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(see page 41)
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WINTER MAINTENANCE ISSUE

INSIDE APWA

2 President's Message
5 Technical Committee News
6 Accreditation may take you farther than you imagine
8 Diversity: The hidden treasure
9 APWA Excellence in Snow and Ice Control Awards follow-up
10 Chicago Metro starts a new chapter tradition
12 Council Corner
15 History of snow and ice fighting in the United States of America
18 One man’s story
22 Recognize Your Leaders

COLUMNS

4 Washington Insight
24 Executive Soft Skills
26 International Idea Exchange
54 Ask Ann

RESEARCH

30 How research advances practice

FEATURES

32 Pass the salt please
35 Finding the big issues in winter maintenance
37 How to develop a successful winter maintenance operation
41 The Valdez “Damalanche”
45 Streets of yesterday becoming multi-modal
48 Automated Vehicle Location and Maintenance Decision Support System project
51 Outsourcing snow removal operations in Montreal

WORKZONE

8 WorkZone: Your Connection to Public Works Careers

MARKETPLACE

57 Advertorial
58 Products in the News
62 Professional Directory

CALENDARS

56 Education Calendar
64 World of Public Works Calendar
64 Index of Advertisers
For many years public works has worked diligently to get a more prolific seat at the "First Responders" table. While our public safety partners are quick to highlight the importance of their roles with regard to saving lives, public works professionals have always been more reluctant to "toot our horns."

Maintaining roads during winter storms is oftentimes a daunting task. Whether you are a snowplow operator out on the road fighting a raging blizzard, a support staff person handling calls from upset citizens or an agency manager trying to figure out how to deal with an ice storm that created “gridlock” during a busy rush hour, the magnitude of the issues that these professionals deal with on a regular basis can be overwhelming.

While growing up in South Dakota, it seemed that folks had a more tolerant attitude toward winter weather and roadway conditions. If a blizzard was in full swing, most people had a general understanding that travel was probably not a wise idea, unless of course you wanted to get stuck somewhere and potentially be found stranded and frozen in your vehicle.

I have watched things change throughout the years. In today’s environment there seems to be an almost universal expectation that regardless of weather conditions, roads should be open to traffic at all times. Trucks, now utilized as mobile warehouses, carry goods that businesses rely on to keep production lines rolling. Restaurants, shopping markets and malls rely on customers to keep their doors open. While winter weather delays used to be considered more of an inconvenience, today storms are oftentimes measured in the amount of revenues lost when roads become impassable.

While meeting the public’s expectations is challenging at times, APWA has been working diligently to provide training to the professionals who fight the conditions associated with winter storms. One shining example is the APWA North American Snow Conference. This annual event is without a doubt the premier venue for battling all types of winter weather. Attendees can find numerous educational sessions, a vendor floor filled with equipment, technical tours and numerous opportunities to network with others in the profession.

Another incredible success has been the APWA Winter Supervisor Certificate program. Developed by the Winter Maintenance Subcommittee, this comprehensive training has received rave reviews from attendees. In a little more than three years, this program has trained over 2,000 winter maintenance professionals throughout the years. In today’s environment there seems to be an almost universal expectation that regardless of weather conditions,
North America. Not only do attendees get to hear from some of the best in the business, they also are provided with an opportunity to gain valuable information to take back to their respective agencies.

Last winter was representative of the fact that in some cases Mother Nature is still going to overwhelm even the best prepared winter maintenance programs. The extremely frigid temperatures, heavy snow and ice storms wreaked havoc and tested many agencies that had not seen those types of conditions for many years. While extraordinary in nature, winter professionals across North America rose to the challenge and met the conditions “head on.”

During my career I have had the opportunity as a Public Works Director to experience first-hand the challenges faced by those who are tasked with managing winter storms. I have witnessed the commitment, professionalism and sacrifices these individuals make during the winter season as they strive to meet the expectations that are placed on them by the motoring public. They oftentimes work countless hours for extended periods of time when Old Man Winter is throwing his worst in their direction.

As you are getting ready for this winter, I would like to take this opportunity to thank all of the professionals in our industry who give so much of themselves in an effort to keep others safe. You are our First Responders in winter road safety.

“As long as I have a choice in the matter, I shall live only in a country where civil liberty, tolerance, and equality of all citizens before the law prevail.”

– Albert Einstein (1879-1955), physicist, philosopher and author
Midterm elections and U.S. Congress: Time for advocacy

Tracy Okoroike
Government Affairs Associate
American Public Works Association
Washington, D.C.

