THE SOUTHEAST U.S. PUBLIC WORKS RESPONSE TO HURRICANE MATTHEW

See page 44
MARK YOUR CALENDAR!

PUBLIC WORKS EXPO

ORLANDO

AUGUST 27-30, 2017

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

EMERGENCY MANAGEMENT ISSUE

INSIDE APWA

2 President’s Message
4 Technical Committee News
6 The Show for Snow heads to the Hawkeye State
11 CPFP: It’s not about the title, it’s the experience and knowledge you gain
13 Fairfax County shares lessons learned from accreditation ascent
16 Roger Clark Leadership Conference: A Southern Tradition of Success
19 Building Bridges: Public Works Birthday Parties
22 Recognize Your Leaders
24 Index to 2016 articles

CALENDAR

31 Education Calendar

COLUMNS

32 Washington Insight
34 GAC Insight
36 Imagination to Innovation
37 Open Your Winter Toolbox
39 How Did They Do That?
42 International Idea Exchange

FEATURES

44 The Southeast U.S. Public Works Response to Hurricane Matthew
47 Incident Command System: A practical application
49 Hennepin West Mesonet: Providing emergency managers with real-time environmental information
51 Credibility through credentials
53 The APWA Utah Chapter Emergency Management Mutual Aid Alliance
57 Public works professionals have a duty to act
59 Presidential Inaugural Planning and Response in the District of Columbia

MARKETPLACE

61 Products in the News
62 Professional Directory

CALENDAR

64 World of Public Works Calendar
64 Index of Advertisers
As public works professionals, we live in a world full of constant change. It is important that we stay abreast of current events and be prepared to respond to that change—on the local, state and federal levels. “Change is the law of life. And those who look only to the past or present are certain to miss the future.” – President John F. Kennedy

Change is no more apparent than when our country inaugurates Donald J. Trump as the 45th President of the United States later this month. With the change in presidency comes a change in administration on Capitol Hill. In the coming months, we must be prepared to carry on our advocacy of public works issues with the new administration. We must keep the concerns of public works professionals in front of our decision makers.

One of President-elect Trump’s calls is the need for more spending on bridges, roads and other infrastructure. “Infrastructure” is “the happiest word in American politics” said Jason Grumet, president of the Bipartisan Policy Center, a Washington think tank. The presidential transitional website states that President-elect Trump will invest over $500 billion in new projects. We must be ready with critical infrastructure analysis, plans and advocacy for infrastructure upgrades.

A major area of change that we must prepare for is climate change. As our nation continues to experience devastating weather events, we must continue to promote our position as first responders. APWA must be the voice that advocates for public works issues as we continue to live by the “First to Arrive, Last to Leave” motto. In our role as first responders, we must continue to advocate for funding for planning, mitigation, response and recovery at local, state and federal levels. We must strive to build sustainable and resilient communities that will aid in saving lives and driving down the cost of disaster response.

As we move into 2017, APWA and our membership must prepare to protect and maintain our communities’ lifeline services. That will be through assessment and hardening of critical infrastructure, ensuring our agencies become National Incident Management System (NIMS) certified per FEMA’s directive, improving our daily working relationship with other first responders, and developing comprehensive emergency management plans.

As the way we live changes, we must
continue to be vigilant. We are on our streets and in our neighborhoods on a daily basis and must remain on the lookout for anyone or anything unusual in an area. This same vigilance should be used anywhere we go. We must all learn to live the “See Something – Say Something” slogan that the Department of Homeland Security is promoting.

“Change will not come if we wait for some other person, or if we wait for some other time. We are the ones we’ve been waiting for. We are the change that we seek.” – President Barack Obama

“Competition for the most qualified employees is stiff. Diversity is an effective recruiting tool since the comfortable and supportive environment that can be developed attracts and retains talented people.”

– Edgar S. Woolard, Jr., former CEO, DuPont

---

**American Public Works Association**

Mission Statement: The American Public Works Association serves its members by promoting professional excellence and public awareness through education, advocacy and the exchange of knowledge.

---

**Board of Directors**

President: Ronald J. Calkins, P.E., PWLF
Director of Public Works (retired)
City of Ventura, CA

President-Elect: Bo Mills, PWLF
Director of Public Works
City of Germantown, TN

Past President: Brian R. Usher, PWLF
Director of Public Works
City of Largo, FL

Director, Region I: Richard F. (Rick) Stinson, PWLF
Director of Public Works
Town of Wakefield, MA

Director, Region II: Harry L. Weed, II, PWLF
Superintendent of Public Works (Retired)
Village of Rockville Centre, NY

Director, Region III: Keith Pugh, P.E., PWLF
Engineering Services Director
City of High Point, NC

Director, Region IV: Dougles E. Layton, P.E., PWLF
Retired

Director, Region V: Richard T. (Rick) Berning, P.E., MPA
Retired
Springfield, IL

Director, Region VI: Chuck Williams, PWLF
Retired
Lenexa, KS

Director, Region VII: Maher Hazine, P.E., PWLF
Chief Strategic Officer
RIG Development Services
Pine, AZ

Director, Region VIII: Shahnawaz Ahmad, P.E., PWLF
President
SA Associates
Arcadia, CA

Director, Region IX: Jill M. Marilley, P.E., PWLF
Senior Project Manager
HDR, Inc.
Everett, WA

Director-At-Large, Engineering & Technology: David L. Lawry, P.E.
Director of Engineering and Public Works
Village of Schaumburg, IL

Director-At-Large, Environmental Management: William L. (Bill) Spearman, III, P.E.
Principal
WE3 Consultants LLC
Saluda, SC

Director-At-Large, Fleet & Facilities Management: Mary Joyce Ivens, CPFP, PWLF
Fleet and Facilities Manager
City of Ventura, CA

Director-At-Large, Leadership and Management: Stan Brown, P.E., PWLF
City Manager
City of Oakwood, GA

Director-At-Large, Transportation: Kathleen B. Davis
Director of Local Programs
Washington State Department of Transportation
Olympia, WA

(Past APWA Presidents): Robert Albee
Nick W. Diakow
Jerry M. Fay
Bob Freementhal
Larry W. Frevert
Edward A. Gottlieb
Kim Haag
Dwayne Kalynchuk
Larry T. Koehle
Diane Linderman
Martin J. McDonough
Robert Miller
Judith M. Mueller
Ronald L. Norris
Richard L. Ridings
John J. Roark
Larry Stevens
Harold E. Smith
June Rosentreter Spence
Noel C. Thompson
Elizabeth Treadway
Tim Trice
Brian R. Usher
William A. Verkest
Win Westfall
Carl D. Wills

Executive Director
Scott D. Grayson

Executive Director Emeritus
Robert D. Bugher

Editorial Advisory Board
Gordon R. Garner
Neil S. Grigg
Susan M. Harenes
Stephen J. O’Neill
Kyle E. Schilling

---

Follow us on Twitter @apwatweets
Follow us on Instagram @apwagram
Find us on Facebook

www.apwa.net / January 2017 / APWA Reporter 3
The Emergency Management Committee is embracing change. If you haven’t already read President Calkins’ message at the beginning of this issue, I encourage you to do so. “As public works professionals, we live in a world full of constant change,” he says. “It is important that we stay abreast of current events and be prepared to respond to that change—on the local, state and federal levels.” In addition, the article “Building Bridges: Public Works Birthday Parties” is a great example of a public works department that was willing to make a change that benefits both residents and the city.

The Emergency Management Committee and its subcommittees provide education and information through sessions at PWX; Click, Listen & Learn programs; postings on the Emergency Management infoNOW Community on APWA Connect; and technical articles in the January edition of the APWA Reporter. In addition, committee members sponsor both advocacy and guidance position statements on emergency management topics such as national preparedness and cyber security.

If you have considered participating in APWA on a national level, you may be interested in serving on one of the five Emergency Management subcommittees. Most subcommittee meetings are held monthly by conference call. The subcommittees are:

- Canadian Subcommittee – this committee will continue their efforts to identify and discuss the unique needs of our Canadian members and offer suggestions based on U.S. experiences
- Chapter Advocacy Subcommittee – assist chapters in cultivating emergency management champions, educating members on their role as first responders
- Education & Training Subcommittee – identify or develop training materials, e.g., exercise template, TIM program, FEMA courses
- Resources Subcommittee – identifies materials available to public works professionals and assists in disseminating, e.g., hazard mitigation plans and technology and software which assists in preparing for reimbursement requests. A change this year is that the Resources Subcommittee was combined with the Lessons Learned Subcommittee
- Special Interest/Hot Topics Subcommittee – e.g., cyber security, pandemic, UAVs, flooding

APWA members interested in serving on one of these subcommittees should contact staff liaison, Rita Cassida (rcassida@apwa.net).

The current members of the Emergency Management Committee are:

- Mr. Phil Mann, P.E. (Chair), Assistant Public Works Director, Gainesville, Florida
- Mr. David Bergner, PWLF, Principal, Monte Vista Associates, LLC, Mesa, Arizona
- Mr. Leon Berrett, Operations Associate Director, Salt Lake City Public Works, Utah
- Mr. Peter Drenan, FEMA Project Director, Fluor, Arlington, Virginia
- Ms. Loni Eazell, Sr. Disaster Services Analyst, Los Angeles County, California
- Mr. Mark Ray, P.E., Director of Public Works/City Engineer, City of Crystal, Minnesota
- Mr. Michael Sutherland, former Public Works Director, Town of Parker, Colorado
- Ms. Mary Wilson, Owner, M&R Striping LLC, Knoxville, Maryland

Stan Brown, City Manager, City of Oakwood, Georgia, serves as the committee’s liaison to the APWA Board of Directors through his role as Director-at-Large.

Rita Cassida, P.E., serves as the liaison to four of APWA’s Technical Committees: Emergency Management, Engineering & Technology, Transportation, and Utility & Public Right-of-Way. She can be reached at (816) 595-5222 or rcassida@apwa.net.
REGISTRATION OPENS SOON!

NORTH AMERICAN
SNOW CONFERENCE 2017
DES MOINES, IOWA
APRIL 23-26, 2017

www.apwa.net/snow
The Show for Snow heads to the Hawkeye State

APWA and our Iowa Chapter are proud to bring the 2017 Show for Snow back to the Midwest when we visit Des Moines, Iowa, April 23-26, 2017. More than 1,500 snowfighters and other public works professionals are expected to attend what we are anticipating will be the biggest and best Snow Conference ever!

With its central location making travel easy from all parts of North America, Des Moines is sure to provide a convenient location for attendees to experience the most concentrated collection of winter maintenance solutions under one roof. The 2017 Snow Conference has it all—from expert-led snow and ice education sessions to an exhibit floor packed with excited vendors who can’t wait to show off the latest snow and ice products your community has been looking for. Don’t wait another minute; make plans today to join us in Des Moines in 2017.

Many are still unsure what to expect this winter, but we can be sure it will involve snowfighters putting in the hard work necessary to keep the public safe. The 2017 Snow Conference offers snowfighters a unique chance to take in four days of important education and networking opportunities after they’ve put their plows away after a tough season. Whether their duties involve winter street maintenance, transportation, asset management, emergency response or public safety, they’ll be sure to find common ground with peers and have a chance to exchange ideas and experiences with other snowfighters, manufacturers, distributors, consultants and public works professionals.

Des Moines, the capital and largest city in Iowa, is everything we could ask for in a Snow Conference host city. A long-time insurance and banking center, it is also home to several large technology and operations centers. Forbes magazine ranked Des Moines as the “Best Place for Business” in both 2010 and 2013, and in 2014, NBC’s “The Today Show” ranked Des Moines as the “Wealthiest City in America.”

Attendees can experience a wonderful variety of dining and nightlife options in Downtown and East Village areas, all within walking distance of Snow Conference hotels. Don’t forget to take advantage of the city’s bicycle-sharing program or the free downtown trolley. After a busy day at the Iowa Events Center, attendees stretching their legs using the downtown skywalks can find the $40 million Pappajohn Sculpture Park, exhibits at the Science Center, or a simple coffeehouse serving up drinks while an acoustic folk singer croons on stage. Visit the Greater Des Moines Convention and Visitors Bureau website at www.catchdesmoines.com.

There’s always plenty of time for attendees to explore the exhibit floor and talk with exhibitors representing more than 150 companies with products and services focused on innovative new equipment, ground-breaking technologies, snow and ice removal, winter road maintenance, and streets and fleet operations.
for more information on where to eat and drink, things to do, an in-depth events calendar, and to get special deals and discounts.

A top attraction in Des Moines, the World Food Prize Hall of Laureates, is also the location of this year’s Snow Celebration Reception on Tuesday, April 25. This beautiful historic building is the former home of the Des Moines Public Library. The Hall of Laureates has been awarded LEED Platinum certification for leadership in energy efficiency and environmental design. It is one of only a handful of buildings on the National Register of Historic Places to have earned this distinction, making it a model for salvaging historic treasures and transforming them into usable, sustainable, cutting-edge facilities. Snow Conference attendees will have access to the entire facility, including the special 40 Chances of Photography Exhibit and other interactive educational exhibits, while also enjoying delicious food and drink. Learn more about the World Food Price Hall of Laureates at www.worldfoodprize.org.

Along with a great city and fun social events, the 2017 Snow Conference promises to showcase industry-leading education sessions and exhibits.

Each year, a dedicated committee of APWA members and winter maintenance professionals works to develop the conference education program. We’re honored to have the best and brightest minds in municipal snow operations attend the Show for Snow to present their sessions as a result of these efforts. Attendees will experience numerous programs featuring winter maintenance, weather, emergency management, fleet and sustainability.

New to the 2017 Snow Conference, APWA will be presenting a portion of our education sessions as part of our FAST TRACK. These are fast-paced 20-minute sessions designed to give attendees a great way to take in a lot of information in a short time period. We’re also proud to bring our first installment of the Traffic Incident Management (TIM) for Responders Course to the education program. Presenting in coordination with the FHWA, this is a four-hour course designed for individuals tasked with responding to traffic emergencies.

Back by popular demand is the ever-popular Winter Maintenance Supervisor Certificate Workshop! Designed for individuals charged with supervising winter maintenance operations, this one-day workshop provides a well-rounded overview of all aspects of snow and ice control. Held on the first day, it provides a great foundation for deeper investigation into specific topics of interest throughout the rest of the conference.

There will also be plenty of time to explore the exhibit floor and talk with exhibitors representing more than 150 companies with products and services focused on innovative new equipment, ground-breaking technologies, snow and ice removal, winter road maintenance, and streets and fleet operations. Select exhibitors will present unique technical sessions in the Exhibitor Solutions Theater straight from the exhibit floor, demonstrating how their company’s technology, tool or service provides a solution that addresses the needs of the snowfighting community.

This year, the always popular General Session Talk Show turns its focus to leadership and preparation. A one-of-
The Closing General Session is always entertaining for our attendees. This year’s closing keynote speaker is Charlie Wittmack, an American explorer best known for having survived a remarkable ascent of Mount Everest.

This year’s closing keynote speaker is Charlie Wittmack, an American explorer best known for having survived a remarkable ascent of Mount Everest, reaching the summit during some of the worst weather in the recorded history of the mountain. In addition to standing atop peaks during expeditions across the globe, Charlie has trekked across East Africa with the Maasai, sailed the Indian Ocean in a handmade boat, participated in a 5,100-mile bicycle ride across the United States, and completed numerous ocean marathon swims. Recognized by the Des Moines Register as one of the “Iowans of the Decade,” he has received numerous awards for his expeditions and the related humanitarian and educational programs he has developed. Charlie Wittmack knows better than most that adversity creates opportunity. Immerse yourself in Charlie’s rich storytelling while he shows you how organizations that take advantage of these opportunities have the ability to prosper in unusual and surprising ways.

Wednesday morning, April 26, is dedicated to technical tours. APWA’s Iowa Chapter is planning some great interactive experiences, including a winter operations tour at the City of Waukee. Check the Snow Conference website for continuous updates on these exciting opportunities.

Conference registration opens in January. More information about the 2017 Snow Conference is available online at www.apwa.net/snow. Make plans now to attend the Show for Snow!
Top Selling APPAREL!

APWA LADIES’ APPAREL

APWA MEN’S APPAREL

CPWA MEN’S APPAREL

VISIT US 24/7
www.apwa.net/bookstore or call 1-800-848-2792, ext. 5254

Please allow two weeks for delivery on all orders other than expedited service. All funds in US dollars. All prices are subject to change without notice.

LANDS’ END APPAREL

APWA is pleased to announce a new partnership that will allow individuals to purchase apparel from Lands’ End embroidered with the APWA and CPWA logo.

To browse or shop for APWA and CPWA apparel from Lands’ End, please visit:
http://www2.apwa.net/bookstore/LandsEnd.asp
TIRED OF THE HIRING ROADBLOCKS?

Make the switch to the more powerful, more personal hiring experience that APWA’s WorkZone job board provides.

