations of workers can each get some of what they would most like out of working for our agency, even if not everyone gets everything.

This topic of generational differences has come up a lot this year at various meetings, and in presentations at those meetings (for example at the North American Snow Conference, at PWX, and at the Western Snow and Ice Conference). It is clearly a matter of great concern for many of us in public works, not just those of in the winter maintenance part of public works. My thoughts on this have been influenced by what I have heard from my colleagues and friends on this topic (in particular, from Sarah Schacher from Alaska, and Bret Hodne from Iowa), so any good ideas in the above are almost certainly theirs. Any bad ones are most likely mine!

Wilfrid Nixon can be reached at (319) 594-4447 or at wilf@psassoc.org.

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PW TECH MANAGEMENT: LEADERSHIP IN NEW TECHNOLOGY

Achieving the goals of a smart community

The foundation of a truly smart community requires a broad vision and policies to enable collaboration and coordination

Tina Quigley, Chief Executive Officer, Regional Transportation Commission of Southern Nevada, Las Vegas, Nevada; Gregory Baird, MPA, President, Water Finance Research Foundation, Salem, Utah, and member, APWA Engineering & Technology Committee

Across the country, local jurisdictions and government agencies are deploying smart city solutions and technologies to address the challenges they face. Yet, without a coordinated vision and plan, implementation of the solutions could occur in piecemeal fashion, limiting their success and scalability; ultimately, preventing the entities from reaping the technologies’ full benefit.

Many public works departments are feeling overwhelmed by the complexity of smart city initiatives. By definition, the three basic layers of smart cities efforts include the technology used to gather data; the translation of raw data into actionable items; and how cities, companies, and the public use the information. While there are varying degrees of “smart,” the overall goals are the same: to increase the operational efficiency, to share information with the public, and to improve the quality of government services and the citizens’ quality of life.

In Southern Nevada, collaboration has long been a tenet of the region’s smart community development. Local municipalities and government agencies enjoy a successful track record of working together to implement smart solutions that cross jurisdictional boundaries. Creating a unified vision for the future of smart community development in Southern Nevada was the logical next step to ensure technological solutions could be seamlessly integrated to effectively address community needs and to establish a clear governance structure for sharing data.

Given its role as Southern Nevada’s transit, traffic management and transportation planning agency, as well as serving as the administrator for Southern Nevada’s regional plan to build complete communities, the Regional Transportation Commission of Southern Nevada (RTC) convened the six local jurisdictions to create and adopt a unified “Southern Nevada Smart Community Vision.” It provides a blueprint for coordination and cooperation among the RTC, local entities, and other public-sector agencies as they work with various private industry companies to leverage advanced technology with the goal of building a smarter, more connected Southern Nevada.

The Vision incorporates the concepts of safety, inclusivity, user-friendliness,
and resource-efficiency to achieve a regional vision of livability, workability, and sustainability. It outlines specific goals including increasing public sector efficiency; facilitating economic growth by improving workforce development; deploying innovative and effective infrastructure; utilizing enhanced data to better deliver products and services; and improving quality of life by increasing access to resources and services.

To achieve these goals, the Vision calls on the transportation, energy, public safety, water resource management, and building construction sectors to work together through collaborative and inclusive partnerships with public and private stakeholders. These partnerships will assess challenges, needs, and opportunities to develop tailored solutions and enable the effective use of data through innovative and cooperative approaches.

Adopted in October 2018, the Southern Nevada Smart Community Vision has served as the foundation for the continued development and implementation of advanced technology solutions that enhance public services and improve quality of life.

One successful smart collaboration project that spans multiple public agencies is the use of data from Waycare. The technology reports the location of crashes in real time by analyzing data from a variety of sources—such as in-vehicle navigation devices, roadside traffic detectors, telematics providers, Waze and similar apps, and social media outlets. Utilized at the Southern Nevada Traffic Management Center run by the RTC, data shared to help improve other processes and services, such as traffic management and public safety.
Nevada Department of Transportation (NDOT), and Nevada Highway Patrol (NHP), Waycare has enabled the entities to identify and respond to highway crashes 12 minutes faster on average. Incident data can also be combined with predictive analytics to identify areas at higher risk for dangerous driving conditions. With this information, NHP can proactively deploy traffic patrols and abatement efforts to help prevent crashes. On the stretch of freeway where the program was deployed, primary crashes have been reduced by 17 percent.

Waycare is just one example of the many exciting technology partnerships underway in Southern Nevada to improve safety and efficiency. It also epitomizes the coordination espoused by the Southern Nevada Smart Community Vision.