As midterm elections take place across the U.S., now is a good time for all APWA members to commit to be involved in promoting public works through APWA advocacy. Being an advocate allows you to amplify your voice for public works and influence public policy that affects public works day in and day out. For individual members of APWA, advocacy takes many forms including voting in your local elections; rallying for a cause; providing APWA with your opinion on pending legislation, and rules and regulations; and communicating with your congressional leaders.

Three years ago, APWA established an initiative called APWA Advocates to encourage and support members from throughout the U.S. to become more actively involved in APWA advocacy. APWA Advocates now number over 1,110 APWA members in more than 350 congressional districts, and since its origin, Advocates have weighed in on a number of issues that impact public works. This past year, APWA Advocates worked to promote the successful passage of the Water Resources Reform and Development Act (WRRDA), a law that authorizes the U.S. Army Corps of Engineers (USACE) to construct projects for flood control, water navigation, storm damage reduction, beach nourishment, ecological restoration, water supply, and dam and levee safety. Advocates have also supported the passage of a short-term surface transportation bill, ensuring that transportation projects continue to receive funding through May 2015.

Congress will be returning to Washington, D.C. shortly after the midterm elections for the “lame duck” session through the end of the calendar year. Upon their return, congressional leaders are set to tackle major issues, some of which are related to public works, such as passing a long-term surface transportation reauthorization bill. APWA Advocates will be working to make sure that Congress upholds policies that are beneficial to the public works profession and community.

Now is the time to join with other public works professionals and add your voice to supporting public works and infrastructure investment. Join APWA Advocates today and make public works’ voice heard! To sign up, visit the APWA Legislative Action Center http://cqrcengage.com/apwa/home. APWA Advocates will contact you with regular advocacy updates and further information.

Visit APWA Advocates on the website for more information, at: http://www.apwa.net/be_involved/APWA-Advocates. The APWA Legislative Action Center (LAC) is a platform for APWA Advocates to contact Congress about public works-related legislation. The LAC is also a source of updates on the latest public works news in Washington, D.C.

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“You can never have an impact on society if you have not changed yourself.”

– Nelson Mandela (1918-2013), South African anti-apartheid revolutionary, politician and philanthropist; President of South Africa (1994-99)
True leaders!

Ben Dow
Director of Public Works
City of Fargo, North Dakota
Chair, APWA Winter Maintenance Subcommittee

A VL, RWIS, anti-ice, pre-wet, salt brine, calibration, sustainability! For today’s snowfighter these terms are second nature; however, not that long ago they would have been unfamiliar to a wide variety of us. The snow and ice industry has been able to improve by leaps and bounds over the past ten years through the help of many dedicated individuals. Among these individuals there is a champion whose name has become very common in the industry, Mark DeVries.

Mark is one of the true leaders within the snow and ice community. Since assuming the Winter Maintenance Subcommittee chair position in 2007, Mark has diligently worked for the promotion of snow and ice education along with industry equipment and technology improvements. Known as one of the leading presenters and educators on snow and ice, Mark has spent countless hours educating not only nationally but worldwide. While fulfilling the subcommittee chair role, Mark also continued to transform the McHenry County Illinois DOT’s snow and ice program into one of the most recognized in the industry. The most outstanding realization is that even with all the time spent writing articles, preparing presentations and serving on countless committees, Mark has always made time to support and aid anyone looking to take their snow program to the next level.

After serving as the subcommittee chair for seven years, Mark made the decision in April to pass the torch and assume an alternative role on the subcommittee. By way of Mark’s leadership and guidance many of us in the snow and ice industry have benefited. I wish to honor Mark and thank him for all his efforts and expertise over the past years.

On another note, subcommittee members have been hard at work and in the last three years have taken groundbreaking steps towards advancement in education of snow and ice practices through the creation and issuance of the Winter Maintenance Supervisor Certificate program. To date, more than 2,000 snow and ice leaders across the country have engaged and attended the program showing an outstanding level of success. As part of that success the subcommittee is continuing the advancement and growth of the Winter Maintenance Supervisor Certificate program through new module development and existing model refinement. Subcommittee leaders and APWA staff are now working on the exciting challenge of taking the Winter Maintenance Supervisor Certificate program to a computer-based Learn Management System (LMS) which will allow for digital attendance through a self-paced program.