Why WorkZone?

• The WorkZone website averages 1.5 million pageviews per year, which means more visibility for your ad

• Flat-Rate Pricing: $295 member/$395 non-member

• Featured listings and other upgrade opportunities help your ad stand out and make an impression

• Complimentary listing in APWA’s weekly “In the Works” e-newsletter showcases your job posting to 65,000 public works professionals

• Searchable database of 2,700+ résumés helps you find the right fit

• Much more!

Join the thousands of public works professionals who’ve already chosen the road free of obstacles!

Get started today at apwa.net/WorkZone
With over 32 years of service with the Village of Lisle, one of my proudest accomplishments was earning the designation as a Certified Public Fleet Professional (CPFP). While reading through my APWA Reporter back in 2007 I discovered that APWA was planning to have their first testing for the CPFP on April 21 in St. Paul, Minnesota. I was already excited about the concept of a designated certification program dedicated to fleet managers and professionals and dug deeper to find out more information.

I didn’t waste any time in acquiring additional publications and videos from the APWA store to help me study for the exam. What I learned from my study experience is that I didn’t know as much as I maybe thought I did. In fact, it was a lesson learned in many ways. Not only was I gaining knowledge about what I needed to know to prove myself worthy of the title, but I also learned something about how to keep an open mind and to always strive to learn more about my profession. A fleet manager’s job is never done and technology is ever changing. Learning and networking are vital to our existence and our ability to find the solutions to ongoing challenges.

On May 30, 2007, I was informed that I did in fact pass my test, and had now become one of APWA’s first Certified Public Fleet Professionals. My quest was not necessarily to have a plaque to hang on my office wall (although it is proudly displayed), my goal was to challenge myself and prove to myself that I had what it took to be able to earn the title of CPFP and to be able to use that knowledge to enhance the service and commitment of our Fleet Services Division for our customers. On May 30, 2012, I was recertified again for another five years.

As a result of my studies I realized the importance of accountability and utilizing fleet management software to the fullest extent. From that came the beginning of us becoming a paperless shop, where we now do everything electronically. No more paper repair orders or repair requests. Repair requests are now sent by e-mail through an e-Service Request system. The e-Service request is then automatically generated into a repair order directly through our Computerized Fleet Analysis software and the customer gets notified automatically by e-mail as soon as the repair order is closed out by the technician. This integration increased productivity, reduced redundancy, and allows the customer to be notified immediately once their repairs are completed.

I would highly recommend to any fleet manager, especially up-and-coming fleet managers, to set a goal and commit to earning the CPFP title. It’s not all about the title, it’s the experience and knowledge you gain along with it that will stick with you the rest of your career. I have been very fortunate because my career and my hobby have always been fixing things and finding solutions to whatever I am faced with—a trait I inherited from my father. I enjoy what I do every day, both at work and at home, and I know that my experience over the years has helped me greatly with achieving my certification.

The American Public Works Association and CPFP Council have done an outstanding job of promoting excellence in fleet management by creating a certification test that will test your knowledge and experience in operations, general management, business management, asset management, finance, human resources, risk management, environmental management, and IT. These subjects encompass what a true public fleet professional faces every day, and the more knowledge and experience you have in these fields, the better prepared you’ll be to provide a service of excellence to all of your customers.

continued on page 12
Being a Master Certified A.S.E. Auto and Truck technician for over 30 years, I have come to realize the importance of being trained, up-to-date with technology and achieving certification. It allows me to prove to myself, as well as others, that I care enough about what I do that I want others to feel confident in my abilities and to know that when tasked with something, I will be able to provide a service that is above and beyond.

Fleet management has evolved over the years and I can assure you that it will continue to do so in the future. It is the Certified Public Fleet Professional that will evolve with it and embrace change and challenge and who will always be prepared to find the answers and solutions. With all of the changes we will see in the future, whether it be with information technology, environmental regulations, asset management, personnel, etc., staying certified and continuing your education in all of these fields from year to year will ensure that you keep that “edge” and will prove to others that you are serious about your profession and being a professional.

Ken Lange can be reached at (630) 271-4185 or KLange@villageoflisle.org.
Fairfax County shares lessons learned from accreditation ascent

Matthew Kaiser
Information Officer
Fairfax County Department of Public Works and Environmental Services
Fairfax, Virginia

In August 2016, Fairfax County’s Department of Public Works and Environmental Services became the 114th public works agency to achieve APWA accreditation. This accomplishment marked the end of a two-year journey of self-assessment in which the department sought to identify ways to provide the highest quality services to the residents it serves. Agencies considering embarking on their own accreditation journeys may benefit from the lessons learned as DPWES overcame obstacles to join the country’s elite public works programs.

DPWES is a large organization that provides fee-based utilities, relies on citizen-approved bond funding for highly visible building projects, processes millions of dollars in land use permits, and is a first responder during weather-related emergencies. Accreditation validates and reinforces the faith and trust placed in the department by county leadership and the 1.1 million residents who benefit from innovative and dependable infrastructure.

Our effort was led by Pete Schumann, a former supervising engineering inspector and mountaineering and rock climbing enthusiast who was brought out of retirement after a 28-year career. He describes the quest for accreditation as conquering our industry’s Everest, and his mountain metaphor was used throughout the campaign to motivate staff. “As a team, roped together, we knew we had the talent and determination to make it to the top,” Schumann said of accreditation. “We battled the high winds of time constraints and we navigated crevasses of doubt along the way. It was an exciting adventure, and we learned more about what we do and how we do it.”

continued on page 14
Unified effort
DPWES director James Patteson made accreditation a key strategic initiative for the department. From the beginning, we approached accreditation as a unified public works department. The department-wide effort included staff from solid waste management, stormwater and wastewater management, land development services, capital facilities, and supporting teams from human resources, information technology, finance, safety, and communications. Engaging these employees spread across the county at multiple sites was necessary.

A summit core team was created to lead groups charged with producing documentation up the mountain. The team held monthly base camp meetings to discuss progress made toward reaching four high camps or milestones. The final milestone was marked by the completion of the self-assessment process and the final ascent to the top of the accreditation mountain.

Engaging staff
To communicate the benefits of accreditation and the status of the effort to staff, an intranet site was created that included the route we’d take (project plan), practice templates and news updates, team rosters, FAQs, and a portal reserved for core team members. A dedicated e-mail address was published to receive questions. A video introducing accreditation was created that included interviews with staff and a message from Director Patteson. Attractive posters featuring DPWES staff in action were created, framed, and distributed to raise awareness of the campaign. Status posters showing milestones achieved were displayed and shared on the employee blog. Practices of the week (POWs!) were also posted on the blog. Photos of staff doing the work described in the highlighted practice helped connect employees to the accreditation effort. Schumann presented regular updates to the senior management team, even attending one memorable meeting dressed in full climbing gear! And finally, Director Patteson stressed the importance of accreditation during his Director’s Dialogue Sessions, visits he makes to suites and sites each spring to personally communicate department information to staff.

Producing documentation
We received useful advice from several accredited municipality groups we turned to for help. They freely shared their experiences and encouragement during peer reviews. A few key things to remember for agencies considering accreditation:

- Set a positive tone from the outset.
- Provide what the practice is asking. Include a practice or policy where required.
- Don’t underestimate the time it takes to complete practices.
- Use uniform formatting for all practice write-ups and documentation.

Overcoming challenges
Achieving accreditation was not without its challenges. In fact, there were many obstacles to overcome. As mentioned above, DPWES is made up of five different business areas. Coordinating the collection of documentation from staff working in diverse divisions required leadership and persistence. DPWES set an aggressive accreditation schedule (two years), so the core team was always working against the clock. It was difficult to find time to meet, and difficult for staff to find time away from their regular work to research and complete practices. DPWES’s role as a first responder also created a challenge to meeting milestones. Staff were pulled away to plow snow after crippling blizzards and to monitor flooding after heavy rainstorms. The APWA software required training (APWA’s technical support was much appreciated!).

Two years is a long time to devote to any goal, and keeping people focused isn’t easy. Protocols and personnel changed, including core team members. Completing more than 500 self-assessment practices is a lot to ask of an already busy workforce. We set achievable goals and kept the mood light and positive to avoid accreditation fatigue. A little levity can go a long way. For example, Schumann began each core team meeting by showing Dilbert cartoons and other inspirational videos. He also kept the meetings to one hour and provided refreshments needed for a long climb—energy bars and water, of course!

Finally, agencies can ensure that their evaluations run smoothly by practicing their presentations.

- Be sure to know who wrote each practice. Have them in the room if possible.
- Know where to find documentation. Don’t waste time clicking around for information.
- Uploading PDFs ahead of time is preferred over hyperlinks. We had problems with hyperlinks and a sluggish system on the day of our evaluation. Have IT staff on standby.

Accreditation benefits
APWA Past President Elizabeth Treadway presented our official accreditation plaque to the Fairfax
County Board of Supervisors during their meeting in November. Being recognized by county leadership for achieving accreditation provided staff an opportunity to reflect on the journey and to take pride in the professional services they provide. DPWES is now counted among the elite public works agencies in the country. This prestigious accomplishment should be a source of pride for residents too, as well as instill confidence in DPWES’s work. As our workforce retires and renews, the documented practices and procedures will help bridge gaps in knowledge and experience. Perhaps most importantly, the accreditation experience encouraged interdepartmental coordination and ensures that DPWES is working together as a unified team in fulfilling our shared mission, vision and values.

Matthew Kaiser can be reached at (703) 324-8455 or matthew.kaiser@fairfaxcounty.gov. 

On November 1, 2016, APWA Past President Elizabeth Treadway presented the APWA accreditation plaque to the Fairfax County Board of Supervisors on behalf of the Department of Public Works and Environmental Services. Members of the accreditation core team joined county leadership. Treadway is wearing red. Fairfax County Board of Supervisors Chairman Sharon Bulova is in yellow. DPWES Director James Patteson is standing to Bulova’s left. Accreditation manager Pete Schumann is standing to Treadway’s right.
Roger Clark Leadership Conference: A Southern Tradition of Success

Calvin D. Clifton
Business Development Manager
Mattern & Craig, Kingsport, Tennessee
Member, APWA Government Affairs Committee

Who exactly was Roger Clark? And what exactly is the Roger Clark Leadership Conference? Roger was a former Director of Public Works in Kingsport, Tenn., where he was very active in the APWA Tennessee Chapter and in Region III. When I began my public works career in Kingsport, I had the pleasure of knowing Roger and working with him briefly before his untimely passing in September 1991 at the age of 49. The Roger Clark Leadership Conference (RCL) is a biennial leadership event named in his honor, hosted by Region III chapters, and open to current and future chapter leaders in Regions III and IV.

Region III is proud to have started this event that pays tribute to Roger and his dedication to APWA, and we’re proud of the more recent tradition of inviting our neighbors in Region IV to join us! The event is typically a one- or two-day event that rotates around the chapters in Region III and is always hosted by that chapter. The most recent RCL was hosted by Roger’s home chapter in Chattanooga, Tenn., in April 2016. The event was once again well attended and deemed a success by all attendees and organizers.

The RCL event is all about the success of our chapters and working with APWA National to utilize their support for success at the local level. Diverse topics range from recruiting and retaining members to organizing and executing an equipment roadeo at the chapter level. Speakers and topics are typically left up to the host chapter with input from the Regional Directors. Brian Van Norman, APWA Director of Chapter Relations, and his staff then take the lead on programming for the event based on this input. The local host chapter makes the arrangements for the meeting space, accommodations, and meals. The host chapter may fund the event from their budget and seek contributions from vendors to help offset expenses with the goal of keeping the registration fee as reasonable as possible.

The 2016 RCL conference introduced Andrea Eales, APWA Director of Government Affairs, who provided a presentation on Public Works Advocacy and how it can and should start as a grassroots effort at the local and chapter levels. Since then Andrea has made similar presentations to other chapters and at PWX in Minneapolis this past August. Brian Van Norman provided much of the other content focusing on the relationship between APWA National and the local chapters. He discussed the organizational structure, the strategic priorities and goals, and the many tools and resources available to chapter leaders. Keeping things “high-

A variety of states and chapters from Regions III and IV were represented at the event. Registrants met for a reception and dinner the night before the conference event. This was an excellent networking opportunity and for folks to get acquainted.
tech,” Ashley Wilson, APWA Product Development and Support Manager, spoke remotely to the group from Kansas City on the online resources available to chapter leaders and the membership.

APWA President-Elect and former Region III Director Bo Mills proudly states, “The Roger Clark Leadership Conference is a big part of what keeps Region III so strong. Leaders (committee chairs, award winners, Top Ten recipients, and national presidents) within APWA often rise from the ranks of Region III.” He went on to say, “The RCL keeps the Region III delegates better connected to one another. This sharing of information between chapters has shown tremendous benefits. Joining with Region IV for the past several years, the RCL conferences have broadened this sharing of information by allowing attendees to hear best practices from other chapters and other regions.”

It is both enlightening and rewarding to personally enjoy watching the attendees engaged in one-on-one or roundtable conversations about what has worked in their home chapters. Attendees that have typically never met are suddenly exchanging ideas and becoming great, often lifelong friends with their colleagues from all over the southeast. Keith Pugh, former Delegate to the Council of Chapters (North Carolina) and now APWA Region III Director, and I have become great friends having met several years ago at an RCL event. Following the most recent RCL conference, Keith said, “The networking time and hearing about the activities in our other chapters was very well received. Everyone also thought we needed more time. That is a common theme with these events—time!!”

It was truly an honor and a privilege to have had Bo, Keith, and APWA Region IV Director Tommy Brown in attendance and participate throughout the event. The delegates from Regions III and IV presented plaques to Bo and Tommy recognizing their commitment and contributions to APWA and their respective regions. Tommy expressed his appreciation to Region III for their hospitality and open-ended invitation to join in the Roger Clark events through the years recognizing the excellent relationship between Regions III and IV. He also spoke to the attendees on the important relationship between the chapters and APWA National.

The biennial event, occurring on an alternating schedule with APWA’s biennial leadership events in Kansas City, allows for more consistent engagement of chapter leaders and provides another opportunity for the leadership in the southeast to meet and share information. This arrangement provides leadership training opportunities for chapter leaders and young professionals on an annual basis.

The RCL events have received outstanding support of APWA staff (Brian Van Norman, Andrea Eales, and Teri Newhouse, Director of Finance) bringing real-time association information to the RCL attendees at

continued on page 18
the local and chapter levels. Often included in this sharing of APWA knowledge are Executive Committee members (President, President-Elect and Past President) that have attended. Dedicated APWA leaders such as Richard Ridings, Judy Mueller, Bob Freudenthal, Noel Thompson, Diane Linderman, and Elizabeth Treadway have all attended these events in recent years.

We would like to thank the Tennessee Chapter leaders and volunteers that made this event a success in 2016. Former Conference Committee Chairman Mike Flatt, Chapter President Rodney Keeton, Past President and Alternate Delegate Ronnie Hammonds, Klair Kimmey, and Kimberly Strong all played important roles. It is also important that we recognize our vendors that always step up to help make our events successful. Stringfellow and Mattern & Craig were our sponsors for the 2016 event in Chattanooga. Looking ahead, the next RCL event will be planned and hosted by the Kentucky Chapter in 2018.

A leadership event such as the Roger Clark Leadership Conference provides many benefits and merits to chapters at a more local level and provides yet another opportunity for current and future leaders to engage and interact. As we are a professional association in transition, it may be time for other regions and chapters to consider a similar conference for the benefit of the young leaders that are coming on strong in the ranks.

Calvin D. Clifton is a Council of Chapters Delegate (Tennessee), Past President of the Tennessee Chapter, and member of APWA’s Government Affairs Committee. He can be reached at (423) 245-4970 or cdclifton@matternandcraig.com. (APWA President-Elect Bo Mills, PWLF, and APWA Region III Director Keith Pugh, P.E., PWLF, contributed to this article.)
Building Bridges: Public Works Birthday Parties

Mark Ray, P.E., Director of Public Works, City of Crystal, Minnesota; Erin Kolb, resident, Crystal, Minnesota

It all started with a simple e-mail to the city manager that could have been written by a parent of a young kid anywhere in the country:

Question for you: My kid loves construction equipment and garbage trucks...I'm wondering if there is a way to have a birthday party at the new public works building where children could have a tour of the vehicles, perhaps climb inside a select few. I didn't see anything online about it so I thought I'd ask you...

Two hours after that e-mail was sent, the concept of a Public Works Birthday Package was born.

Parent’s perspective
Like most kids, my three-year-old loves trucks. And I mean loves them in a “no Mama, that’s a tandem vibratory soil compactor not a steamroller” kind of way.

So when his birthday came around I knew I wanted to use trucks as the theme for his birthday party. Our community recently built a new public works garage, and I enjoyed taking a tour during the open house. I sent an e-mail to the city manager to see if there was any way we could have the party in the conference room at the new building.