Moving forward, the Southern Nevada Smart Community Vision outlines the foundation for how Southern Nevada jurisdictions and government agencies will work together to develop and leverage smart, connected technologies that can solve challenges facing the community and ultimately enhance the quality of life in the growing region.

One of the biggest drivers of smart community efforts is the urbanization and sustainability of our cities. According to the International Organization on Standards, “53 percent of the total world’s population resides in cities. It is estimated that 70 percent of the world’s population will be living in cities by 2050. This means the role of cities in enabling more sustainable futures is now more important than ever.” (https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/37120_briefing_note.pdf)

Many municipalities and utilities are already engaged in developing “smart” initiatives to decrease costs and increase operational efficiency to provide citizens with sustainable services. To do this, they have recognized that managing their assets through a GIS-centric platform is critical.

For utilities, nearly 90 percent of all assets are location-based. The Esri GIS geo-database is a perfect place to build an authoritative asset registry and store asset attributes. A “smart,” computerized maintenance management system (CMMS) provides the engine to gain new insights into public works operations. A GIS-centric CMMS offers powerful asset analytics tools to help plan and schedule work; create and refine budgets; and identify and assess high-risk assets. Workload balancing and other smart apps can extend the efficiencies into the field, leveraging a mobile workforce by combining accurate cost data with asset work activities to predict future budgets and determine cost projection, productivity, and optimal crew size. This framework defines and tracks key performance indicators (KPIs) for an asset manage-
ment strategy. These KPIs are calculated using GIS attribute information, maintenance data, and management strategies defined by the user, providing powerful operational insights for risk-mitigation efforts.

A smart GIS-centric initiative also integrates central business functions by connecting third-party systems. This element of smart cities extends the reach of a CMMS by connecting to a financial system for employee and vendor assignments and labor rates; closed-circuit television (CCTV) pipe inspection management data; customer service systems (CIS) with service requests and inspection data; fleet management’s preventive maintenance schedules; pavement management’s cost tracking and condition updating processes; and utility location services and supervisory control and data acquisition (SCADA) systems triggering sensor-based actions for operational runtime rather than calendar-based activities—all of which reduces waste and increases efficiency throughout the process.

Smart platforms are also expandable. A smart community can migrate these benefits and cost efficiencies from water and sewer utilities to a city’s public works, parks and recreation, public safety, and other municipal divisions. Asset conditions, accurate work order activity, and cost data can be used to generate daily and yearly budgets, justifying budgeting and staffing needs. Smart reports can more easily communicate risk and more accurately prioritize capital improvement funding. Smart utility efforts transcend traditional silos and integrate public asset management practices to provide the overall platform of gathering, analyzing, and taking action to ensure the sustainability of public assets and citizen services in the most cost-effective manner.

Broad-based smart community efforts to increase operational efficiency, share information, and improve the delivery of government services and citizens’ quality of life require creating a vision. Furthermore, it requires policies to enable collaboration and coordination among multiple organizations and across jurisdictional boundaries. Today, technology knows no boundaries. It is imperative that government agencies, local municipalities, and the private sector work together to develop the programs and processes to leverage smart solutions to achieve the ultimate vision and goals of a truly smart community.

Tina Quigley can be reached at diaza@rtcsnv.com; Gregory Baird can be reached at (801) 910-1172 or greg.m.baird@agingwaterinfrastructure.org.
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Global. This is a word that we hear more and more often whether it be in the news or during the Opening General Session of the APWA PWX 2019 in Seattle, Washington. Advancements in technologies are developed across the globe. Human problems do not recognize borders or boundaries.

Collaboration. We work together to solve challenges in our communities. We reach out to work with other professionals or specialists in their area of expertise to work as a team moving toward a common goal. We work to find solutions to human problems across the globe.

During PWX 2019, attendees from 14 countries around the world came together to achieve another successful event hosted by the Washington Chapter. Before attendees arrived in Seattle, the APWA International Ambassadors (Ambassadors) were reaching out to international attendees to welcome them and answer any questions that they may have about their upcoming PWX attendance. The Ambassadors and guests gathered before the Sunday PWX Opening General Session to exchange professional or social contacts.