As the newly appointed chair, I am truly honored to have been granted the opportunity to serve as the new subcommittee chair. This subcommittee is made up of the very best from across North America and they volunteer to serve and aid whenever needed. With the subcommittee members’ level of expertise and extensive hands-on knowledge, I would be hard pressed to identify a snow and ice issue that they have not experienced and resolved. If you are interested in participating with some of the best in the snow and ice industry, I would encourage you to contact me or another member of the subcommittee to learn more about how you can participate and become a subcommittee member.

I want to once again thank Mark DeVries for his tireless efforts over these past years, serving as a true leader, in the chair position for the Winter Maintenance Subcommittee.

Ben Dow can be reached at bdow@cityoffargo.com.
The journey that began in April 2010 took our department farther than any of us could have imagined.

That journey began with the mandate of our township administrator, a man of unparalleled vision, who directed that our Service Department complete the accreditation process.

The Police and Fire Departments were already nationally accredited. For years, we had studied and admired public works agencies in our region that were accredited through the American Public Works Association (APWA). For this small department of only 17 full-time employees, accreditation seemed impossible.

The Union Township Service Department is comprised of four divisions: Roads; Parks, Buildings and Grounds; Fleet Maintenance; and Cemetery. In all these areas, the department supports this thriving township located along the Ohio Route 32 and Interstate 275 corridor in northwest Clermont County. The 2010 census reports a population of 46,416 in this 9th largest township in the state.

The township boasts a mean (average) household income of $76,382, an aggregate taxable valuation of $1,016,292,540, and the largest school district in the county.

Through sound and conservative fiscal practice, the Union Township Board of Trustees and Fiscal Officer manage a general fund that shows steady growth each year.

Our administration manages a successful and flourishing community in every way, and fully expects no less than excellence from the departments that support that community.

At the directive of our administrator and with the objective of improving our department’s operations, we set out on April 9, 2010, to tackle the self-assessment phase of accreditation. In this phase of the process, we studied every facet of our operation, recognizing opportunities to become more efficient and effective. We developed policies and procedures to help guide our department toward the ultimate goal of becoming one of the most successful public works agencies in our region.

It was during this process that we learned our strengths—and our weaknesses.

Performing a self-assessment forced us to look both internally and externally. It caused us to measure ourselves against many of the most successful public works agencies in North America. The process guided us step-by-step in developing and adopting crucial documents, such as a strategic...
plan, a winter operations manual, a landscape management plan, standard operating procedures, and an emergency management plan.

This exercise also enabled us to recognize and correct our deficiencies in policies, procedures and employee training. It is because of the self-assessment phase of the accreditation process that we have a written policy or procedure for every activity we perform, and our employees are now among the best trained in the business.

While there are many wonderful benefits to completing this process, one of the greatest accomplishments was our staff pulling together in a unified effort to meet the challenge. The process took our team to a whole new level—a level that says nothing is impossible. If we can dream it, then we can do it. With a department staff of only 17 people, every team member’s best effort was essential to our success.

Upon completion of the self-assessment phase, it was apparent that our department was ready for the next big step. We invited an APWA-sanctioned team to perform an onsite evaluation of our entire operation. The team was comprised of expert individuals in the field of public works. They had a diversity of backgrounds from different cities across the country. They had been trained by the APWA to perform site evaluations. They toured our facilities, reviewed our policies, procedures and major documents. They interviewed our team members. We were held accountable for each and every management practice that pertained to our departmental operations.

On July 29, 2011, we became the first township public works department in North America to be awarded accreditation through APWA. I knew immediately that this was a monumental achievement, but I had no idea how this would impact our organization. The accreditation opened up doors we never knew existed.

APWA invited me to Kansas City for training to become an evaluator. In 2013, I was named a site assessment team leader. In just a few short years, I have been privileged to perform site assessments for some of the most successful agencies across the country, enabling me to bring best management practices back to Union Township.

Successfully completing this process has changed the way we are viewed from within our organization, from other organizations, and from the community we serve. You can believe all day long that you are doing a great job, but when an independent team of some of the most successful professionals in your industry evaluate your operation and give it their stamp of approval, it validates what you do.

There is a certain amount of respect and pride that goes along with the credentials. We have noticed that people view us differently. Other agencies want to look at our policies and procedures. They want to visit our operation. The community cannot deny the fact that we are doing things right.

More importantly than all this is the fact that our own people know that we never take shortcuts—we do things right.