Ultimately the answer was no, but the city staff proactively came up with a creative solution that involved having a truck come to us. I exchanged a few e-mails with City Engineer Mark Ray and the city staff hit the ground running. At one point, I actually wondered who was more excited about the idea—them or me. They were great!

We had about a dozen kids at the party, and each one of them got a chance to climb into the cab, sit in the chair, and get their picture taken. My son was excited, but it was my four-year-old niece that we had to peel out of the seat when it was time for the driver to leave! The kids wore little safety vests with the city logo, were able to go home with souvenir plastic hats, and had pictures taken by a picture wall using some extra road signs provided by the city as part of the party package.

Several of the parents spent time talking to the driver about what his job was, what kind of work he does, and how he uses the truck. A friend who works for Caterpillar, Inc. even took the opportunity to get some feedback on how the driver likes the new wheel loader compared to the old model the city used to have.

Since the party, the response from other parents has been universal: “Your city did that? That’s really cool! I wish our city did things like that.”

City’s perspective
Fostering positive connections with residents in the community is an important component bringing city staff and residents together. City staff saw this idea from a council member’s wife as a serendipitous opportunity to continue to build awareness for public works, connect with our residents on a personal basis, and help give children in our community a great time at a birthday party. But while there were positives identified with this opportunity, concerns were raised as well. The concerns primarily were related to costs, liability, and management of resource time.

From a cost perspective, the two primary costs were for labor and equipment. For ease of administering this program, a minimum charge was established for the event, regardless of location, staff or equipment. This minimum charge was calculated based on two components, labor and equipment. The labor cost was determined based on the highest paid equipment operator working the minimum two hours for non-scheduled work (overtime). The equipment cost was determined based on the highest paid equipment operator working the minimum two hours for non-scheduled work (overtime). The equipment time was based on the slowest piece of equipment driving to the furthest corner of the city and back.

Some additional items that can be included for additional cost are “Junior Public Works” safety vests and plastic hard hats.

continued on page 20
Vehicle selection was a critical decision that was made with a few key needs in mind. First, the equipment had to be able to travel at a reasonable speed. Since the only wear and tear on the equipment was with the driving to and from the birthday party, we wanted to make sure that that did not consume a lot of the two-hour staffing time. Second, the vehicle had to be intended to primarily be operated on the street. The wear and tear of the vehicle traveling to and from the birthday party had to be in line with the normal operation of the vehicle. Third, the vehicle had to be reasonably accommodating for kids (and adults) to climb in and out of. Finally, in the interest of caution, any equipment that works around sanitary sewers or other potential contact with bodily fluids was removed from consideration.

Calculating the minimum charge was the first step in working out how long the equipment would be at the party. With the minimum work hours available (due to the union contract) being two hours and the furthest drive time was calculated to be approximately 20 minutes each way, it was determined that having the equipment onsite for one hour was feasible. One hour also felt like a reasonable amount of time for a group of kids to each climb into the equipment and get photos taken.

With the equipment being around children, liability concerns were not just for protecting the city, but also providing a reasonably safe experience for the kids. The city already had a number of events where the public could be around city equipment. These events included the annual City Vehicle Fair, Nite to Unite/National Night Out neighborhood parties, and our fire district has vehicles out in the neighborhoods for Halloween. In thinking about the events that already occur, the birthday party concept was not all that different functionally. However, because it was a private event we did have the city attorney draft an agreement that not only addressed the liability side, but also other key contractual points. This included the fact that public works staff and equipment provide mission-critical services to the communities they serve. Part of the agreement includes language that if a specific piece of equipment was needed for a city purpose, that would take priority. The agreement also includes language about the event location being appropriate for the equipment to be parked and the supervision needed for the children. Finally, we have developed some procedures for the city staff at the event. This includes providing a safety briefing to everyone prior to being on or near the equipment.

As an added option, event hosts can purchase some additional items such as children's safety vests that say “Junior Public Works” and plastic hard hats to add to the experience. We also reached out to 811 and the local safety council to get some educational handouts (such as coloring books) to give to the children in attendance at no cost to the city or event host.

Public works departments provide some of the services that make normal life possible in the communities we serve. This birthday party package is another opportunity to share our story with the public.

Mark Ray can be reached at mark.ray@crystalmn.gov or (763) 531-1160.
MARK YOUR CALENDAR!

PUBLIC WORKS EXPO

ORLANDO

AUGUST 27-30, 2017

Imagining Tomorrow
Recognize Your Leaders

A simple definition of leadership is that leadership is the art of motivating a group of people to act towards achieving a common goal. Many times we find ourselves thinking of leaders being only at the top of an organization. Not so. Leaders are found at all levels within our public works organizations. Most often, they are anonymous; they are simply doing their jobs and yet, their actions impact many.

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

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

How long has the candidate been involved in the public works industry? Ten years

How long has the candidate worked in their current position? One year

Please describe the reason that the candidate is being considered for recognition.
Upon his arrival to the City of Des Moines, Mr. Johnson quickly recognized that a large percentage of the workforce in the department was, like a lot of America, overweight. He properly diagnosed this as an unhealthy lifestyle problem and set himself about to helping encourage a lifestyle change in the workforce. He undertook a wellness initiative that spanned four months to discourage short-term dieting but rather promote healthy eating and exercise for the long run. He brought in nutritionists from a local grocery chain to educate and inform the workforce. The timing of the end of the initiative coincided with the annual health risk assessments to furnish medical evidence to the workers of the improvements going on inside themselves that couldn’t be seen in the mirror.

The end result was that the department collectively lost over 430 pounds, from just the staff that participated in both weigh-ins. Actual weight loss was greater. The department lost the equivalent of over two people! And not through budget cuts...

How was the candidate’s leadership ideas/actions brought to the forefront?
Mr. Johnson bounced the idea off the department’s representatives to the City’s wellness committee to gauge its reception. Encouraged by their positive response, he sought the approval of the department director to reach out

Nominator’s Name: Jonathan Gano, P.E., PWE
Candidate’s Name: Steve Johnson
Candidate’s Title: Public Works Operations Manager
Candidate’s Agency/Organization: City of Des Moines Public Works Department
Candidate’s City/State: Des Moines, Iowa

Steve Johnson
beyond his immediate work group and make it a department-wide effort.

Who did the candidate work with to help bring this idea/action forward?
Mr. Johnson appropriately engaged the City’s wellness committee in supporting the effort and to help tie the initiative to existing programs and communication channels.

Did the candidate experience any challenges when trying to implement this?
As with most of these kinds of initiatives, apathy and indifference in the intended audience is the biggest challenge. While the results were remarkable, there is still much work remaining.

Are there steps/processes that, when looking back, the candidate could have done differently to make this idea/action even more successful (lessons learned)?
This event was early in Mr. Johnson’s tenure in the department. He now understands better how to reach the different work groups to encourage even more participation.

The next iteration will be coupled with a smoking cessation outreach to further promote a healthy lifestyle.
Index to 2016 articles

Listed in this index are all articles published in the 12 issues of the APWA Reporter during 2016. They are categorized by subject, with subject headings in alphabetical order. All of the articles can be found on the APWA Reporter web page at www.apwa.net/Resources/Reporter.

Annual Buyer’s Guide

Annual Buyer’s Guide, April, p. 62
Alphabetical listing, April, p. 62
Categorical listing, April, p. 79

Ask Ann

Jan., p. 64
Feb., p. 60
April, p. 96
June, p. 50
July, p. 112
Aug., p. 174
Sept., p. 52
Oct., p. 56
Nov., p. 24
Dec., p. 28

Awards

Excellence in Snow and Ice Control Award, May, p. 12
2016 Top Ten Public Works Leaders named, May, p. 76
APWA announces the 2016 Public Works Projects of the Year, July, p. 86
Awards 2016, Aug., p. 20
Chapter Membership Achievement Award winners, Sept., p. 10

Certification

2015 APWA Certified, Jan., p. 18
CPII certification experience, March, p. 16
APWA announces 19 public works professionals earned Certified Public Infrastructure Inspector credential, May, p. 20
APWA announces new Certified Public Fleet Professionals, May, p. 21
CSM aligns stormwater manager, May, p. 22
APWA’s CPII certification brings legitimacy to the construction inspection craft, June, p. 14
Benefitting from the CSM Certification: Personally, locally at work and in the community, and globally, July, p. 33
CPII certification draws attention to your fine-turned skills in infrastructure inspection, Aug., p. 16
CPII certification: take a strong look at what APWA can offer you and go for it, Sept., p. 12
CPFP certification conveys instant credibility to others in the public works field, Oct., p. 8
CPFP certification: what you will learn will enable you to be successful, Nov., p. 6
CPFP certification: validation, value and confidence as a fleet professional, Dec., p. 8

Council Corner

Exploring the world of infrastructure financing, Jan., p. 8
Success comes in numbers, June, p. 7
Share your experience at PWX, July, p. 19

Diversity

Acceptance of women civil engineers in public works – are we there yet? Jan., p. 16
Introducing the University of Washington to APWA, Feb., p. 22
Kansas City mayor’s office uses data, public-private partnerships to achieve Women’s Empowerment, March, p. 22
Knock knock…Who’s there? April, p. 18
Plugging the Brain Drain in your workforce, May, p. 26
What does diversity mean? June, p. 20
Keeping diversity in the forefront of public works, July, p. 45
Empowering success, Aug., p. 14
Public Works: Service to all, Sept., p. 14
Diversity: Alive and well at the 2016 PWX, Nov., p. 38
Meet your APWA National Diversity Liaison, Dec., p. 14

Emergency Management
Making the Incident Command System meaningful to utility workers, Jan., p. 46
Ventura County Public Works Agency disaster simulation ensures county-wide state of storm readiness, Jan., p. 48
Protecting our critical infrastructure through information sharing, Jan., p. 50
Public Works and Emergency Management – City of St. Charles, Illinois, Jan., p. 52
Using consultants to maximize Stafford Act recovery grants, Jan., p. 54
Aerial robotics serves public works in emergency management, Jan., p. 56
Hurricane Dolores comes to town, Jan., p. 59
Gaining budgetary and other support for your emergency management and urban forestry programs, Jan., p. 60

Engineering and Technology
Green Streets: Getting to efficient, effective and affordable, June, p. 31
Drones as a tool for bridge inspection, June, p. 35
Learning lessons from infrastructure tragedies, June, p. 39
Flood mitigation for Blair water and wastewater treatment plants, June, p. 41
National Weather Service products and information for public works, June, p. 45
Emergency management software is not only for disasters, June, p. 47

Facilities and Grounds
Sustainable park renovations bring nature to a neighborhood, April, p. 36
The Energy Revolution, April, p. 42
Investigation of a building gone bad, April, p. 44
Lawn conversions that save money, labor and resources, April, p. 46
Keeping employees and citizens safe and secure in public buildings, April, p. 50
Right-of-way mowing and maintenance, April, p. 52

Fleet Services
Fleet customer service, Sept., p. 30
GPS/AVL is not just used while plowing snow, Sept., p. 32
Fleet staffing challenges in today’s job market, Sept., p. 34
Driverless work trucks and their applications to public works, Sept., p. 36
What’s in a name: Telematics, Automatic Vehicle Location, and Internet of Things? Sept., p. 40
Waste collection fleets are “smartening” up: the five newest smart truck technologies, Sept., p. 44
How predictive analytics can reduce fleet costs and minimize downtime, Sept., p. 48

General
USDOT announces Smart City Challenge, Feb., p. 16
Hometown Help for Heroes, July, p. 38
Debtors to our profession, July, p. 40
Strength in Numbers: Leadership Lessons from the Golden State Warriors, July, p. 42
#iampublicworks, Aug., p. 18

www.apwa.net / January 2017 / APWA Reporter
Second Chances: Workforce reentry through structured employment, Aug., p. 148
Maintain your maintenance skill, Aug., p. 154
Pueblo levee project requires artful listening to many stakeholders, Aug., p. 164
Worksite Safety: Not a one-size-fits-all approach, Aug., p. 168
America’s Local Governments: Their annual budget process, Aug., p. 172

Imagination to Innovation
Chips off the block, Jan., p. 38
Seeing is believing? Feb., p. 28
Fungus among us? March, p. 30
Power, power everywhere…, April, p. 22
Web worldwide? May, p. 32
Growing away from petroleum, June, p. 27
Pigs and Bugs, July, p. 50
Customers on the Team, Aug., p. 116
Bee Electric, Sept., p. 20
Stalking the big bamboo, Oct., p. 12
Power to Public Works, Nov., p. 14
Capturing Carbon Dioxide, Dec., p. 20

Inside APWA
APWA Kansas City staff members volunteer at Ronald McDonald House, Jan., p. 12
We Got This! Jan., p. 20
2015 Calibration Cruise-In, Jan., p. 23
Index to 2015 articles, Jan., p. 28
Call for nominations to APWA Board of Directors issued, Feb., p. 6
APWA’s D.C. Office: Government Affairs, CPWA, Center for Sustainability, Media Relations and More! March, p. 12
APWA hires new Executive Director, April, p. 7
APWA turns a new page in its distinguished history, April, p. 12
Meet the new Executive Director, May, p. 6
C4S News, May, p. 8
Connecting through the Emerging Leaders Academy, June, p. 10
Candidates for the APWA Board of Directors named, July, p. 6
National Public Works Week celebrated in 56th observance across North America, July, p. 14

International Idea Exchange
Preparation and engineering skills in New Orleans, Jan., p. 43
Municipal water services in Finland, Feb., p. 32
APWA announces 2016 Jennings Randolph International Fellows, March, p. 36
RedR Australia: Building back better in Nepal, April, p. 30
Sixth National Congress on Public Works and Services, April, p. 32
Robot brings cutting-edge safety to Christchurch repairs, May, p. 40
Habitat III: What needs to be done on financing urban development, May, p. 42
Development growth of Køge, Denmark, July, p. 55
APWA 2016 International Affairs Committee, Aug., p. 122
Dynamic discoveries in the other Down Under: A Jennings Randolph International study tour to Auckland, New Zealand, Sept., p. 26
IFME Board Meeting in Ottawa, Ontario, April 2016, Oct., p. 18
PWX: An International Perspective, Nov., p. 18
The Power of Narrative, Dec., p. 26

Leadership and Management
Engaging the employee base, Dec., p. 31
Searching for Gold: The right person is there – if you know where to look, Dec., p. 34
APWA members offer similar advice on leadership qualities, Dec., p. 36
#iampublicworks – How it all started! Dec., p. 38
Public Works-a-Lot, Dec., p. 40
Public Works Awareness Front and Center, Dec., p. 42
Stressful Situations: How to deal with others and yourself, Dec., p. 44
It isn’t blue, and it isn’t thin, it’s the public works Thick Orange Line, Dec., p. 46

Leadership by Discipline
Leadership by Discipline: Emergency Management, Jan., p. 40
Building Your Leadership Pipeline, Feb., p. 30
Solid Waste Management, March, p. 34
Leadership in our Vertical Infrastructure: Facilities and Grounds, April, p. 28
Sustainability, May, p. 38
Engineering and Technology, June, p. 28
Managing the Rights-of-Way, Aug., p. 120
Leadership in Winter Maintenance, Oct., p. 16
Leadership by Discipline: Final wrap-up, Dec., p. 24

North American Snow Conference
The Show for Snow heads to the Northeast, Feb., p. 12
What it means to be positive, March, p. 7
Speak words that empower you, April, p. 10
Hartford in pictures, May, p. 14
Snow Conference returns to New England, Aug., p. 10

Obituaries
Roger K. Brown, APWA Past President, dies at 87, July, p. 113

Open Your Winter Toolbox
Finding what is in the toolbox, March, p. 31
Levels of service, April, p. 24
Weather forecasts, May, p. 34
Liquids, July, p. 52

Training, Aug., p. 117
Variable application rates, Sept., p. 22
What is anti-icing really? Oct., p. 12
Edge Storms, Nov., p. 15
Information, Dec., p. 21

President’s Message
First responders are built on trust, Jan., p. 2
Too much or too little: incentive to take a different outlook on water resources? Feb., p. 2
Navigating the needs of our councils and residents, March, p. 2
How did we get here and where do we go from here? April, p. 2
Sustainability framework offers important lessons for public works, May, p. 2
Engineering and technology are with us always, June, p. 2
Federal Transportation: Long on planning, short on specifics, July, p. 2
Thank you for an amazing year, Aug., p. 2
The perfect way to give back to our profession, Sept., p. 2
Using technology to enhance your community, Oct., p. 2
We build bridges to our communities and to one another, Nov., p. 2