On the Saturday before PWX kicked off, international partners and mem-
bers of the APWA International Affairs Committee (IAC) met to discuss the 2019/20 work plan during the annual face-to-face committee meeting. International partners from Gobiernos Locales por la Sustentabilidad, Secretariado para Mexico, Centroamerica y el Cari be (ICLEI), Nordic Partnerships (Finland, Sweden, Denmark, Norway, Iceland), and the Institute of Public Works Engineering Australasia (IPWEA Australasia) attended the meeting to talk about international exchange of technologies and best management practices. Throughout PWX, IAC members continued conversations with APWA Technical and Standing Committees about upcoming collaboration opportunities, including partnering with the Committee for Diversity and Inclusion, the Center for Sustainability, and the Solid Waste Management Committee on APWA Reporter articles throughout the next year.

The Jennings Randolph International Fellowship Program was established at the Eisenhower World Affairs Institute in May 1987. It is administered by APWA and provides participation at a public works conference of one of APWA’s international partners and a public works study tour in that country. Three Jennings Randolph International Fellows (JR Fellow) presentations were held during PWX, including:

• In 2019, Nora Daley-Peng explored how Finland is shifting away from auto-dependency by offering a diverse menu of mobility options that are so economical, convenient and enjoyable that people will naturally choose them rather than driving their personal vehicles.

• Joanne Zhang, P.E., CCM, studied the ways that Australia fosters a culture of innovation in public works and its effect on attracting and retaining talent and on capital project delivery. In 2017, her goal was to provide insight on
how Australia has implemented successful initiatives to foster a culture of innovation with limited resources and to inform an effective innovation strategy for American public works.

- Helena E. Sullivan met with the Swedish roadway agency Trafikverket in 2018 to learn more about its bridge repair and inspection program. She visited several ongoing and recently completed bridge construction sites to learn about typical construction materials and methods.

Many past JR Fellows attended PWX and shared their stories about how impactful their study tours have been. APWA is currently accepting applications for the 2020 Jennings Randolph International Fellowship Program. For an opportunity to be considered as one of the next JR Fellows to study abroad while focusing on top technologies, visit the APWA website at www.apwa.net/JRFellowship.

The PWX 2019 International Reception, hosted by the Washington Chapter, was held at the Hard Rock Café. International attendees and ambassadors enjoyed an evening of socializing and dancing to the universal language of music.

Many APWA members, past JR Fellows, and international guests joined 2019 JR Fellow and Washington Chapter member Nora Daley-Peng on a bike tour around parts of Seattle. Participants downloaded the JUMP app to rent a red bike or else paid for a Lime green rental bike to enjoy the tour.

Keep an eye out for international perspectives as you enjoy other APWA Reporter articles, or apply to be one of the next JR Fellows to go on a life-changing public works study tour. APWA members can relate and exchange technologies or best management practices with those nearby and with those from around the world.

Tracy L. Warner can be reached at (515) 239-5163 or twarner@city.ames.ia.us.

APWA members can relate and exchange technologies or best management practices with those nearby and with those from around the world.
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CISA and APWA

On October 2 in Washington, D.C., APWA Executive Director Scott Grayson and Bradford Willke, Acting Director for Stakeholder Engagement & Cyber Infrastructure Resilience at the Department of Homeland Security’s (DHS) Cybersecurity and Infrastructure Security Agency (CISA), discussed how CISA and APWA can expand the working relationship, particularly as it relates to the protection of our nation’s critical infrastructure and the importance of mutual information sharing on best practices in that area. Pictured are Scott Grayson (left) and Bradford Willke.

Western Snow & Ice Conference and National Snow Roadeo

APWA Executive Director Scott Grayson attended the Western Snow & Ice Conference and National Snow Roadeo in Loveland Colorado, September 25-27. Pictured are Scott Grayson (left) and Fabian Owens, Street Maintenance Worker, City of Gardner, Kansas, and third-place winner in the National Skid Steer Event.
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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In November each year, we celebrate the tremendous value that the nation’s critical infrastructure and all its supporting pieces bring to the country’s way of life, economy and national security—including the Emergency Services Sector.

The Emergency Services Sector (ESS) represents the nation’s first line of defense in the prevention and mitigation of risk from both intentional and unintentional man-made incidents, as well as from natural disasters. Encompassing a wide range of emergency response functions, the Emergency Services Sector saves lives, protects property and the environment, assists communities impacted by disasters, and aids recovery from emergencies. The first responder community comprises an estimated 4.6 million career and volunteer professionals within five primary disciplines: Law Enforcement, Fire and Rescue Services, Emergency Medical Services, Emergency Management, and Public Works.

This November also marks the first anniversary of the Cybersecurity and Infrastructure Agency, or CISA. Created to “Defend Today, Secure Tomorrow,” CISA helps the nation’s critical infrastructure prepare for and mitigate 21st century threats and beyond—from attacks on crowded public venues like houses of worship and festivals, to cyberattacks on critical infrastructure, to efforts by hostile nation-states to influence the democratic process.