The road on which we embarked in 2010 has made us a better organization, one that has implemented the processes and changes necessary to become a top-flight shop, and still, one that recognizes the continual need to strive for more.

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Diversity: The hidden treasure

Charles Pinson
Safety Manager
Anderson County, South Carolina
Member, APWA Diversity Committee

Treasures are all around us. Some of them are obvious and some take years to discover. People overlook treasures not knowing what they are because they don’t look right to them or are something they have never dealt with before. Many people as well as employers have a problem with embracing diversity and the value of a diverse workforce.

There was a twenty-year-old minority college student in a southern town who needed some part-time work to help pay for his tuition. He went to his guidance counselor and asked him if he knew of any company seeking part-time help. His counselor said he had just received a request from the local textile company for a student to help audit some assets. Being a business major and having to take accounting as a requirement for his degree this was a benefit to assist in auditing the assets. The interview went great. At the conclusion of the interview the accountant simply said, “Thanks for coming by.” The accountant called the guidance counselor back and said, “Great interview and a nice young man. Do you have anyone else?” The counselor sent two non-minorities. One was hired and worked three days and the other young man worked one week and then quit. The accountant called the counselor back and said, “Is the first young man still available?” God said in his word, “I have never seen the righteous forsaken or his seed begging for bread.” The counselor told the young man that the company wanted to hire him for the part-time position. The young man was hired and offered a management position. He went through their management training program. He excelled in every position and became the first minority to hold a department manager’s position in the company.

As that young man, I encourage each individual, agency, and company to embrace diversity.

You may never know the treasure you may be turning away. Diversity adds variety which is the spice of life. As I write this last article as a member of the Diversity Committee, I thank God for the opportunity and the value that working with such a diverse group of professionals has brought to my life. Remember, use every crayon in the box, it will make life’s picture so beautiful.

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Special Reminder: Please make sure you update your personal membership profile, including answering the optional questions 13-16 (see page 10, November 2013 Reporter). Please refer to APWA’s 2013 Diversity Resource Guide 2nd Edition and the Diversity Toolbox for more ideas in celebrating the diversity in your chapter.
In April 2011, the City of Farmington Hills was one of three communities to receive APWA’s Excellence in Snow and Ice Control Award. One of the City’s Road Maintenance Supervisors, Bryan Pickworth, had attended both of the previous APWA North American Snow Conferences and had been made aware of this award. After reviewing the award criteria on the APWA website and seeing other agencies’ winter maintenance programs while at these conferences, we felt confident that our program could be award-winning too.

Preparing the award submission provided staff an opportunity to take a closer look at our program to see if we had all of the necessary pieces in place to be eligible. Our belief was that we had a quality winter maintenance program and the award process provided us with that affirmation. One benefit of going through the process, regardless of receiving the award, is that it gives an agency the opportunity to implement what the industry perceives as “best practices.” While the award criteria recognize the unique characteristics of a program, there are always some practical guidelines that the industry has established that may help improve operations.

A popular perception of public works agencies is that they are functioning under antiquated practices, inefficient, and very resistant to change. Agencies that are more progressive and attempting to follow best practices, at times, can fall victim to internal hurdles as well, such as staff that is unwilling to adapt to change, or governing bodies that don’t understand or don’t support innovative ideas to improve operations.

Receiving a national award such as this provides support, recognition and affirmation to those agencies that are forward thinkers. In our instance, the award we received showed that our program and policies are taking the City of Farmington Hills in the right direction. Specifically, the practices that we have implemented provided a higher level of service to our residents, increased operational efficiencies, and reduced environmental impacts to our lakes and streams. This recognition set the course for further expansion of our winter maintenance program.

Assembling the award application was a challenge when coupled with our everyday operations and would not have been possible without the teamwork, dedication, training, and support from the entire staff and administration. The process was definitely a team effort, relying on the different skills and talents of the entire DPW staff. This effort included data and notes of the actual operations of the City’s winter maintenance program by the field staff, photo documentation and notes from the supervisory staff, and writing and desktop publishing of the office staff. As we worked our way through the application process, we found that the 20-page limit was not enough space to tell our story. Therefore, we moved most of the support documentation, photos, and references to an appendix. The application process provided on APWA’s website will completely guide an applicant through the categories and criteria.