PWX
Green Line LRT Minneapolis and St. Paul, Minnesota, Jan., p. 14
3M technical tour showcases
innovation, Feb., p. 15
Experience Minnesota, March, p. 10
St. Croix Crossing Technical Tour, May, p. 16
Minnesota Chapter celebrates 70 years, May, p. 18
Recreational activities in and around Minneapolis, June, p. 8
Show your team colors, July, p. 20
A simple idea for Flint, July, p. 22
Want to be more innovative? Then you need to…, July, p. 24
Three reasons most leadership training completely and totally fails (and three ways to fix it), July, p. 26
The Five-Second Rule, July, p. 28
Minneapolis in pictures, July, p. 30
Keeping diversity in the forefront of public works, July, p. 45
Four options to attend PWX, Aug., p. 35
Don’t miss these at PWX! Aug., p. 36
One-day passes available for PWX, Aug., p. 37
Experience Minneapolis bicycling facilities, Aug., p. 38
International Public Works Director Roundtable, Aug., p. 40
Strategic planning for municipal fleet management, Aug., p. 42
Rice Creek Commons: Revitalizing a vacant brownfield, Aug., p. 44
The remarkable impact of being an effective client, Aug., p. 48
Goats for Vegetation Management Program, Aug., p. 52
Warming up to sustainable paving, Aug., p. 56
Asset management through a life-cycle lens, Aug., p. 60
PWX: An International Perspective, Nov., p. 18
New name, same great experience at the first PWX! Nov., p. 26
CPWA at PWX 2016, Nov., p. 34
Diversity: Alive and well at the 2016 PWX, Nov., p. 38
2016 PWX Futures Program, Nov., p. 40

Recognize Your Leaders
Jan., p. 26
Feb., p. 24
March, p. 26
April, p. 20
May, p. 28
June, p. 22
July, p. 46
Aug., p. 113
Sept., p. 16
Oct., p. 10
Nov., p. 12
Dec., p. 17

Small Cities/Rural Communities
Bridge District Water Storage Facility at Jerome D. Barry Park, Feb., p. 18
Rehabilitation of the Bath Village Covered Bridge, March, p. 18
Hurricane Katrina: Ten years later, May, p. 24
The unappreciated value of stakeholder input and outreach on projects, June, p. 16
Mind the Gap: Finding and resolving gaps in stormwater project management, July, p. 36
Legacy project commemorating 450 years, Nov., p. 8
Public Works advocacy success at the state level, Dec., p. 10

Solid Waste Management
Virtual workshop gives Pierce County residents easy access to solid waste plan input, March, p. 40
One-side-of-the-street garbage collection, March, p. 42
Edmonton Anaerobic Digester project, March, p. 44
Organics Checklist, March, p. 48
City of Phoenix Wellness Program kick-starts drivers’ health habits, March, p. 50
Safety First: More than a slogan, March, p. 52
Identifying temporary debris sites: a best practice in debris management planning, March, p. 54
Operational teamwork in Tempe, Arizona: Fleet Services and Solid Waste address fleet readiness, March, p. 56
Using data to drive innovation in environmental services, Aug., p. 158

Sustainability
Sustainability was key for new rental car facility at Logan Airport, May, p. 46
Advancing community sustainability using the STAR Community Rating System, May, p. 49
Planning to be prepared: climate change and natural hazards mitigation, May, p. 52
Sustainability, it’s about mitigating for and recovering from a disaster, May, p. 54
Monetizing the value of resiliency, May, p. 56
Coastal city solutions to protect infrastructure from sea level rise, May, p. 59
Sustainability through a fleet lens, May, p. 62
100 Resilient Cities: How hundreds more cities can benefit, May, p. 64
Sustainability Plans in public works agencies, May, p. 66
Integrated “One Water” approach for managing water resources, May, p. 68
Making streets complete for community sustainability, May, p. 70
Sustainable solutions for locally-controlled water supply in Southern California, May, p. 74

**Technical Committee News**

Emergency Management Committee: Engaging members and identifying needs, Jan., p. 6
Water Resources Management, Feb., p. 10
Identifying the best practices affecting solid waste professionals, March, p. 6
APWA committees gather to “connect for action,” April, p. 6
Engineering & Technology Committee: Serving the needs of members, June, p. 5
Transportation Committee: Surveying the needs of APWA members, July, p. 12
UPROW Committee: One of APWA’s busiest Technical Committees, Aug., p. 8
Fleet Services Committee: Working to address the needs and concerns of public works fleet professionals, Sept., p. 8
Winter Maintenance Subcommittee: Tools and facts to assist our APWA members, Oct., p. 6
A year in the life of the Leadership & Management Committee, Dec., p. 6

**Transportation**

Safer roads, safer communities: how Road Diets can improve your neighborhood’s roadways, July, p. 59
Making our local roads safer through Local Road Safety Planning, July, p. 61
V2V, V2I or I2V, take your pick now, don’t wait, July, p. 64
The gas tax is running out of gas! What alternative is sustainable? July, p. 66
2016 transportation safety activities at the Transportation Research Board annual meeting and the latest in transportation safety news, July, p. 69
Involving tribes, improving road safety, July, p. 72
How states are addressing local road safety, July, p. 74
The future is bright! But how do we pay for it? July, p. 78
Taking partnering to a new level, July, p. 81
Safety is Priority No. 1 for Railroads, July, p. 84
A bridge of firsts and lasts, Aug., p. 144
Developing a quality sidewalk program in Fairfield, Ohio, Aug., p. 150
Traveling in new directions: Proactively addressing future transportation needs, Aug., p. 156
Local Funding: “Where the rubber meets the road” in transportation revenue generation, Aug., p. 160
Interlocking concrete pavement as an alternative to asphalt concrete for Howard Road, Westley, California, Aug., p. 170

**Utilities and Public Right-of-Way**

Embracing technology for damage prevention, Aug., p. 126
Bringing cost-effective APWA training to the next generation of public works professionals, Aug., p. 128
Guidance Statement for Abandoned Underground Facilities, Aug., p. 130
Right-of-way acquisition process management utilizing GIS, Aug., p. 134
Developing and implementing a streetlight fee for Salem, Oregon, Aug., p. 137
The Damage Prevention Partnering Process (D3P), Aug., p. 140

**Washington Insight**

Congress held captive by presidential election politics in 2016, Jan., p. 5
Public Works should lead the way towards Clean Water Act reform, Feb., p. 4
APWA Advocacy Resources, March, p. 4
National Flood Insurance Program Reauthorization, April, p. 4
In D.C., the Government Affairs Committee advocates for key priorities, May, p. 4
Public Works and Cybersecurity, June, p. 4
APWA hosts Capitol Hill Roundtable to commemorate National Public Works Week, July, p. 4
Tax reform likely to impact public infrastructure financing, Aug., p. 6
The formation of the House Public Works and Infrastructure Caucus, Sept., p. 6
Advocacy matters! Oct., p. 4
Federal Regulations and Public Works, an introduction, Nov., p. 13
Advocacy through education Congress, Dec., p. 19
Water Resources
Street rights-of-way reimagine, Feb., p. 38
Innovative solution for new hexavalent chromium drinking water regulation, Feb., p. 41
Regulatory encumbrance or vital natural resource protection? Feb., p. 43
One size fits most: generic control system design for well upgrade programs, Feb., p. 48
Stakeholders shape Charlotte’s innovative Stormwater Ordinance, Feb., p. 52
Asset Management, GIS, and Water Resources: One city’s story, Feb., p. 56
Using utility master planning for public engagement and developing public support, Feb., p. 58

Winter Maintenance
Snow operations go green in Fort Collins, Oct., p. 22
Technology improves winter driving safety for the City of Lethbridge, Oct., p. 30
Twenty ways to save on salt, Oct., p. 33
Succession planning in snow and ice operations, Oct., p. 36
Charting a new course, Oct., p. 38
Best Value versus Low Bid, Oct., p. 40
Street Glaciers, Oct., p. 42
Hail of a Day, Oct., p. 46
City deploys new road weather equipment, Oct., p. 48
Lead with purpose, Oct., p. 48
Winter weather forecasting: your plan to succeed, Oct., p. 52
EDUCATION CALENDAR

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

**2017**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 9-12</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>January 19</td>
<td>What You Need To Know About Road Diets</td>
</tr>
<tr>
<td>March 13-16</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>April 23-26</td>
<td>2017 North American Snow Conference, Iowa Events Center, Des Moines, IA</td>
</tr>
<tr>
<td>May 1-4</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>July 17-20</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>August 27-30</td>
<td>2017 PWX, Orange County Convention Center, Orlando, FL</td>
</tr>
<tr>
<td>September 25-28</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>November 6-10</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
</tbody>
</table>

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

= Live Conference (Paid Registration)

= Certification Exam

= Web-based training

APWA members may access past Click, Listen & Learn programs from the Members’ Library at no cost. Programs can be streamed to your computer via the link found in the library. If you have expertise that you would like to share, please use the online Call for Presentations form to describe your expertise and perspective on the topic. [www.apwa.net/callforpresentations/](http://www.apwa.net/callforpresentations/)
resident-elect Donald Trump has made no secret of his desire to fund our nation’s infrastructure during his administration and, in the process, make it second to none. This is certainly music to the ears of the APWA membership. Various amounts of proposed funding have been offered by President-elect Trump, to the tune of one trillion dollars. Consequently, I am optimistic that the 115th Congress will work with the incoming President to provide much-needed funding for our roads, water systems, communications systems, and other valuable areas of infrastructure.

As public works professionals, I know you come to attention when you think Washington “gets it” as far as one of our greatest needs is concerned, i.e., funding the nation’s infrastructure. As the newest member of the APWA Government Affairs team, my perspective comes from twelve years of working at the local level directly with our nation’s public works officials and emergency response partners. I can think of no harder working people. No challenge is too big, no job is too small; the end game is to provide the highest quality of service to the communities and people they serve and represent.

Allow me to deviate briefly to share a personal story, one that is of the “no job is too small” variety. During my time in the Southfield, Michigan Mayor’s office, I received a call from a resident whose driveway, blocked by snow, had not been plowed by a neighbor (it turns out that the young man was ill) and the resident would be unable to make a doctor’s appointment if circumstances did not change, fast. In a matter of ten minutes, I along with one of our public works supervisors—who had just finished a ten-hour shift—drove to the resident’s home, shoveled the driveway, and allowed him to get on his way.

My goal in telling this story is not to provide a self-serving anecdote; it is to share my experience regarding the dedication that I know exists among all public works professionals when it comes to their “get the job done” approach. To bring my point home, I believe that the federal funding and resources dedicated to public works that we may see in the next Congress and Trump administration will support and encourage excellent customer service across the country. Why? I believe that when professionals at the local level know they can count on the support of their elected officials, this leads to a sense of “how can I be the best steward of resources and demonstrate the backing is appreciated?” The core of my belief is centered on the perseverance and commitment I have witnessed firsthand in public works professionals. Rising to the occasion is a hallmark of public works professionals nationwide and with the potential for increased investment in our country’s infrastructure, comes increased attention on the foundational role public works plays in our society. Our elected officials in Congress need to be aware of the work
taking place at the local level. We in APWA Government Affairs are counting on you to tell us your stories. The reason I shared mine is that I know there are THOUSANDS of stories with much greater magnitude taking place every day all over the nation. I hope to motivate APWA members to share their experiences with the APWA Government Affairs staff, so that we can, in turn, share those stories with policymakers.

I, and my APWA colleagues, look toward the future with a renewed optimism. This optimism is born out of an excitement I hope we all share when it comes to working with the new Congress and Administration to place the highest value on our nation’s infrastructure and public works.

We need to help Congress understand the important role that our public works officials play in the day-to-day lives of our citizens. The primary tool in our tool kit is the input and information provided by those of you at the state and local levels. Your professional feedback and experience will help lead the way. The information you share assists us in carrying our industry’s message to elected officials. I am firm in my belief and resolve that through our combined efforts, we can face and conquer the challenges—and meet the goals we set as a team.

Marty Williams is a native of Portage, Michigan and a Hope College graduate. He is the Government Affairs Manager with APWA and has more than twenty years of experience at the federal and local levels of government. Marty currently resides in Alexandria, Virginia with his wife Lisa. He can be reached at (202) 218-6732 or mwilliams@apwa.net.
A New Administration in Washington, D.C.: Time to tell our public works stories in support of infrastructure programs

Lisa Ann Rapp, PWLF  
Director of Public Works  
City of Lakewood, California  
Chair, APWA Government Affairs Committee

Inauguration Day 2017 is upon us, and with it comes the potential for the federal government to make changes in priorities, policies and regulations which eventually make their way to the state and local levels. For the first time in many years, the Executive Branch of the government, and both the House of Representatives and the Senate, will be controlled by the same political party. The results of the 2016 elections represent one of those swings of the pendulum that we have experienced before in our history, and now, after a contentious election season, Americans will need to roll up their sleeves and set about working together to advance our country forward.

The good news is that public works professionals have been doing just that for many years. We work in our communities daily to maintain and upgrade infrastructure, protect the environment, prepare for disasters, and contribute to homeland security. We work with limited budgets, under strict regulations, in difficult environments. We are passionate about our roles as first responders and stewards of infrastructure and the environment, and we have been for all of our professional lives.

The Government Affairs Committee (GAC) is a group of nine APWA members from around the United States who have a passion for telling the public works story to our federal elected officials on behalf of more than 29,000 members of APWA. It has been my honor to be appointed as the Chair of the GAC for a two-year term. The GAC meets monthly by telephone, and in person twice per year, at PWX and in Washington, D.C. in the spring. We work with the APWA Government Affairs staff and Technical Committees to understand the issues and impacts of proposed legislation and regulations, and evaluate APWA proposed position statements addressing those issues for recommendation to the Board of Directors. The position statements provide guidance to APWA’s Washington, D.C.-based Government Affairs staff in their contacts with legislators and regulators.

During our annual spring meeting, we schedule visits with our legislators from our home districts and bring to them the “real world” stories of how their efforts impact their own constituents. These direct examples are the most meaningful to them, and they do keep track of how their constituents feel about issues and refer to this when they vote. In promoting advocacy to all APWA members, we urge you to tell your public works stories to your elected officials when they are at home during district work periods. The local stories about our critical transportation needs told by the GAC and all APWA members were effective in helping to assure passage of the Fixing America’s Surface Transportation (FAST) Act (Public Law 114-94) which is authorized to provide federal transportation funding for the next five years. We need to continue our efforts on behalf of transportation to assure the FAST Act is fully funded in future appropriations.

Another major component of the GAC spring meeting includes meetings with various federal agency officials and congressional staff. During our 2016 spring meeting, we met with a high ranking official from the Federal Emergency Management Agency (FEMA) who shared the agency’s primary components for a pending proposal aimed at reducing the cost of future disasters by rewarding communities which invest in improvements prior to a disaster. He talked about establishing a disaster deductible in which communities would receive credit for pre-disaster actions that help to mitigate the eventual cost of a disaster. In late spring FEMA requested input on this proposal and APWA submitted comments noting particular concern...
for smaller communities and how they may bear mitigation costs.

The members of the GAC are also very enthused about the recent formation of the “Public Works and Infrastructure Caucus” in the U.S. House of Representatives. The formation of the Caucus was announced at a well-attended event in the Capitol Visitors’ Center during National Public Works Week this past May. The Caucus currently has 13 members: nine Democrats and four Republicans.

In the fall, APWA hosted a briefing for congressional staff in conjunction with the Caucus which provided a Public Works 101 overview on water—drinking water, wastewater, stormwater, regulatory impact, etc. APWA Executive Director Scott Grayson, Board member Bill Spearman, and GAC member Eric LaBelle led the discussion. Forty-five congressional staff attended the water briefing and participated in an interactive conversation. The briefing was intended to assist congressional staff as they were working on a 2016 Water Resources Development Act, and to encourage them to utilize APWA as a resource in the future when considering possible changes to the Clean Water Act and the Safe Drinking Water Act.

All of the GAC members are involved in advocacy at the state and local levels as well, and their participation in the GAC has strengthened their skills, expertise and credibility in advocacy at all levels. I have had the honor of chairing the California Chapters Advocacy Committee for the past several years. Our representatives on behalf of the nine chapters in California have taken positions on proposed bills, and contacted authors and committee chairs. Advocating at the state level is very similar to the federal level, and can make a huge difference in project funding and local control.

Lisa Rapp can be reached at (562) 866-9771 or lrapp@lakewoodcity.org.
Tin is among the more practical, useful chemical elements, but it does not get a lot of popular respect. We rely on tin cans (although they do not have much tin in them) but their contents are not the stuff of fine cuisine—unless maybe you’re a cat. A speaker delivering a “tinny” sound has little to recommend it for even an inexpensive music system. But that may change if physicists’ predictions pan out.

It turns out that theoreticians predicted a few years ago that a crystalline one-atom-thick layer of tin—a material called stanene, with similarities to its more well-known carbon equivalent, graphene—would be a very efficient conductor of electricity. Stanene would behave as a “topological insulator,” meaning that electricity would run along the surface and edges, but not through the interior. While there are other topological insulators, tin’s attraction is that the trick is predicted to work at one hundred percent efficiency and, with some tweaking, at temperature of about 100°C, the boiling point of water and not very different from conditions in conventional electronics. In theory, stanene could replace silicon in transistors, leading to computer chips with both higher speeds and lower power consumption than those we now use.