The risks are complex and made more so by the fact that many of our most critical functions are interdependent. For example, the Emergency Services Sector is interdependent with things like power and communications, so if one of those systems fails the impacts could cascade across multiple sectors in a region. Any number of threats could cause a system failure: aging and frail infrastructure, a cyberattack, a severe weather event...or an insider threat from a disgruntled or careless employee. Even the supply chain can pose...
a threat; organizations must be more aware of how secure their vendors are and where there may be weak links in the supply chain.

As industry and government partners work to understand their risks and how to prioritize their security resources, CISA is there to support them through training, information sharing, technical assistance, emergency communications, and analysis to help decision makers understand the context around key threats.

CISA shares information through several channels. The sector partnership structure provides a formal means for private sector and other non-federal partners to self-organize as a sector-specific council that can provide recommendations and collaborate with the government on policies, guidance documents, evolving threats and other critical joint efforts intended to help the sectors become more resilient. Through the Protected Critical Infrastructure Information (PCII) Program, industry partners can voluntarily submit sensitive critical infrastructure information with CISA, while maintaining legal protections for the information that is shared.

Training and exercises are developed in collaboration with CISA’s critical infrastructure partners and can help organizations understand what they need to do to enhance their security and resilience. Some of CISA’s most sought-after training includes active shooter preparedness and bombing prevention training, as well as more cyber-focused training.

CISA offers many resources and training materials to help manage risks, improve security, and aid the implementation and execution of protective measures across this sector:

- **Emergency Services Sector Cybersecurity Framework Implementation Guidance** provides a common language that Emergency Services Sector organizations can use to assess and manage their cybersecurity risks, and use the National Institute of Standards and Technology (NIST) voluntary Framework for Improving Critical Infrastructure Cybersecurity.

- **Crisis Event Response and Recovery Access (CERRA) Framework** focuses on supporting state, local, and regional efforts to enable the successful transit and access of critical response and recovery resources before, during, and after emergencies.

- **Emergency Services Sector Continuity Planning Suite (ESS-CPS)** provides a centralized collection of existing guidance, processes, products, tools, and best practices to support the development and maturation of continuity planning for the first responder community. First responders can use this resource to evaluate and improve their continuity capability and enhance their preparedness for emergencies. Learn more at https://www.dhs.gov/emergency-services-sector-continuity-planning-suite.

Everything CISA does is based on strong collaboration with industry and government partners, including partners from the 16 critical infrastructure sectors. While most of this collaboration is voluntary, CISA also manages the Chemical Facility Anti-Terrorism Standards (CFATS) program, a regulatory framework intended to ensure that dangerous chemicals stay out of the hands of those who would use them to do us harm.

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All of us have a role to play, whether it is to make a plan, train, exercise emergency plans, or even speak up when something looks suspicious.

CFATS uses a non-prescriptive, flexible regulatory framework that allows each regulated facility to customize security measures, while also meeting the required risk-based performance standards. As a result, the level of security across the chemical industry has significantly increased, not only making a successful attack on a chemical facility more difficult, but also serving as a significant deterrent to adversaries who might seek to attack facilities or acquire chemicals for use in a terrorist attack. Since the regulation started being implemented, facilities have put in place tens of thousands of security measures.

More recently, CISA is playing a larger role in supporting FEMA and communities with disaster response and recovery. In particular, CISA has a key role in supporting critical infrastructure prioritization efforts as communities work to respond to and recover from a major disaster. Through its emergency communications role, CISA also ensures the flow of voice, video and data communications during an incident response.

CISA implements many of its efforts through its 10 regional offices. The agency maintains a cadre of field support including Protective Security Advisors, Chemical Security Inspectors, Cybersecurity Advisors and other representatives who provide more direct assistance to stakeholders in their own communities.

This November, we ask everyone to take steps to promote critical infrastructure security and resilience. All of us have a role to play, whether it is to make a plan, train, exercise emergency plans, or even speak up when something looks suspicious. For more information on Critical Infrastructure Security and Resilience Month and resources available through CISA, visit www.CISA.gov.
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## EDUCATION CALENDAR

For more information about these programs or to register online, visit [www.apwa.net/Events](http://www.apwa.net/Events). Program information will be updated as it becomes available.

Questions? Call the Professional Development Department at 1-800-848-APWA.