Another positive outcome of receiving this award are the relationships we have built with other public works operations across North America. After receiving the award, several agencies and organizations have contacted Farmington Hills DPW requesting presentations of our story and guidance in developing their programs. Farmington Hills staff also started a collaborative group of local road maintenance agencies and private maintenance companies, titled the Southeast Michigan Winter Maintenance Team. This regional group meets three to four times per year to discuss ideas (both successful and not so successful) on projects, methods, programs, policies, and equipment, allowing all of us to learn better “best practices.”

Lastly, receiving this award gave the City momentum in pursuing even better “best practices,” opening the door to try new products, procedures, and equipment to make our snowfighting the best it can be.

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Since the inception of the APWA “Top Ten Public Works Leaders of the Year” award in 1960, the Chicago Metro Chapter has been privileged to have had 36 of its members receive this most prestigious award. Since that first year, the chapter has recognized those receiving the award at a special luncheon (separate from any other activity) to allow the focus of the meeting to be on the individual receiving the award and providing time for his or her colleagues, employers, elected officials, family and others to offer thoughts, comments and stories about the individual and their career accomplishments. This special event is held each time that a chapter member is selected.

This luncheon meeting is typically held during National Public Works Week when local media interest in public works is present and resources are frequently available to cover the story. Most of the time, the award is personally presented by an officer or elected member of the APWA Board of Directors. Many past Top Tens normally attend this luncheon also. Over the years, this has been a very successful program for the chapter, raising our image and capitalizing on the opportunity to promote our profession.

The Chicago Metro Chapter has always enjoyed a great kinship, camaraderie and mentorship among its members. Some of this is due to the relatively small geographic size of the chapter (5,395 square miles, or about the area of Connecticut & Rhode Island combined) but more importantly, the fact that most of our leaders stay involved in the chapter through ongoing networking and a sincere attempt to stay in touch well beyond their time on the Executive Committee and well into retirement. This involvement provides a historical perspective (especially to our younger and upcoming members) on past chapter activities and often inspires new challenges, opportunities, programs and activities.

At this year’s Top Ten luncheon for Joe Fennell, a new way to recognize the selection was discussed by several of the past Top Ten selections that attended the luncheon. All agreed that it was an idea worth exploring. After discussing the matter further several issues were agreed upon:

• Whenever the chapter is honored with a Top Ten selection, a special intimate luncheon will be held to welcome them into the special group of members.

Larry Lux
President, Lux Advisors, Ltd
Plainfield, Illinois
Trustee, Public Works Historical Society
• The purpose of the luncheon is intended to give the current awardee special recognition as the newest chapter member to be inducted into this elite group.

• This decision eventually evolved into a special luncheon to which only past Top Ten selections were invited. It gives the former honorees an opportunity to share their Top Ten experience and otherwise renew old friendships.

• The most recent honoree will be responsible for organizing the luncheon and confirming attendance. This will be done in sufficient time to allow out-of-town selections to attend if they choose.

Of the 36 honorees from the chapter, 11 are deceased and 4 were unable to be contacted. Of the remaining 21, several now live in other parts of the country, were unable to attend or had other commitments.

On July 28, 2014, the remaining 14 gathered to begin what will hopefully become a new chapter tradition.

The luncheon was held at the Rosewood restaurant in Rosemont, Illinois on July 28, 2014, with 14 former Top Tens in attendance coming from Ohio (1), Indiana (1) and Wisconsin (2) plus 10 local area members. Many moving stories about the positive impact of being a Top Ten had affected them both personally and professionally. In addition to breaking bread together, numerous funny and entertaining stories were swapped during a relaxing and enjoyable 2½ hour event. Everyone indicated that they had a wonderful time and expressed a desire to make it an annual event. This year’s event was hosted by Chris Burke (2013 Top Ten), President of Christopher B. Burke Engineering, Ltd.

The following are a few of the many unsolicited comments that were received from those who attended the luncheon:

“You had to be there to feel the energy and attitude. What a great group of individuals from large government agencies to well-respected consulting firms to small communities with one thing in common: they are all true leaders in our profession.”

“I had a fantastic time seeing everyone and rekindling valuable friendships. What an outstanding group of professionals. I am proud to share this special bond.”

“I thoroughly enjoyed rubbing elbows with some of the brightest professionals in the area. It stirred a lot of memories and started the juices flowing again.”

Next year’s event will be held on Monday, July 27, 2015. I, for one, am anxiously looking forward to it.