There is many a potential slip between the lab and the chip, however, and the road from theory to practice can be long. Just over a year ago, researchers in the United States and China announced they had produced stanene, although some of their colleagues in other countries are not convinced. Other researchers in India also report producing stanene with different fabrication methods. However, the researchers have so far been unable to verify the material’s electrical properties.

The potential benefits of stanene are so great, nevertheless, that some popular media reports class it among “five wonder materials that could change the world.” And stanene may not be so unique. Topological insulators are understood to be a new class of materials, and may share the limelight with silicene (a single-atom layer of silicon), germanene (germanium), phosphorene (phosphorus), and others.

Each material has its own unique thermal and electrical properties and could, at least theoretically, lead to higher-performing electronics. That in turn could lead to new generations of smart and interconnected devices in all aspects of our lives, possibly bringing public works fully into the much ballyhooed Internet of Things. But that’s another story...or several!
At the start of winter I was in Utah and had to drive, early in the morning, from Park City to the Salt Lake City airport. It just so happened that it was snowing at the time, and in fact, when I walked out to my car, there was a couple of inches of snow already on the car. Given it was early in the winter, the snow had melted on the parking lot and on (most of) the roads. I had allowed myself lots of time before my flight so was not in any hurry.

As I drove down the road to the Interstate, I noticed that the pavement was wet all the way, at least until I came to the intersection with the Interstate. Snow had settled on the bridge over the highway and was beginning to compact, which immediately got me thinking about edge storms, and indeed, this was clearly going to be one of them. The pavement temperature was obviously close to freezing on most of the road, and slightly below freezing on the bridges. It was about 3:30 a.m. at the time, so there was at least three hours before the sun would rise and start to warm the road surface. Given that, I thought, I would expect to see some snowplows out and about putting down some salt to prevent the snow from freezing to the pavement.

I was therefore delighted to see, not long after passing over Pawley’s Summit on the Interstate, a group of Utah DOT plows treating the highway. I was also very pleased to see that motorists (not that there were many of us about at that time) were NOT trying to pass the plows! While that slowed us down a little, it also kept us safe, and that got me thinking about the whole issue of safety and winter maintenance.

Well-executed winter maintenance is a great safety tool. Studies have shown that appropriate winter operations reduce crash rates, and fatalities, by between 85% and 88%. Those are significant safety benefits. Additional studies have shown that while even today crashes are more likely to happen on winter roads than on dry pavement the situation is much improved from forty years ago. In the time period from 1950 to 1979, winter weather gave rise to an increased crash risk of about 110% over dry roads, while in the period from 1990 to 2005 the increased crash risk was only about 45%. That is a substantial improvement, and is most likely due to improved winter maintenance operations over that period.

But the added safety benefits of winter maintenance were not uppermost in my mind as I drove along a safe distance behind those Utah DOT plows in November. I was thinking more about the safety of the plow operators. It is a requirement of the job that a snowplow driver will be out plowing snow when the weather is at its worst. And to add to the challenges they face, there are unfortunately a number of drivers on the road who do not drive with sufficient care during winter storms. While working a few years ago with one of the Iowa DOT garages on Interstate 80, I was surprised to learn that most of the operators had been rear-ended while plowing snow, which cannot be a good experience!

Of course, plowing on a high-speed road like an Interstate is perhaps a bit more hazardous than plowing on a city street, but I have noticed that the frequency of careless winter drivers is not any less on city streets than on Interstates, so while the crashes will likely be at lower speeds, I suspect that they nonetheless occur on city streets as well as Interstates.

While other drivers on the roads are a challenge for all road users from time to time, the nature of snowplowing adds extra challenges for our snowplow drivers. Not only are they out there on the roads during the worst possible weather, but they are also out there for a very long time. That means fatigue can be a factor with which plow drivers must contend, and it is important to encourage plow drivers to take breaks as needed when they are on duty. Driving a snowplow while drowsy is not a good thing in so many ways!

Speaking with maintenance supervisors, I have come across a variety of approaches to winter maintenance safety. One that is no surprise is the notion of regular safety meetings, which are short and sweet and at which one safety idea is presented and discussed, most typically at the start of a work shift. Another idea that is common is using pre-storm briefings to provide reminders about the need for pre-trip inspections (an important, and of course required, safety step that all
plow drivers should do every time they take out their trucks) and the need to handle drowsiness appropriately.

Some agencies address some of the fatigue issues in pre-season training. This too can be helpful, since it reminds operators before the first snowflake has fallen that there might be a time in the coming winter when they are on call for a bunch of days (or nights) in a row, and under such circumstances they will need to have made plans to combat fatigue. The winter of the polar vortex a couple of years ago put many Midwestern agencies on duty for more than 50 days in a row, and the snow blitz on Boston the following year created similar issues for agencies there as well. It always helped to have some ideas in mind before the bad news (and the long snowfalls) hit!

Recent events close to home remind me that these general issues of safety are not the only concerns out there for public agency workers. In Iowa we were recently rocked by the deliberate killing of two policemen in ambush-style shootings. While thankfully there have not been any similar events involving plow drivers, all agencies should have in place procedures for their operators to follow when it comes to assisting stranded vehicles and similar situations.

The bottom line for snowplow operators is of course very similar to the sentiment presented by Sergeant Phil Esterhaus of the 1980s television show “Hill Street Blues”: “Let’s be careful out there...”

Wilfrid Nixon can be reached at (239) 231-3305 or wilf@saltinstitute.org.
Impact and recovery from an EF-4 tornado

Jim Proce, MBA, PWLF, Assistant City Manager, City of Rowlett, Texas, and member, APWA Leadership & Management Committee; Ed Balderas, Assistant Emergency Management Coordinator, City of Rowlett, Texas

Have you heard about public works achievements and wondered “How did they do that?” The Leadership and Management Committee’s 2017 series will focus on public works success stories, exploring how agencies accomplished their successes and how you can implement similar strategies in your agency.

On December 26, 2015, the City of Rowlett was hit with an EF-4 tornado. As a result over 1,296 homes were affected. Total destruction of many of these homes was evident only moments after the hit. The path of destruction was over three and a half miles long and as wide as half a mile. Over three hundred vehicles were destroyed. All street signs, streetlights, and street trees in the path were destroyed or damaged. Traffic signals were destroyed and damaged. One of the water towers was severely damaged requiring that it be immediately drained.

While the destruction witnessed was insurmountable, the recovery exhibited was unbelievable! Anyone who witnessed the efforts of this community, the staff, and the response from our friends asked, “How did they do that?”

Working with emergency management staff, public safety officials, public works staff, and mutual aid response, the Rowlett response was nothing short of a miracle. The sheer volume of material moved, reduced, sorted and recycled was not only the right answer, but it was cost effective, saving the citizens of Rowlett millions of dollars.

As a member of the North Central Texas Council of Governments (NCTCOG) Public Works Emergency Response Team (PWERT), the Rowlett staff engaged in the regional public works mutual aid agreement two years earlier. (Thanks to PWERT Chairs: Ronnie Bates and Bob Kopp, thanks guys!) Such agreements are typical in the public safety world, but many public works departments do not have such agreements in place. With the vast resources available throughout the DFW Metroplex, such an agreement could be the model of how public works can do business in multi-jurisdictional emergencies. Previously, Rowlett had only been called upon to respond under this agreement assisting in a tornado and flood responses in other cities, but that changed on December 26, 2015. For more info on the agreement form go to: http://www.nctcog.org/ep/Special_Projects/PWERT/.

Upon first inspection the streets of Rowlett were virtually impassable. Rowlett has limited equipment, but it was well positioned and prepared with the PWERT mutual aid agreement in place, and the response was overwhelming. Faced with limited access to its primary landfill during the early stages of the cleanup, Rowlett was forced to stage materials on City property. With

Tornado debris at the PGBT Water Tower

continued on page 40
the assistance of 16 public works departments from the DFW region, Rowlett was able to clear all of the rights-of-way in the affected area in about two weeks. Assistance was offered from as far away as Florida, Kansas, California and Kentucky. The outpouring of unsolicited volunteer assistance from many of the volunteer agencies throughout the region was also overwhelming, and served to further reduce the cost to the City.

Almost 130,000 cubic yards of vegetative and construction and demolition (of the 300,000 estimated totals) debris was moved through the use of these resources prior to enacting a debris removal contractor. Without this agreement in place, over 8,000 truckloads of debris would had remained in the streets of Rowlett for an extended period of time, severely delaying search and rescue operations and the recovery efforts.

Throughout the disaster, the community was updated regularly through social media, news media, an information forum, citizen surveys, several direct mailers and the City’s television station, RTN16. Multiple YouTube clips and public service announcements were developed and aired on Facebook, YouTube, RTN16, and local and regional news. Several examples of these video productions are provided as follows:

- https://youtu.be/rvgXh4gyCnE
- https://youtu.be/uEMIziz-3Zw
- https://youtu.be/_N_RLLVMh_I

Newsletters were routinely distributed through all available mediums, including hard-copy handouts in affected neighborhoods. A sample of one of these newsletters is shown below.

Once the movement of debris began (within 24 hours of impact), staff was informed that the City of Garland landfill was unable to accommodate Rowlett debris. Coming off of the Christmas holiday and having been hit themselves by the same tornado, they were not prepared for the influx of debris as many staff were on vacation. The result was us having to immediately establish temporary debris sites. The first site was City-owned property on the President George Bush Turnpike (service road to the turnpike) which is a twenty-acre utility site where one of our water tower facilities and storage yards is located. Staff immediately applied for authorization to the Texas Commission on Environmental Quality (TCEQ) to allow use of this site as
a temporary storage for construction and demolition debris as well as vegetative debris. A second site was identified and efforts to lease that site, which is located a half mile north of the primary site and privately-owned, were pursued and eventually acquired.

As debris was deposited on the staging areas, it was sorted for the purposes of recycling and reductions. Roll-off dumpsters were placed onsite and steel, aluminum, and other metals were pulled from the debris to minimize materials that would eventually be brought to the Garland landfill.

A tub grinder was brought in to reduce the vegetative debris. It was estimated that well over 100,000 cubic yards of vegetative debris was ground down to about twenty-percent of the original volume. Ultimately this mulch was hauled away and used for cover at the landfill.

Plastic (polyethylene) was pulled from the debris and Waste Management, the City’s solid waste contractor, retrieved this material. Additionally, the remaining C&D debris was compacted by crushing it with a bulldozer, further reducing the volumes down to fifty-percent of original volumes hauled in. The ability to remove recyclables and the reduction efforts minimized the materials that eventually went to the landfill.

During the initial response and recovery phase, an outpouring of volunteers arrived and became difficult to manage. There was no central volunteer management system in place. The volunteer efforts were chaotic. It was not until the formation of a Multi-Agency Resource Center and City-established Long Term Recovery Committee, sanctioned by the City Council, was in place and functioning that the volunteer efforts became more productive.

A donation center was established early in the process. Most churches in the area had taken on this role only to find that they didn’t have the space, resources, or staff to manage this effectively. Once the City secured a building from Dallas Area Rapid Transit (DART), the process was centralized and all of those wanting to assist could manage the system much more effectively.

Several other interesting initiatives were part of the response and recovery process that are easily replicated for others encountering such challenges.

Having lost all of the street name signs, staff painted the street names to facilitate finding one’s way around. Bagsters were provided to bordering neighborhoods to allow them to help in the cleanup efforts. Waste Management donated these and picked them up at no charge to these folks helping out. We provided citizens the ability to dispose of their own debris, if they were able, by providing free access to the landfill.

At the end of this adventure, despite the Rowlett team certainly feeling as if they did an outstanding job, there are some lessons that were learned to be shared by all. These include, but are not limited to:

• You need a plan and you need to execute that plan
• Understand and know your voluntary agencies
• Mutual aid agreements are needed for staff and resources
• You need to know all of the regulatory agencies and how to navigate the regulations
• Documentation is paramount to your success and potential reimbursement
• Make sure everyone knows their roles and assignments
• Have prepositioned agreements and contracts in place
• You will need expert legal advice, subject matter expert consultants, and experienced contractors (don’t try to do everything yourself!)
• Practice, train, practice, train, practice, train!
• Communicate with everyone!

It has been almost one year since the Rowlett tornado hit and Rowlett has recovered, thousands of volunteers, cash donations, staff efforts, citizens efforts, work of the committees, over 2,000 building permits, and well over $51,000,000 in redevelopment and growing... and “That is how we did that!”

We are Rowlett Strong!

Jim Proce is the chief operations officer for the City of Rowlett and is a former public works director. He has worked many declared emergencies throughout the south and has been in public service for 35 years. He was an APWA Top Ten Public Works Leader of the Year award recipient in 2016. Jim can be reached at jproce@rowlett.com.

Ed Balderas has been with the City of Rowlett for a little over three years, has a Master’s in Public Administration, and teaches an Introduction to Emergency Management course as an adjunct instructor at the University of North Texas. He has recently been selected for the APWA Emerging Leaders Program. Ed can be reached at ebalderas@rowlett.com.

Look for both of them at PWX in Orlando in 2017!
Preparing for disasters

Peter Higgs, B.E.
President
Institute of Public Works Engineering New Zealand
Gisborne, New Zealand

In New Zealand, at the bottom of the South Pacific, we are blessed to live in an island paradise.

We are also blessed, sitting as we do on the edge of the Pacific Ring of Fire, with many natural disasters—earthquakes, tsunamis, volcanoes—and storms and flooding. We feel the impacts of climate change. You name it, we’ve got it.

Through legislation and actively involved communities, we also have Civil Defense Emergency Management (CDEM) processes in place to deal with these.

Ironically, as I touched down in New Zealand in early September after presenting on this topic to the APWA PWX conference in Minneapolis, I was inundated with messages of a large, offshore earthquake close to my region.

As the region’s civil defense controller, there was little I could do. But our potentially vulnerable communities had taken action and heeded the message—if an earthquake is long and strong, be gone.

CDEM processes incorporate the 4R’s—reduction, readiness, response and recovery—with the main focus traditionally on response then recovery. The ambulance at the bottom of the cliff.

We have also focused on building more things to protect ourselves from events—engineering our way out of a problem. The trouble with this approach is that structures will fail and there will always be a larger event than designed for.

Climate change is increasing the frequency and intensity of storms, flooding and sea level rise. What was once a one in one-hundred-year event, by 2050 could be a one in two-year event.

Stopbanks and flood works will no longer afford the level of protection that prompted the original investment decision.

We’ve tried to introduce mitigation of natural hazard risks into our town and land planning but the messages “don’t build in a floodplain” or “don’t build near the coast” have not been heeded.

Land development is seen as a short-term matter: what’s the rate of return on investment? Land development is conflicted between owner rights and the public good or cost in the long term, and hampered by short-term political cycles.

Planning solutions are often short-term and simplistic. Raising a dwelling’s floor level, for example, doesn’t allow for climate change, upstream land use changes or controls by other jurisdictions within a water catchment.

New Zealand has made a recent shift to managing natural hazard risks through a National Disaster Resilience Strategy, resilience being the 5th R. While significant, this change still falls short of real resilience as it maintains a “siloed” approach to disasters. It doesn’t deal with all the risks communities face: technology disruption, financial crises, aging infrastructure, renewals funding, aging/changing demographics.

Our uncertain future includes technology changes, smart controls, smarter cities, and data collection and management. We are well connected. But what if the power goes out? What if connections fail?

We need an integrated approach to address all risks—financial, land planning, policy and infrastructure—and how communities can respond to changes and events.

It’s not just about assets; it’s the activities they’re used for to deliver the services our communities need.

Resilience is about being able to move from disaster response and engineering solutions to managing the cost of risk, then ensuring service delivery and performance. The ability to bounce back—and bounce forward—after all disruptions.

We need to build community resilience through a de-risking strategy, the idea being to:
Shift development investment away from short-term business opportunities
Deliver on safer communities
Focus on services delivered rather than assets used
Integrate risk mitigation with policy, land planning, financial and infrastructure strategies
Focus on community aspirations to deliver a guarantee of service performance

So how do we do this?

We help communities take ownership of their future. Many communities are developing resilience strategies. Initiatives developed after New Zealand’s Christchurch earthquakes include:

- Community resilience at a local and individual level
- Integration of land and financial planning with infrastructure
- Risk-based infrastructure renewal programs
- Financial risk management
- Metadata standards—decision making framework

A range of potential disruptions inform evidence-based decisions.

Waimakariri District Council now overlays its infrastructure renewal program with criticality, vulnerability and risks associated with disaster events. Under traditional approaches, many components were programmed for replacement based on remaining life. These have been delayed and other assets given priority based on criticality or vulnerability to the overall network.