### 2019

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<th>Date</th>
<th>Event</th>
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<tr>
<td>November 12-14</td>
<td>Certification Exam Dates (CSM, CPII, CPFP, CPWP-S, CPWP-M)</td>
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<tr>
<td>November 21</td>
<td>Facility Maintenance Efficiency Strategies</td>
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<td>December 5</td>
<td>Talking Top Tech: Augmented Reality Edition</td>
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<tr>
<td>December 10-12</td>
<td>Certification Exam Dates (CSM, CPII, CPFP, CPWP-S, CPWP-M)</td>
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### 2020

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<td>April 19-22</td>
<td>North American Snow Conference, Cleveland, Ohio</td>
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<tr>
<td>August 30-September 2</td>
<td>PWX 2020, New Orleans, Louisiana</td>
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### 2021

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<tr>
<td>April 11-14</td>
<td>North American Snow Conference, Grand Rapids, Michigan</td>
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<tr>
<td>August 29-September 1</td>
<td>PWX 2021, St. Louis, Missouri</td>
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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/](http://www.apwa.net/callforpresentations/)

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**Facility Maintenance Efficiency Strategies**

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* Program materials vary by Kit.

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**DIY Ethics for Professionals**
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**Products in the News**

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**InstaCEI: Built to save time in the field**
InstaCEI is a new mobile and web platform which allows users in the Transportation Engineering & Construction Inspection (CEI) field to view horizontal alignment and roadway stationing inside any project limits. The mobile app offers transportation engineers and contractors stationing viewer and photo stamper tools that can be used in the field to save time and improve safety. Roadway stationing viewer detects the user’s live location in the field and displays it in a station format (i.e., 15+75). The photos stamper feature labels construction progress photos taken using the app’s camera with project name, date, time, and station of the photo (0+00 format). Learn more at [www.InstaCEI.com](http://www.InstaCEI.com).

**Hot Wash System improves volume and quality of recyclates**
Manufacturers of food products and other packaging-intensive goods require large quantities of uniform reusable plastic granulates/flakes. When integrated into a new or existing plastics recycling line, hot wash systems from Herbold USA help processors meet this demand. The Herbold Hot Wash System, initially designed for PET bottles, can also be used successfully to process a variety of other items including thermoformed foils, trays and foil used in the packaging industry, as well as PO foils. For more information, call (401) 597-5500, send e-mail to info@herboldusa.com, or visit [www.herboldusa.com](http://www.herboldusa.com).

**OASIS® introduces new VersaFilter II**
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in place (or when VersaFilter II is installed into an existing OASIS cooler as a replacement filter), facility maintenance managers can cross changing the filter off their list of things to do for almost one year. OASIS’ VersaFilter II is designed to last 3,000 gallons, or approximately 12 months, under usage conditions typical in a K-12 environment. For more information, visit www.oasiscoolers.com.

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A new approach to reducing discomfort glare in residential areas
Leotek’s ComfortView™ Neighborhood LED Street Light allows neighborhoods to be beautifully lit with substantially improved visual comfort than traditional LED luminaires while maintaining safety and energy efficiency. ComfortView™ utilizes a unique two-stage optical system and a low luminance “transition zone” to reduce discomfort glare. In the absence of metrics that meaningfully quantify discomfort glare, customers should evaluate products under consideration by conducting trial installations to make comparisons and form objective judgements of competing fixtures. Learn about Leotek’s FREE Trial Installation Program at https://leotek.com/comfortview-mtip/.

S2O Design & Engineering: Reinventing Whitewater
S2O Design & Engineering has created some of the best in-stream whitewater parks and largest recirculating whitewater venues in the world. Partnering with municipalities across the U.S. and internationally, the talented team of engineers and hydrologists has delivered community-focused river recreation projects that also serve to improve stormwater management, environmental sustainability, and wildlife habitat. The recently completed Eagle River Park is an example of a dynamic project that has transformed the gateway into the Town of Eagle, Colorado. S2O Design is led by engineer, three-time Olympian, and three-time World Cup Kayak Champion Scott Shipley. For more information, visit S2ODesign.com.
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<td>2020</td>
<td>Aug. 30-Sept. 2</td>
<td>New Orleans, LA</td>
<td>(800) 848-APWA or send e-mail to <a href="mailto:ddancy@apwa.net">ddancy@apwa.net</a></td>
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<td>2021</td>
<td>Aug. 29-Sept. 1</td>
<td>St. Louis, MO</td>
<td>(800) 848-APWA or send e-mail to <a href="mailto:bshaver@apwa.net">bshaver@apwa.net</a></td>
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For more information, contact David Dancy at (800) 848-APWA or send e-mail to ddancy@apwa.net.

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