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Discovering the Council of Chapters

Sharica S. Ware
Chapter Relations Manager
American Public Works Association
Kansas City, Missouri

For more than 50 years, delegates and alternate delegates from APWA chapters have served as members of the House of Delegates, have provided a unified voice, and have been liaisons for chapters to the APWA Board of Directors through Regional Directors. Each delegate and alternate delegate has been part of a group that was the vehicle for disseminating information association-wide to and from members within the APWA network of chapters.

Over the years, there has been discussion about how delegates, alternates and the House might make more meaningful contributions to APWA. Whether it was strengthening communications or the House acting as a “think tank” and tackling emerging issues, there was recognition that leaders in the House were an underutilized asset. To their credit, delegates and alternates were eager to do more. During the 2013 Spring Board of Directors meeting, the Board discussed the many ways the House of Delegates could take a more active role in addressing key strategic priorities of the association and how the House of Delegates can serve as an advisory body to the Board and staff. Thus, the Council of Chapters was conceived.

To advance this initiative, a House Refocus Task Force was created with nine delegates, one from each region. Led by past president Elizabeth Treadway, the Task Force outlined the many ways the House of Delegates could reinvent itself to better serve all chapters and APWA. This task force was also designed to pinpoint the core responsibilities of the Chapter Delegate, identify newly formed committees, and establish goals and procedures under a new structure called the Council of Chapters. This initiative resulted in several changes to the role of the delegate. The role of the Council of Chapters will be to serve the organization as advisors to the Board of Directors, Technical Committees and other committees and staff in support of APWA’s mission and strategic initiatives.

Understanding Leadership

The Task Force determined that the Council will be governed by a Steering Committee consisting of nine members, one selected by delegates from each of the nine APWA regions. Each region acted in the spring of 2014 to select Steering Committee members and the first Steering Committee includes Carl Quiram, P.E., PWLF of the New England Chapter, Region I; Charles Jones, P.E., of the Central Pennsylvania Chapter, Region II; Dawn Odom of the Mid-Atlantic Chapter, Region III; Suzanne McCain, P.E., of the Louisiana Chapter, Region IV; Leslie Bland of the Michigan Chapter, Region V; Joe Johnson, P.E., PWLF of the Kansas City Metro Chapter, Region VI; Herbert Blomquist of the Oklahoma Chapter, Region VII; Helena Allison, ING, PWLF of the Sacramento Chapter, Region VIII; and Andrew Stevenson of the Saskatchewan Chapter, Region IX.

The Steering Committee will serve as a resource to the Council of Chapters’ committees by guiding the work of the Council as well as being a liaison to the Board of Directors, National President and the executive staff. Each member of the Steering Committee will serve a three-year term, with initial terms staggered (from one to three years) and all can be reappointed by the delegates from within their region. In addition, the Steering Committee will provide feedback on Council committee work, will help committees remain on track with targeted missions and action steps, and ensure committees are not duplicating efforts of other Council committees and/or APWA standing committees.

The Council Delegate

The Council Delegate will serve various roles in support of the mission as an advocate, liaison and resource for APWA. One very important role is serving on one of eight committees initially created by the Task Force on topics for the delegates and alternate delegates to tackle under the new Council structure. Each member was provided a survey to indicate their interest and the committee they wish to serve on. The initial committees include Membership Recruitment, Public Works Leadership for the Future, Chapter Capacity Building through Mentoring, Infrastructure Financing for the future, Advocacy at the Chapter & Local Level, Congress Participation, Marketing & Promoting Donald C. Stone Center and the PACE Awards. Committees will meet throughout the year via conference calls and webinars.

During the inaugural Council of Chapters meeting held at the 2014...
Congress in Toronto, members met with their prospective committees to determine their action items for the year as a newly formed committee. Below is an overview of each committee’s action steps.

**Membership Recruitment**
- To recruit “younger” members through innovative technology and student chapters
- To enhance the APWA’s image by educating elected officials and city managers about APWA and its benefits
- To engage the Small Cities/Rural Communities Committee and gather information on how to target small and rural communities for membership

**Public Works Leadership for the Future**
- To discover ways to attract, retain and engage young professionals
- To effectively market the profession
- Outreach efforts aimed at middle school and high school students

**Chapter Capacity Building through Mentoring**
- To generate a survey internally to determine “priorities” for this working group
- Once the priorities are established, the Committee anticipates the need for each chapter to perform a self-assessment and to come with its own Chapter Best Practices. This data will be used to identify chapter-to-chapter mentoring opportunities

**Infrastructure Financing of the Future**
- Gather information (via a survey to the chapters) as to use of third-party service providers: treasurer, chapter administrator, marketing, newsletter/magazine publishing, event & expo planning/management

**CRUSHED FOR SALT? It’s not the only option.**

Rock salt isn't the only snow and ice fighter. Cargill Deicing Technology offers advanced, proactive products and systems for helping keep winter roads safe and reducing the amount of needed applications. From treated salt and brine makers to anti-icing pavement overlays, we make sure you're not left out in the cold when it comes to effective winter maintenance.