Waimakariri is reviewing its strategies to deal with the financial implications of a major disruption occurring. Rather than having blanket insurance cover, the plan is to insure for big events and carry the financial risks for less-significant events. This benefits asset owners, by reducing costs, and insurance suppliers, by reducing potential exposure.

While these initiatives are driven by organizations, communities ultimately need to take responsibility and own these decisions.

And that can only happen if we, working in the public works sector, actively engage with our communities—freely providing them with the information and science in an understandable form and working collaboratively with our communities to develop resilient solutions for the future.

When disaster strikes, it strikes us all. There’s no cavalry coming over the hill. We are all in it together. We are all civil defense.

Footnote: At the time of writing, there was a severe 7.8 earthquake in the north of the South Island of New Zealand. This inflicted significant damage to infrastructure. It also caused damage to buildings in Wellington (NZ’s capital) some 400km north. A real test to our resilience.

Peter Higgs can be reached at president.nz@ipwea.org.
The Southeast U.S. Public Works Response to Hurricane Matthew

Brian Usher, PWLF
Director of Public Works
City of Largo, Florida
APWA Past President

From central Florida to tidewater Virginia, public works crews worked feverishly in response to Hurricane Matthew. Thankfully, the main force of the storm stayed offshore until it was significantly degraded, and the majority of damage was due to storm surge and flooding. We who deal with these types of storms know how bad it could have been. I do not want to minimize the impacts that these states felt, but it could have been so much worse. Public works crews worked around the clock to open blocked roads, clear hazards, restore drinking water and sewer systems, all while residents anxiously awaited to return to their homes. Several of the Southeast areas’ stories were ongoing a week after the storm passed. These are stories of dedicated, committed workers, from many jurisdictions, working together to help stand their communities back up.

Martha Graham, Public Works Director for St. Augustine, Florida, shared the following:

“I want to acknowledge and thank all those who have come to our aid and the courage and tenacity of our city crews who have given 100% and are still giving tirelessly. Our department is 110 folks all working recovery.

We currently have over 25 people from five different cities with tanker trucks, pumps, grapple trucks, rear loaders (garbage trucks) and Vactors, this all in addition to our debris removal contractor who just got started today and will begin to gear up. Thanks to Orange Co. Utilities who brought a fleet bigger than our own, City of Tallahassee, TOHO, Kissimmee, St. Johns County, and City of Dunedin. Our barrier island was completely over-topped by at least three feet of water, many homes were flooded. Everyone probably saw the video on CNN—it makes us very sad to have our city torn apart in front of national TV. I had to tell people to quit sending me photos while I was in the EOC.

We are now in full recovery mode, our utility system was even more resilient than we expected at the treatment plants, but our sewer system took a beating. We are still working on restoring normal operations, but have numerous SSO’s and suffered breaks and the electrical panels for pump stations do not like being soaked in saltwater for several hours. We have 35% of the traffic signals out, though it has been somewhat manageable traffic-wise because there are no tourists and many folks are cleaning out their homes. We estimated 35,000 CY of debris. (We also have 70 miles of streets.)

We were lucky to have no loss of life and no injuries so far, and no major road losses (in our jurisdiction), just cleaning up debris.”

Flooding in front of City Hall in St. Augustine, Florida
Iris Hill, Town Administrator of Edisto Beach, South Carolina, clearly explained to her community the complicated, difficult task required to ensure re-entry after evacuation when she shared the following on the town’s Facebook page.

“I know everyone is confused and frustrated regarding the delays in entering the beach. We are scheduling re-entry as quickly as possible to allow owners back to assess damage and begin cleanup.

The schedule was developed based on road access (debris, water) and safety and damage assessments. We had to clean debris off roads and have power lines secured. We have scheduled access away from work that continues to be done by electric crews and the National Guard. There are over 178 National Guard on the beach working 24 hours a day. The National Guard is using heavy equipment to remove the feet of sand on Palmetto Blvd and cross streets in the first 11 blocks. We are having to accommodate, feed, provide

continued on page 46

Cindi Lane, Communications Manager with Palm Coast, Florida, shared:

“The City of Palm Coast Public Works Department has played a major role in our response to Hurricane Matthew. As the storm began to hit Flagler County on Thursday evening, our Palm Coast PW crews worked all night long to clear falling trees, signs and traffic signal heads. They were finally pulled off the streets about 8 a.m. Friday as sustained winds reached 45 mph. Around 3 p.m. Friday, when we got clearance from the EOC that we could resume work, our Fire Department did a street-by-street review and public works crews were immediately dispatched out with the goal of making the streets passable for emergency vehicles and Florida Power & Light (FPL). Initial assessment showed about 20 percent of Palm Coast’s streets had trees down on the streets and fallen trees entangled in power lines. Public Works was able to clear the vast majority of those streets by Friday night, with major roadways as the top priority. The department has worked around the clock since, clearing streets of trees and debris, assisting FPL with removing trees that have to be removed for power restoration, cleaning up parks and trails, removing trees that fell from the public ROW onto private property, operating traffic signals by generator, repairing signs and more. Their hard work has played a critical role in returning our city of 83,000 residents to an operating function.”
facilities, etc. for these recovery workers.

We had power partially restored today... With the restoration of power we can work on getting our water and sewer system online.

The sewer system was inundated with stormwater and the wastewater plant and holding ponds are full. Until we can get our 15 wastewater lift stations working to pump the wastewater and the irrigation system that disperses the treated wastewater on the golf course repaired, we cannot have additional wastewater put into the system. We know everyone wants to clean, repair and resume their lives, but our utility system cannot handle it until repairs are made.

We have water connections on the beach side that are broken in the first 7 blocks of Palmetto. Once the sand is removed, we can access these water meters to shut them off. Also we have a 6” water line break on Jungle Shores we are working on getting repaired and/or isolated. So even with power, we do not have water in most places and the sewer system is not ready for additional loads. Until these issues are resolved we cannot allow residents to stay.

Even with these repairs, some residents will still not be allowed to stay, because they either will have no water, wastewater or their damages are too severe.

Although most properties have minor or no damage, our neighbors on the beachfront in some areas were not so fortunate. We are sending them pictures and working to get them onto the beach to begin repairs. We are also answering requests for information as quickly as possible.

Please keep in mind we are working as quickly as possible to get everyone home.

I commend our staff and volunteers who have put aside their needs to address those of the Town. It is truly astounding that with a staff of 35 we have owners coming back within 3 days of a devastating storm.”

We in public works cherish the cooperative relationship we have with our fellow emergency responders, especially in the police and fire departments. However, they will soon be back handling their routine calls and functions, while public works will be working for years to restore

their communities’ physical infrastructure and sense of community fabric. Public works is not honored with special sales at local big box stores, or other programs offered for what the public believes are their first responders. I honest shake my head when I see special offers for events and tickets for police, fire and EMS responders, but no mention of the public works industry. We in public works, through the American Public Works Association and sister professional organizations, have worked hard over the past 15 years to bring attention and focus on these amazing professionals. Unfortunately, it is often only after events like these that their communities learn the dedication and quality of life these services provide.

I was so proud to represent public works professionals last year as President of APWA, and have advocated for due recognition of all they provide. Our hearts break at the devastation along the Atlantic Coast and inland in North Carolina. But I find comfort in personally knowing many of the public works professionals who faced this challenge, and know they work ceaselessly to ensure they can do all that is possible to return their communities back to normal as quickly as humanly possible.

Brian Usher can be reached at (727) 587-6741 or busher@largo.com.
t’s Thursday, October 6, 2016, and Hurricane Matthew is approaching the southern coast of Florida. National Hurricane Center projections have the southeastern Atlantic Coast of the United States in danger from this Category 5 cyclone.

Like other cities in Florida, the City of Gainesville has declared a state of emergency and activated our Comprehensive Emergency Management Plan (CEMP). Due to the magnitude of the event, the city has gone to a Level 3 activation which means the activation and staffing of our Emergency Operations Center.

In activating the CEMP, the City activated the following functions: Unified Command, Operations, Planning, Logistics and Finance sections. The Joint Information Center was also staffed with a rumor control hot line via the Alachua County Emergency Management Center (counties are responsible for EM in Florida).

Staff is making preparations for the onset of the storm. We are rotating our staff, in shifts, to go home and activate their personal emergency plans and return to work prepared to stay and work at least three days. We require each employee to have a personal emergency plan that deals with their family and property in preparation for these types of events. The city’s Emergency Operations Center is in constant communication with the County EOC.

Meanwhile, back in the office, we are checking our three-person-deep emergency management Incident Command System (ICS) roster. Public Works management must determine what staff is available (some employees had previously been away on leave) and make assignment to the Command. During the onset and initial response to a disaster, such as a hurricane, the City works 24 hours continuously in Alpha (7:00 a.m.–7:00 p.m.) and Bravo (7:00 p.m.–7:00 a.m.) shifts.

Public Works must provide staff to fill roles in: Unified Command; Operations; Planning; Logistics; Finance; and, Joint Information Center (JIC). Each of these functions also included representation from Police and Fire as well as the City Manager’s Office.

Flashback to the 2004 Hurricane Season: In 2004, Gainesville was impacted by Hurricanes Charley, Frances and Jeanne. We operated under unified command for a couple of months during the response and recovery from these storms. It required that Public Works, Police and Fire work together to restore lifeline services to our community.

Going back even before that time period, the City of Gainesville is the home of the University of Florida. The University of Florida has a football stadium that seats in excess of 90,000 people that attend Florida Gator Football. Given the nature of this event, it requires that the University of Florida, State of Florida, Alachua County and City of Gainesville work together to manage these events. The respective law enforcement agencies, fire rescue agencies and public works agencies have been working together to manage these events since the early ’90s—before NIMS and ICS were commonplace. The working relationships and planning were developed.

As a result of that working relationship, the City completes a disaster preparedness drill each spring, prior to the start of hurricane season. The Unified Command Team meets monthly year-round to discuss emergency-related issues and to maintain the working relationship between individual team members.

Going back to Thursday, October 6, 2016, Gainesville’s Unified Command is established in preparation of the onset of Matthew. The working relationships between the various sections are great because we practice ICS on a weekly basis. More importantly, we practice ICS with our county and University of Florida counterparts on a routine basis and have established relationships with those groups.

In the hours leading up to the onset of Matthew on north Florida, the City’s unified Planning Section worked together to develop planning

continued on page 48
objectives for next operational period. Those objectives were developed based on meeting the needs of the community and maintaining and restoring lifeline services as they are impacted.

As the outer bands of Matthew began to impact the coastal and inland counties, our unified Operations Section worked together to respond to the needs of our citizens. Most of the issues that needed to be addressed were downed trees and debris management caused by the wind gusts.

Moving into Friday, October 7, Matthew has opted to take a more easterly track. After minimal rain and completion of debris management, the Unified Command Team makes the decision to disband. Our prior training and ICS experience was well utilized as we were prepared as an agency (and not just Public Works in isolation) to meet the needs of the citizens we serve.

If your agency does not practice the Incident Command System for emergency management, it’s not too late. As public works officials, we can take the lead and reach out to our police and fire departments and begin the dialogue about Unified Command. The critical part is building the relationships and then expanding upon them during an emergency.

Philip Mann can be reached at (352) 334-5070 or mannpr@cityofgainesville.org.
Hennepin West Mesonet: Providing emergency managers with real-time environmental information

Sarah Karel
Community Engagement & Meteorology Coordinator
Hennepin County Emergency Management
Medina, Minnesota

Background

The Hennepin West Mesonet is a life-safety tool designed to gather and synthesize vital data on weather, soils and water to help emergency leaders make critical public warning and tactical decisions. The Mesonet is a network of remote sensors (Figure 1) which provide highly-accurate, near real-time measurements of weather, soil and water conditions. This data is immediately sent to a central database where software automatically develop graphic products to show what is happening across Hennepin County and surrounding areas for emergency leaders to use in critical situations. All of the data is available at hennepinwestmesonet.org.

Figure 1: Medina (HE04A) Mesonet station

Recent experiences across the Twin Cities metro area reveal a longstanding vulnerability to dangerous weather or human-caused conditions that form very quickly without clear advance indications. Fatal tornadoes in Rogers, Minn. (2006) and in North Minneapolis, Minn. (2011) both point to a need for more complete and rapid surface observations from a network of sensors spread across the area. A fatal landslide in Saint Paul, Minn. (2013) also shows that near real-time soil temperature and saturation data across the metro could be useful in providing alerts for evolving dangerous conditions. The ninth-coldest winter in Minneapolis, Minn. (2013/2014) resulted in extreme frost depth. Hennepin County and surrounding areas had prolonged water service disruptions, fire protection impacts, among other things because of water main breaks and frozen pipes due to extreme frost depth. Other vulnerabilities exist in our area to rapid-onset flash flooding, straight-line winds or hazardous materials releases which require many sensors with quick detection capability to provide useful public warning, evacuation decision-making, or resource coordination.

The Hennepin West Mesonet coverage area is 150 miles by 115 miles in central Minnesota. This is about 20% of Minnesota’s area, with approximately 70% of Minnesota’s population. Each Mesonet station represents the local area where it is located and helps protect the residents and infrastructure located there by providing high-quality immediate data. In addition to needing sensor stations across a wide area for warning purposes, it makes these stations usable across a wide variety of disciplines in the emergency response community, one of them being public works. Having real-time atmospheric and hydrological data for public works to know exactly if their city is being affected reduces the time it takes to coordinate response and resources that may be needed.

Stations are located on a small patch of ground about 40 feet square of natural grass, which is surrounded by an area free from any wind obstructions out to about 90 feet from the center. A 30-foot aluminum structure holds most of the sensors that detect wind speed, direction, temperature, humidity, solar radiation, and barometric pressure (Figure 2). Rain gauges and soil sensors are placed on or in the ground nearby, with some stations having frost depth continued on page 50
sensors included in the sensor suite. Stations use solar energy and require no external power. Data is sent via cellular phone or radio to the network database. Depending on circumstances, a small perimeter fence may be installed to protect the equipment at the station.

received 8-10 inches of rainfall within an eight-hour period. The Hennepin West Mesonet was able to provide real-time rainfall data in the city of Maple Grove where one of the stations is located. It was because of this real-time data that Hennepin County Emergency Management was able to coordinate with local and county public works directors to help with barricades that were needed to block flooded roadways to keep the public safe. Another emergency situation in 2016 occurred in July when a wind storm went through northern Hennepin County and destroyed 15 miles of a transmission power line. This storm also produced debris in the form of other downed power lines, trees, and infrastructure damage.

Future

The Hennepin West Mesonet is still considered young in its development. The goal is within Hennepin County to have a five-mile radius with station spacing. This would put the total number of stations within Hennepin County around 25. Furthermore, additional Minnesota counties are beginning to partner and are looking to install stations in their areas. This will help with the overall coverage and would not only allow public works departments and other partners have real-time meteorological and hydrological data for their local area, but also allow them to view weather systems as they move into their area, giving them a longer lead time to make decisions. The Hennepin West Mesonet is a great example of how bringing together a wide range of departments and agencies such as emergency management, public works, and public safety benefits everyone.

Sarah Karel can be reached at (612) 596-0757 or Sarah.Karel@hennepin.us.

Real-World Examples

As mentioned above, the winter of 2013/2014 was especially cold across the state of Minnesota; with little snowpack, the frost was allowed to travel extremely deep affecting water mains, fire hydrants, and water service to many homes. In some areas, this was so extreme that temporary sheltering services were needed. Frost depth is not only important during deep frost years, but it also gives indication of the spring thaw. The later in the spring the ground stays frozen, the better chance for spring flash flooding during a rain event. It also allows public works the ability to know when frost is out, so they can start repairing the issues that were non-emergent during the winter.

Another recent example of the Mesonet’s use for resources needed was during an extreme rainfall event in September 2016. Maple Grove, Brooklyn Park, and Brooklyn Center
Local public works departments and state departments of transportation have essential roles and responsibilities in emergencies and planned events. When disasters strike, these agencies are needed to clear debris from the streets and roads so that police, fire and paramedical responders can access stricken areas. Public works and DOTs also construct temporary levees to divert flood waters, help rescue and evacuate victims, transport needed supplies, and provide traffic and perimeter control.

Though listed by the Department of Homeland Security as one of the five disciplines in the Emergency Services Sector (https://www.dhs.gov/emergency-services-sector), police, fire and emergency management agencies are reluctant, if not outright opposed, to recognizing and accepting public works as a “first responder.” The legal definition of “first responder” was the subject of a Transportation Research Board National Cooperative Highway Research Project completed in 2013 that concluded, not surprisingly, that there is no official federal government definition of the term and that it varies considerably among the states. Yet, the other disciplines are adamant that “first responder” applies only to them. Regardless, public works can rightfully be considered an “emergency responder.” But it takes more than just using the term to gain acknowledgment from the other disciplines and the public; we also must “walk the talk.” And that means having the right training credentials.