Reduce your bulk salt needs next season and still keep your roads safe. Learn more. Contact 1-866-900-7258 or visit www.cargilldeicing.com.
Advocacy at the Chapter & Local Level

- To review past appropriate task force reports and studies
- To develop and deploy surveys to chapters to be completed, tabulated, summarized and out to committee in advance of mid-October conference call
- To plan and schedule mid-October conference call to review material and survey results

Congress Participation
- Pull Congress data to cross-reference those who attended and attendance habits
- Survey members and previous attendees about their reasons for not coming and what would influence them to come
- Build a testimonial program from past attendees

Marketing/Promoting DCS Center
- Participate in PDC and the identified four Council meetings
- Consider interface with other APWA programs, specifically Accreditation
- Encourage graduates of Public Works Institutes to apply for DCS

PACE Awards
- Create and provide resources to help chapters meet the PACE Award criteria
- Create a PACE Chapter-to-Chapter mentoring program to encourage chapters who have never submitted to apply for the PACE Award and to guide chapters who have noted deficiencies with their PACE submission

These committees now serve as the first step in strengthening chapters and aligning national initiatives at all levels of the organization. Each year, committees will be evaluated and revised by the Steering Committee to ensure it is strategically aligned with the mission of APWA.

As we enter into a new phase of APWA’s history, members of the Council of Chapters and its members are certain to continue to be an undeniable force as an advocate, liaison and resource to APWA at the local and national levels.

Sharica S. Ware can be reached at (816) 595-5259 or sware@apwa.net.
As we get ready to face the potential trials and tribulations of the coming winter, let’s take a few minutes to see what snowfighting was like in the United States without all the high-tech equipment we are about to put into service. Today, the primary goal is to remove the snow from the driving surface as soon as it becomes a hazard to the motoring public. But, when major modes of transportation were still limited to horse-drawn vehicles, the “down to the ground” approach wasn’t used.

Instead, wheeled forms of transport gave way to sledded ones as the snow and ice season would approach. In some cases this meant that an entirely different vehicle was used, and in other cases the vehicle had an interchangeable undercarriage or attachment that facilitated the transition from wheels to runners. When this occurred, traveling surfaces needed to be covered by snow and ice. Not only that, but the material needed to be groomed to make travel easier.

To this end, areas would appoint snow wardens who would travel the routes with a machine, which was a large rolling wheel that could have weight added or taken from the interior drum. The machine was controlled by a seated operator on top of the rig and pulled by horses to groom the travel path. This process was done in much the same way that grooming devices are used on snow mobile trails of today to make them easier to ride.

It was also part of the responsibilities and duties of the snow warden to accumulate and place snow on areas where the snow wore, melted, or drifted away on routes or bridges, and then to assure that it was rolled and ready for travel. Snow was allowed to build up over the course of the season. In parts of upstate New York and the northern regions of Minnesota, the snow was known to build up so high that the structures were intentionally constructed with doors on the second floor that did not lead out onto balconies or decks, but rather were there to allow access out of the buildings when the snow reached that height.

As recently as the 1970s, Yellowstone National Park, principally located in Wyoming and partially in Montana,
had its lodge manned by a single person over the winter months due to the fact that roads could not be kept open, and there was a need to have someone onsite in the event of a need or emergency at the facility. It is also said that it was such a desolate existence that no one individual volunteered for the annual duty twice.

Although these processes may have worked for more rural areas, in the commercial hubs of the United States, the snow would bring things to a standstill. The economic drain brought about multiple ideas and inventions for removing the blight of snow. In the second half of the 19th century, major metropolises such as Chicago, Milwaukee, New York, Minneapolis/St. Paul and others first began snowplowing and snow removal. There are records of streets being cleared of snow by hand. Seasonal workers, unemployed people, and even inmates of correctional institutions were, in many cases, the snow-moving force.