Most public works/transportation employees have taken the FEMA IS-100: Introduction to Incident Command course, either online or in a class. Many have also taken IS-200: ICS for Single Resources and Initial Action Incidents and IS-700: Introduction to the National Incident Command System (NIMS). IS-100 and IS-700 are required courses for law enforcement, fire and EMS personnel but, at this time, are still voluntary for public works and DOTs. However, FEMA does require all employees engaged in disaster efforts to have IS-100 in order for the agency to be eligible for reimbursements. That aside, all employees within those agencies should complete the three courses above so that they have a basic understanding of ICS and NIMS.

Agency executives, managers and supervisors should also take ICS-300: Intermediate ICS. Additionally, senior officials should take ICS-400: Advanced ICS. Both courses are essential for working in complex and often chaotic situations. They are regularly offered through each state’s Emergency Management Office. (In addition to IS-100, 200 and 700, IS-800: National Response Framework, is also a prerequisite for taking ICS-300 and 400.) Whether operating in the field or in a command center, public works/DOT officials must understand the concepts, principles, processes and terminology of ICS to the same extent as their colleagues in police and fire. Altogether, these courses provide a solid foundation for assuming any of the key positions, including Incident Commander, when events occur.

But training and credentialing should not stop there. APWA collaborated with FEMA several years ago to develop four Independent Study courses specific to public works:

- IS-552: Public Works Role in Emergency Management
- IS-554: Emergency Planning for Public Works
- IS-556: Damage Assessment for Public Works
- IS-558: Public Works and Disaster Recovery.

Related to the above and quite relevant to public works are:

- IS-632: Introduction to Debris Operations
- IS-634: Introduction to FEMA Public Assistance
- IS-703: NIMS Resource Management
- IS-706: NIMS Intrastate Mutual Aid

Credibility through credentials

Dave Bergner, M.A., PWLF
Principal
Monte Vista Associates, LLC, Mesa, Arizona
Member, APWA Emergency Management Committee

continued on page 52
• IS-318: Mitigation Planning for Local and Tribal Communities
• IS2900: National Disaster Recovery Framework Overview.

Each Independent Study course usually takes a few hours; the ICS-300 and 400 classes are several days. All the emergency responder disciplines face the same dilemma—how to make time…and interest…in taking the course when so much time is needed for routine operations and that certainly applies to public works. But it can be done, and has been done successfully by many. The upside is that less time is needed to complete an online course as the student becomes increasingly familiar with repeated terms and concepts.

Public works/DOT employees can also earn FEMA’s Professional Development Certificate (PDS) by completing the following online courses:

• IS-706: NIMS Intrastate Mutual Aid
• IS-120: Introduction to Exercises
• IS-230: Fundamentals of Emergency Management
• IS-235: Emergency Planning
• IS-240: Leadership and Influence
• IS-241: Decision Making and Problem Solving
• IS-242: Effective Communications
• IS-244: Developing and Managing Volunteers.

FEMA’s Emergency Management Institute (EMI), located near Washington, D.C., offers an extensive range of courses and at both its campus and around the country. A number of these are specific to key positions within the ICS structure. More information is available at: https://training.fema.gov/emicourses/schedules.aspx.

Closely related to and intertwined with general emergency management is Traffic Incident Management (TIM). Traffic incidents occur everywhere, every day, and public works/transportation is often involved to some extent. As TIM is based on ICS concepts and practices, we must be well trained in the ICS fundamentals so that we can best communicate, coordinate and cooperate with the other responder disciplines.

APWA and the Federal Highway Administration are joining together to offer the free four-hour Traffic Incident Management Responder course at the 2017 Snow Conference and the 2017 PWX. Eventually, it will be offered at APWA chapter events as well. More information about TIM can be found at: https://www.fhwa.dot.gov/goshrp2/Solutions/Reliability/L12_L32A_L32B/National_Traffic_Incident_Management_Responder_Training_Program.

Finally, it is vitally important for each agency to regard emergency management as a primary responsibility that requires year-round planning and preparation. Public works spans a wide range of the NIMS spectrum as it is extensively involved in mitigation, response and recovery. There are certain critical functions that only public works can perform. We can no longer sit by the phone waiting for a call; we must proactively build and sustain good working relationships with counterparts in other responder disciplines so that we are regarded as full and equal partners in emergency management. With sufficient training and credentials we can walk the talk.

Dave Bergner is a retired Public Works Superintendent, a former Emergency Services Planner and currently a Traffic Incident/Emergency Management Specialist. He is a three-term member of APWA’s Emergency Management Committee and has served on other national committees concerned with emergency management including the National Traffic Incident Management Coalition. Dave is also Chair of the Transportation Research Board’s Maintenance and Operations Personnel Committee. He can be reached at dbergner@gmail.com or (480) 699-4043.
The APWA Utah Chapter Emergency Management Mutual Aid Alliance

Tim Peters, PWLF, Public Services Manager, City of West Jordan, Utah, and APWA Utah Chapter Emergency Management Committee Vice-Chair; M. Leon Berrett, P.E., Operations Associate Director, Salt Lake County Public Works, Midvale, Utah, APWA Utah Chapter Emergency Management Committee Chair and member of APWA National Emergency Management Committee

Need for a Public Works Mutual Aid Alliance

After the tragedy of 9/11, President Bush recognized public works as first responders (Homeland Security Presidential Directive 8). Since that time, more and more communities are recognizing the vital role of public works in an emergency or disaster. The need for mutual aid agreements for public works becomes especially evident when large events happen. Like other agencies, public works can easily become overwhelmed. The ability to partner with other communities is not only beneficial, but critical to the recovery process.

An emergency or disaster is characterized as a situation which presents an immediate risk to life, property or the environment which generally requires prompt intervention in order to prevent a worsening of the situation. While many emergencies are self-evident, many smaller incidents are at the discretion of the observer to determine whether it qualifies as a crisis. However, most would agree that an incident generally becomes an emergency when the agency’s resources are exhausted while there is a continued demand.

Many public safety agencies have been using mutual aid agreements for years. Those agreements were established to provide emergency assistance to each other in a time of need. When the response and recovery operations exceed the local resources and capabilities, the agency exercises their mutual aid agreement to obtain assistance from another participating agency. Such calls for mutual aid are typically the result of incident escalations as determined by the incident commander.

"As has been stated before in many ways, change is the only constant. True resilience comes only from a perennial ability to adapt to evolving environmental and man-made challenges of immense proportions. As public works organizations we need to evolve continuously, train extensively and collaborate repeatedly with many disciplines and agencies that a decade or so ago we may have only interacted with occasionally, or from afar." – Mike Sutherland, APWA Emergency Management Committee member

The APWA Utah Chapter Emergency Management Committee recognized a need to develop an alliance between public works agencies to provide assistance across jurisdictional boundaries during a time of need, similar to what public safety agencies have been practicing for some time. Water utility agencies in Utah were already participating in mutual aid agreements through the Utah Water & Wastewater Agency Response Network (WARN). The “WARN agreement” has been in place for many years, and it has included over 85 water and wastewater agencies throughout the state of Utah. In addition, the state of Utah had formulated by code a statewide mutual aid agreement. Although both of these agreements are good, there were areas where the full needs of public works weren’t covered or addressed. We believed we could create a public works agreement that would go hand in hand with the WARN agreement and complement the state agreement. We asked permission from WARN to use their agreement as a template.

continued on page 54
for a broader public works agreement. They graciously gave us their consent.

Challenges
There are two major challenges for public works mutual aid agreements. First, mutual aid agreements for public works do not get exercised nearly as often as do mutual aid agreements for other public safety agencies, such as fire and police. The second challenge is covering the costs for services. Fire and police typically don't charge each other when they exercise their mutual aid agreements. This is much harder to do in public works due to the high costs we incur with heavy equipment, materials and personnel. Where it’s fairly easy for fire and police to “pay back” each other when the next need occurs, it’s much more difficult for public works. It could be years if ever when the next public works need could be reciprocated by a current disaster public works services recipient.

Purpose
The Public Works Emergency Management Alliance mutual aid agreement was established to provide a method whereby participating agencies which sustain damage from natural or man-made disasters can obtain emergency assistance in the form of personnel, equipment, materials and other associated services from other agencies. The agreement can be exercised any time an agency has a need which exceeds their resources and not solely for a “declared” emergency. The agreement also provides a method whereby responding agencies may be provided with reimbursement for resources provided. Nothing in the agreement is intended to replace or terminate any pre-existing agreement between any of the participating agencies. Even though participating agencies may intend to assist each other when possible, nothing in this agreement requires the requested agency to provide resources when contacted by another, as each participating agency has the sole discretion to determine when its resources can be spared for assisting other participating agencies.

Procedure
In the event a participating agency becomes a requesting agency, the following procedures are followed:

- The requesting agency contacts other participating members of the alliance that may be able to provide resources. The communication is between agencies and not with the APWA Utah Chapter.
- A participating agency shall not be held liable for failing to assist another agency.
- Necessary information in accordance with the agreement shall be shared between the requesting agency and the assisting agency.
- The personnel and equipment of the assisting agency shall remain, at all times, under the direct supervision of the designated supervisory personnel of the assisting agency.
- The designated supervisory personnel of the assisting agency shall maintain daily logs of resources (including breakdowns, if any) and be responsible for the operation and maintenance of the equipment and safety of personnel.
- The designated supervisory personnel of the assisting agency shall report work progress to the requesting agency supervisor/Incident Commander.
- The requesting agency shall provide a Communications Plan to the assisting agency upon arrival.
- The incident command structure established during the event shall comply with the requirements of the National Incident Management System (NIMS).
- The Incident Commander shall, as soon as possible, release the personnel, equipment and materials of the assisting agency from the emergency. The personnel, equipment and materials of the assisting agency shall, if practical, be released before the personnel, equipment and materials of the requesting agency.

Reimbursable Expenses
The agreement also specifies the terms and conditions governing reimbursement for any assistance provided. As per the agreement, the standard and prevailing rates of the participating agencies shall remain in effect. During the
period of assistance, the assisting agency shall continue to pay its employees according to its then prevailing rules, regulations, policies and procedures. The requesting agency shall reimburse the assisting agency for all direct and indirect payroll costs and expenses incurred during the period of assistance, including but not limited to employee pensions and benefits.

In regards to equipment, the requesting agency shall reimburse the assisting agency for the use of equipment during the period of assistance. The reimbursement shall be according to the Schedule of Equipment Rates established and published by FEMA. If an assisting agency uses an alternative basis of rates for equipment listed on the FEMA schedule, the rates of the assisting agency shall prevail.

Legal Review
The draft agreement was reviewed by several city, county and local attorneys prior to being adopted. Similar to the WARN agreement, it is presented to proposed agencies to be accepted “as is.” However, in accordance with the Utah Interlocal Cooperation Act, this agreement shall be submitted to the attorney authorized to represent each participating agency for review as to proper form and compliance with applicable law beforehand.

Who Should Join?
We encourage all local government agencies, service districts and state agencies that can provide public works services and may require public works assistance after a natural or man-made emergency to “sign on” to the agreement and join the alliance. We urge all participating agencies in the alliance to continue to be active supporters of the agreement by spreading the word to representatives of other agencies and organizing annual emergency management training exercises. We also ask that participating agencies have a representative attend our annual meeting at the APWA Utah Chapter Fall Conference. Currently, we have over 30 agencies which have approved the agreement and signed on to the alliance. Although we are very encouraged by the manner in which this agreement has been received by the participants, our goal is 100% participation throughout the state.

Moving Forward
As first responders, public works departments provide a pivotal role in responding to disasters. Public works departments must have a plan to react to emergencies when time is of the essence. Rapid organized actions are critical since the public expects a prompt response. With all our responsibilities in the public works world, it can be overwhelming with limited resources to maintain infrastructure and yet find time to perform the proper training and develop the necessary protocols needed for emergency management. However, response to emergencies and disasters is one of our primary duties and needs to be a high priority. Sports teams are not successful by simply assembling a team of talented athletes; it requires training for each athlete to know their role and the development of teamwork to excel. The same is true in public works; we need to train our employees for the role they will be expected to perform in an emergency. Employees who receive adequate training are more confident and better prepared to perform their job in a more professional manner. If we look at the situation from another perspective, one in which training will improve our assistance during the urgency of a disaster and under the watchful eye of the public, it is easier to justify time for such exercises.

“By failing to prepare, you are preparing to fail.” – Benjamin Franklin

We recently had a couple of agencies exercise the agreement for training purposes. In this exercise, the agencies exchanged similar resources and agreed prior to the exercise that they would only use sample invoices and no actual charges would be billed. Such exercises are a wonderful opportunity to test the various aspects of an emergency, including the procedure for dispatch, assessing
the response time, procedures for incorporating staff from another agency into your operation, chain of command, effective use of the Incident Command System (ICS), communication, documentation, and accident procedures. Annual public works emergency management exercises (individual or jointly with other agencies) are a requirement for member agencies of the Alliance.

Looking forward to the future, we hope to include other entities into a “mutual aid” form of assistance. In addition to public agencies, private contractors and businesses have a vested interest in obtaining a healthy recovery from a disaster. This is not only for financial reasons, but they are also members of our communities. We hope to find ways to partner with them and create an even broader alliance.

On a national level, local mutual aid agreements can assist with and support EMAC (Emergency Management Assistance Compact) and the future plans and preparation of Public Works Mission-Ready Packages or Task Forces.

The Utah Public Works Emergency Management Mutual Aid Alliance will certainly not solve all issues which arise in an emergency here in Utah, but it can be a most useful tool to address an incident which exceeds an agency’s resources. Benefits include quicker response, quicker reimbursements, a more united public works community, increased support of EMAC, better political acceptance, improved joint training exercises and more.

Tim Peters can be reached at (801) 569-5722 or timp@wjordan.com; M. Leon Berrett can be reached at (385) 468-6129 or lberrett@slco.org.
Public works professionals have a duty to act

Mark Ray, P.E.
Director of Public Works
City of Crystal, Minnesota
Member, APWA Emergency Management Committee

Public works professionals are true professionals and a key aspect of public works is that we are considered first responders (Homeland Security Presidential Directive 8; Dec. 17, 2003).

The term “first responder” is not just another hat, but a responsibility. It is a duty to act. It is essential that we understand how important the first responder duty to act is. We should not wait until after something bad has happened to take action. We are called to be proactive to protect life, property and environment. For example, a disabled vehicle blocking a lane of traffic, even on a relatively low-volume road, may not initially seem hazardous. But the vehicle could threaten life and property. Another driver may not anticipate the vehicle or not take appropriate responsive measures, and crash into it. At a minimum, the local public safety dispatch should be contacted regarding the disabled vehicle blocking the travel lane. Then the right resources start moving in the direction of need.

When an event could or has occurred that threatens life, property or the environment, we cannot simply wait to be asked to assist. We must be proactive and reach out to our first responder colleagues, notify them of the situation (if they are not already aware) and ask how we can assist. One way to do this is to reframe the question, “Do you need help?” Instead we should be asking, “What would you like me to do?”

The responsibility for communication among first responders is jointly shared. Public works professionals have the skills and equipment to respond to a wide variety of situations, and it is our responsibility to reach out to the right people and ask if we can be of assistance. Remember that the other first responders involved in the incident are dealing with the situation to the best of their abilities with the tools they have. They have a lot going on. Figuring out what resources are available and getting them may not be feasible given the conditions. Now, just because public works staff offers assistance does not mean that we will be accepted. And if the staff members are not used, we should not take that personally nor stop offering assistance in the future.

It is important to recognize that for a long time there has been the feeling within the public works community—and sometimes even amongst ourselves—that we are not first responders. There is no doubt the first responder community has room to improve communication and coordination with others. It is through these efforts that trust will be built and stronger partnerships fostered.

Individually, as public works professionals, we need to be devoted first responders. The first responder community is a professional community. They care for each other. They share that connection. There is no middle ground because middle ground creates a gray area, and gray areas affect consistency and results.

Not every situation has a component where public works can or should respond, but the goal is to have police and fire trust us enough to call and know we will do all we can (within our skills and abilities to help). If they do not trust us, then they may not call. And when they do not, we should see that as an area for growth.

Improving working relationships with other first responders will benefit everyone, but it doesn’t come automatically. Improving communication and coordination will take dedicated effort over a long period of time. As with any change, we just need to start. The first responder community is about protecting life, property and the environment. Because of this, the first thing to do is focus on building and maintaining trust.

Trust has to be built at all levels. In most communities it will be the

continued on page 58
front-line staff or their immediate supervisors making the initial decisions after an emergency occurs. Police or fire supervisors need to know the appropriate public works supervisor and feel comfortable calling them at any hour of the day or night. Sometimes people feel out of line about making that call, but when the personal relationship is built beforehand, that police or fire staff will not hesitate.

Be clear on the services your specific public works staff can provide and what the outcomes will be. Transparency with our operations is good and can help build the reputation of public works. Other first responders need to know what will happen when public works is brought in. Transparency regarding operations is key. Once public works arrives on the scene, they need to contribute to the effort and deliver results. Sometimes it is tempting to be an observer, but professional public works crews are there to get the job done. Remember, first responders are watching the public works staff. This is when trust is built or lost.

Building trust is not a quick or easy process and it should not be taken lightly. Letting go of some emotional baggage within public works is an important step. Such baggage could be frustration about a past event or feeling like one is not being treated as an equal first responder or perceived inequality of budget allocations. Individuals and departments need to accept their role and make a plan to improve trust. The commitment to moving forward is not always easy and will not prevent future problems or letdowns. But a fresh foundation is needed within the first responder community.

In order for public works departments to fully establish themselves in the first responder community, we need to embrace the first responder role and the duty to act that comes along with it. Take a moment and do a self-evaluation. Do you accept the duty to act when you see a situation that threatens life, property or the environment? Do not turn a blind eye to a problem you do not want to deal with or is someone else’s responsibility.

Our collective reputation as public works professionals is built on thousands of individual decisions to own our duty to act. We all care about the communities we serve and embracing our duty to act further supports our efforts. APWA’s Emergency Management Committee is committed to supporting all public works agencies in their first responder role. If we can be of any assistance to you or your organization, please contact us.

Mark Ray can be reached at (763) 531-1160 or mark.ray@crystalmn.gov.

Follow Us!
- Follow us on Twitter @apwatweets
- Find us on Facebook
- Follow us on Instagram @apwagram
- YouTube

APWA REPORTER
CUSTOM REPRINTS

REPRINTS ARE IDEAL FOR:
- New Product Announcements
- Sales Aid For Your Field Force
- PR Materials & Media Kits
- Direct Mail Enclosures
- Customer & Prospect Presentations
- Trade Shows/Promotional Events
- Conferences & Speaking Engagements
- Recruitment & Training Packages

For additional information, please contact Foster Printing Service, the official reprint provider for APWA Reporter.

Call 866.879.9144 or sales@fosterprinting.com

Foster Printing Service
every four years in the District of Columbia, before the candidate is even elected, we begin our inaugural planning the summer before the general election. Inauguration Day is given the designation of a National Special Security Event by the Secretary of Homeland Security which allows the U.S. Secret Service to become the lead agency. Planning for the District started in August with the development of the D.C. Presidential Inauguration Committee (DCPIC), chaired by Mayor Muriel Bowser. Followed by the designation of each of the subcommittees, from the Executive Subcommittee to the Venue Subcommittee, the respective chairs, co-chairs and members are selected.

The DCPIC and its subcommittees will initially meet once a month and once the election has occurred meetings are then scheduled either bi-weekly or weekly. Each subcommittee is given a schedule of tasks to accomplish prior to the Inauguration. These tasks are very important to the success of the Inauguration and are a prime example of the level of coordination and partnership between state, local, private and federal entities. Not long after the general election, the Presidential Inaugural Committee (PIC) was selected and became active. The PIC will make planning decisions based on the desires of the President-elect from the parade to all official balls.

There are many facets to planning for the Presidential Inaugural as there are to DPW’s response to this historical event. Under the leadership of our Director, Christopher Shorter, the Department of Public Works (DPW) carefully orchestrates the response for Inauguration Day because of the many moving pieces. In addition, while we are scheduling staff and equipment use, we have to carry on with our normal business in the city. Although DPW is not a law enforcement agency, we have many responsibilities as it pertains to the health and safety of the President of the United States, visitors to our city and its residents during that week in January and whenever the President is out and about in the city. Our partnerships with the Metropolitan Police Department and the U.S. Secret Service are often multi-faceted as we move from coordination to logistics to deployment of human resources and equipment. We meet and talk often to formulate responses to various scenarios as they could occur. Our teams will work around the clock to execute their tasks and responsibilities. DPW helps with parade sanitation to include the removal of trash cans, vendor newspaper boxes and other materials from public space. This is done to ensure that no unseen force has the opportunity to place some type of explosive device in one of these objects resulting in injuries to thousands visiting for the inaugural activities.

DPW cleans public spaces prior to and after the parade and along venue sites; our towing and parking divisions assist with the enforcement of emergency no parking signage; we develop and manage the snow response in the event of snow before, during and after many of the events; we provide dump trucks with drivers as blocking vehicles for security. In addition, DPW has a strike team that will go into the secure perimeter to spot-clean a certain area and then rotate back out. This team is made up of the men and women who work in our Solid Waste Administration’s Street and Alley Division along with specified equipment.

DPW also partners with the District’s Department of Health’s Strategic National Stockpile group by transporting meds, chempacks and other supplies during the Inauguration to use in the event of a public health emergency. This group of employees received specialized training and will work whenever needed by the health group to respond to public health emergencies if they should occur. We also provide our cadre of Emergency Liaison Officers to the Emergency Operations Center at our Homeland Security and Emergency Management Agency. Once there, they are the nerve center of the whole response, providing coordination with all agencies, federal, state, local, private and the military. The ELOs’ responses to requests for resources, complete situation reports, and answering inquiries are just a small sample of their duties.

continued on page 60
Employees at DPW look forward to the excitement of participating in the Presidential Inaugural response. Each employee will work a twelve-hour shift beginning several days before the Inauguration. There are many staff members who find the excitement surrounding this event exhilarating. We will have approximately 400 staff members who will have an assigned role for this event. In anticipation of working this historical event, staff received Incident Command System training as well as Improvised Explosive Device training to prepare them for responding in the appropriate manner as well as to be aware if they “see something, say something.” Command and control lies with law enforcement but the Department of Public Works is often called upon to execute established methods in response to the core capabilities that we share with law enforcement.

The Department of Public Works operates in conjunction with the District Department of Transportation, Homeland Security and Emergency Management Agency, Department of General Services, D.C. Water and other agencies in responding to snow and ice. To prepare for the response to snow, a specific plan is written for Inauguration Day and the snow team is on standby within the perimeter to respond at the first hint of precipitation. Historically in Washington during Inauguration week, we are faced either with the threat of snow and/or ice or snowy weather actually occurs. Starting in mid-December, we will closely monitor the snow projections for January in the event we will have to deploy the snow team. Our snowplows, both heavy and light, are prepared and ready for deployment. Our snow team leaders will ensure that staff is properly prepared to face the elements, as they may have to be deployed to one area in the secure zone for twelve hours or more.

They are prepared for responding not only to the parade route but the Presidential motorcade route from the Capitol to the White House and the ball venues to clear curb to curb of any snow or ice. In addition to responding for the Inaugural, DPW’s snow teams are still in the neighborhoods, plowing and salting residential areas.

We look forward to another successful Presidential Inauguration where the world can see what the citizens of the District of Columbia know—the D.C. Department of Public Works is the “preferred choice”!

Wanda Ellis can be reached at (202) 671-2003 or wanda.ellis@dc.gov.
Reduce your slip and fall liability this winter with STAND-UP Freeze Resistant Liquid Deicer

New STAND-UP helps facilities mitigate their slip and fall liabilities by completely clearing away slippery ice and snow pack from their steps, walkways and ramps. STAND-UP is a great alternative to salt around facilities since it keeps working even after the sun goes down. STAND-UP will not track into buildings, and it will not damage expensive stamped concrete and brick pavers like salt can. For more information, watch a short video of STAND-UP in action at www.rhomar.com or call (800) 688-6221.

DuraFon’s durable, rugged Handset

Perfect for outdoor setting, the DuraFon-UHF-HC Handset is the industry’s only durable, long-range dual-mode radio phone with UHF 2-way radio allowing communication with both UHF 2-way radio users and phone. The DuraFon-UHF-HC handset works with a DuraFon base unit (purchased separately) to provide telephone line connection. It’s ideal for employees that need to make and receive calls and want the added convenience of being able to communicate with other personnel using UHF 2-way radios in the area. Ideal for communication in large areas with coverage of up to: 250,000 sq. ft. (warehouse), 12 floors (in-building) and 3,000 acres (fairgrounds or arena). For more information visit www.engeniustech.com.

Transportation construction management technology keeps construction costs down and improves project efficiency

Counties, cities, consultants and contractors across Minnesota have been using RTVision’s OneOffice technology to manage their construction project administration for the last 10 years. From the Engineer’s Estimate to Funding Management and Field Inspections, all steps in the process are managed online to decrease process redundancies and provide the most up-to-date information for all stakeholders. To further extend the paperless solution, RTVision offers an online plan room, in addition to online bid management software. For more information on RTVision or our product portfolio, please call (320) 632-0760 or visit our website at www.rtvision.com.

McLaren Engineering Group’s Orlando office teams with Cirque du Soleil La Nouba for Creative City Project Performance in Orlando, Florida

McLaren Engineering Group, a full-service engineering firm with offices throughout North America, including Orlando, was tasked with adapting Cirque du Soleil La Nouba’s Bamboo Aerial Act for use in a stunning outdoor performance. The Orlando-based show took its new dynamic act to the streets of Downtown Orlando for the Creative City Project event on Saturday, October 15.

“McLaren was proud to provide the initial structural review of the act’s equipment, rigging, and supporting structure in the gridiron for La Nouba’s theater, and the follow-up review for the crane, forklift, and rigging components for the act for the Creative City Project,” said Andrew Habel, Florida Regional Director, McLaren Engineering Group. For more information about McLaren Engineering Group, please visit www.mgmclaren.com.
PROFESSIONAL DIRECTORY

POT HOLE PROBLEMS?

Trial Offer:
transpo.com/bondade

BONDADE®
Improve Bond with No Mess, No Smell
Call: 800-321-7870
Email: info@transpo.com

SAFER STREETS for WINTER TRAVEL

• Brine Manufacturing Systems
• Direct Application Systems
• Prewetting Systems
• Overhead Spray Systems
• Pump Transfer Stations

800-458-5123
www.gvminc.com
Built to Last

STOP, DROP AND LOAD
YOUR WAY TO MAXIMUM PROFITS

Our Le Riser® Inclining Platform Trailers offer:
Lower labor costs - one man unloading
Lower specialized equipment costs - no rollback track required, just a pickup track
Increased efficiency - more deliveries per day

Call 800-369-5365
www.advancedincline.com
Manufactured by: The Advance Metallizing Co., Inc.

CULVERT REHAB

Dig and replace has been replaced.

SnapTite®
Easier. Faster. Safer.
1-800-CULVERT
www.culvert-rehab.com

Camosy Construction
John Bosman, AIA, ALA, LEED AP
(847) 395-6800
Public Works
Construction Management Specialists

Optimize Fleet Productivity
• Evaluate & Improve Fuel Economy
• Automate PM Tracking
• Increase Warranty Recovery
• Analyze Life-Cycle Costs & Trends
• Mechanic-Friendly ShopFloor for ROs & Time Capture
• Manage Service Requests with e-Service Request

Why CFA Software?
• Over 45 Years Experience
• Superior Product Support
• Low TCO
• Implementation Assistance FREE

Call for Demo
800.437.6001
CFASoftware.com

We exceed ADA compliance
Most cost effective option, save 70-90%
Propritory GIS reporting
Proprietary surveying technology
Cleanest, simplest solution

We fix your trip hazards, North America.
safesidewalks.com

Construction Accessories, Inc.
937.429.9089 • Sales@JackJaw.com
www.jackjaw.com
Dealer Inquiries Welcome
DON'T MISS THIS CHANCE...

TO GET IN THE APWA REPORTER'S WATER RESOURCES ISSUE

The deadline to reserve your space is January 9

By advertising in the APWA Reporter, news of your equipment, product or service will be sent to more than 29,000 APWA members, most of whom are key decision makers in their agencies.

So, don’t miss this opportunity to advertise in the February issue which focuses on water treatment and distribution, stormwater management, sanitary sewer systems, and flood control.

The materials are due by January 11

Call Fox Associates at (312) 644-3888
UPCOMING APWA EVENTS

**JANUARY 2017**
- **PWX**
  - 2017 Aug. 27-30 Orlando, FL
  - 2018 Aug. 26-29 Kansas City, MO
  - 2019 Sept. 8-11 Seattle, WA
  - For more information, contact David Dancy at (800) 848-APWA or send e-mail to ddancy@apwa.net.

**FEBRUARY 2017**
- 14-17 Interlocking Concrete Pavement Institute – Annual Meeting, Phoenix, AZ, www.icpi.org

**MARCH 2017**
- 13-16 APWA: CSM, CPII and CPFP Certification Exams (computer-based testing), (800) 848-APWA, www.apwa.net
- 14-17 The Work Truck Show 2017, Indianapolis, IN, www.ntea.com

When you contact an advertiser regarding a product, please tell them you saw their ad in the APWA Reporter. Thanks! – The Editor

**INDEX OF ADVERTISERS**

<table>
<thead>
<tr>
<th>Company</th>
<th>Page</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance Metalworking Co., Inc.</td>
<td>62</td>
<td><a href="http://www.advancemetalworking.com">www.advancemetalworking.com</a></td>
</tr>
<tr>
<td>Appliqué Technologies International</td>
<td>63</td>
<td><a href="http://www.appliquetech.com">www.appliquetech.com</a></td>
</tr>
<tr>
<td>Bonnell Industries</td>
<td>63</td>
<td><a href="http://www.bonnell.com">www.bonnell.com</a></td>
</tr>
<tr>
<td>Camosy Construction</td>
<td>62</td>
<td><a href="http://www.camosy.com">www.camosy.com</a></td>
</tr>
<tr>
<td>CFA Software</td>
<td>62</td>
<td><a href="http://www.cfasoftware.com">www.cfasoftware.com</a></td>
</tr>
<tr>
<td>Construction Accessories, Inc.</td>
<td>62</td>
<td><a href="http://www.constructionaccessories.com">www.constructionaccessories.com</a></td>
</tr>
<tr>
<td>Easi-Set Buildings</td>
<td>63</td>
<td><a href="http://www.easisetbuildings.com">www.easisetbuildings.com</a></td>
</tr>
<tr>
<td>EZ-Liner Industries</td>
<td>63</td>
<td><a href="http://www.ezliner.com">www.ezliner.com</a></td>
</tr>
<tr>
<td>GVM Snow Equipment</td>
<td>62</td>
<td><a href="http://www.gvminc.com">www.gvminc.com</a></td>
</tr>
<tr>
<td>K-Tech Specialty Coatings, Inc.</td>
<td>60</td>
<td><a href="http://www.ktechcoatings.com">www.ktechcoatings.com</a></td>
</tr>
<tr>
<td>Korman Signs, Inc.</td>
<td>63</td>
<td><a href="http://www.kormansigns.com">www.kormansigns.com</a></td>
</tr>
<tr>
<td>Precision Concrete Cutting</td>
<td>62</td>
<td><a href="http://www.SafeSidewalks.com">www.SafeSidewalks.com</a></td>
</tr>
<tr>
<td>Professional Pavement Products, Inc.</td>
<td>63</td>
<td><a href="http://www.pppcatalog.com">www.pppcatalog.com</a></td>
</tr>
<tr>
<td>RHOMAR Industries, Inc.</td>
<td>38</td>
<td><a href="http://www.rhomar.com">www.rhomar.com</a></td>
</tr>
<tr>
<td>Roll-Rite LLC</td>
<td>64</td>
<td><a href="http://www.rhomar.com">www.rhomar.com</a></td>
</tr>
<tr>
<td>Snap-Tite</td>
<td>62</td>
<td><a href="http://www.culvert-rehab.com">www.culvert-rehab.com</a></td>
</tr>
</tbody>
</table>

When you contact an advertiser regarding a product, please tell them you saw their ad in the APWA Reporter. Thanks! – The Editor

**Legend:** IFC = Inside Front Cover; IBC = Inside Back Cover; BC = Back Cover
TIRED OF THE HIRING ROADBLOCKS?

Make the switch to the more powerful, more personal hiring experience that APWA’s WorkZone job board provides.

Why WorkZone?

- The WorkZone website averages 1.5 million pageviews per year, which means more visibility for your ad
- Flat-Rate Pricing: $295 member/$395 non-member
- Featured listings and other upgrade opportunities help your ad stand out and make an impression
- Complimentary listing in APWA’s weekly “In the Works” e-newsletter showcases your job posting to 65,000 public works professionals
- Searchable database of 2,700+ résumés helps you find the right fit
- Much more!

Join the thousands of public works professionals who’ve already chosen the road free of obstacles!

APWA WORKZONE
Your Connection to Public Works Careers

Get started today at apwa.net/WorkZone
REGISTRATION OPENS SOON!

NORTH AMERICAN
SNOW CONFERENCE 2017
DES MOINES, IOWA
APRIL 23-26, 2017

www.apwa.net/snow