The first recorded “automated” snowplow for use on streets was horse-drawn and put into service in Milwaukee, Wisconsin, in 1862. It would not be until 1913 that a motorized snowplow was first used in Chicago, Illinois. Many ideas and patents sprang up for the process of snowplowing. Many of these were derivations of ideas that had been developed from the booming railroad industry. The railroads had been using plows on their locomotives for a long time. Snow would eventually build up along the sides of the tracks. To combat this issue, locomotives with huge snow blower devices mounted to their leading edge were developed and used to blow the snow away from the tracks and the surrounds.

This snow blowing-type device was used in some snow operations in the more rural areas of the Midwest and the West on a limited basis, but in areas where the buildings were already very close to the roads, the snow blowing was considered impractical, as it would build up against the buildings and it would prevent deliveries of goods as well as pedestrian foot traffic access to them. To combat this, snow removal systems were started—at first shoveled by hand into sleds designed for hauling, then taken to a place where melting could occur over time, and runoff allowed into a larger body of water. Eventually machinery, in the way of earthmoving and hauling equipment, was interfaced to load, transport, and dump the collected snow.

With systems in place for snowplowing and removal, the situation was much improved in the cities, but there was still the difficulty of ice, and snow which became compacted and caused slick frictionless surfaces. Again lessons from the rail industry were borrowed. In the event that traction was inadequate where the wheels were in contact with the rails, devices had been installed that administered sand/grit in a controlled fashion to allow the train to move. Sand was found to have some effectiveness on ice and snow-packed streets by providing traction. Later ash (in an attempt to save some costs and use a by-product of other industries) was added to the sand mix being used.

Getting around by motorized vehicles became a bit easier with Harry Weed’s 1904 invention of the “Weed Chain Tire Grip.” Although initially used on unpaved and heavily rutted roads in America, it soon became apparent that they also worked on icy and snow packed roads. As snow removal was not complete, minimal damage occurred to the roads by the tire chains because they wore the ice and

A 1931, 4-cylinder, 26-hp Fordson industrial tractor with plow used for snow removal
snow pack, more than the driving surface at the time.

In the mid to late 1920s, two brothers named Hans and Even Overaasen in Norway worked on the idea of each individual motorized vehicle (even passenger cars) being equipped with a snowplow to aid in the clearing of roads. Although they achieved some practical success with the idea in Norway, it did not catch on in the United States. Consider what commute times during snow events of today might have become had this idea caught on.

One thing which is still in common use to combat the ice and snowpack is salt. Oddly enough it was used prior to the 1940s, but not through application to the street surfaces. It was instead used as an additive to prevent the sand stockpiles from freezing. It was during the 1941-1942 winter season that New Hampshire became the first state to adopt a policy of spreading salt on road surfaces. During that winter, a total of 5,000 tons were spread over that entire state for that entire winter. Today small individual cities and villages use more than that amount in a season.

Following World War II, with the advent of superhighways, the “bare pavement” concept of having ice and snow-free driving surfaces very shortly after events became the norm for many areas in the United States. If one looks at the amount of salt used nationally in 1955 (one million tons), and compares it with that of 1970 (fifteen million tons) the radical increase can be seen.

In the early 1960s another innovation in the form of studded tires were introduced to the motoring public. Although they worked fairly well on the ice and snow pack, the changing out of tires with the seasons many times did not (and does not in western states of the United States that still authorize their use) occur. The damage done to the road’s driving surface, when it lacked the protection of the ice and snow pack, was extensive.

The above noted drastic increase in the amount of salt used also attributed to the reduction and replacing of the application of abrasives, such as sand, to the road surfaces. The reduction of the sand application also reduced traffic incidents. It was found that once the sand had been applied, and the snow and ice back melted away, the remaining sand and abrasives on the road surface affected the stopping distances of motorized vehicles. It was in some cases compared to trying to bring a wheel to a grinding halt while the wheel was on top of a series of a million little marbles. Not a good situation.

A more recent advancement has been the generation and application of saline solutions to work with, or even replace, solid form salt. In addition to “brewing” their own blends, various public works departments and divisions of transportation have tapped usable industry residue products for this purpose as well. Brine from dairy operations making cheese, water change-out at larger aquariums (where available), and even brine from pickling operations are only a few of the possible sources. In some ways this harkens back to the earlier noted use of cinder with the sands in days gone by, in that a by-product of another industry is recycled and used in a secondary way. Another up-and-coming technology is the introduction of organics. Some organics (generally carbohydrates) can be very beneficial when combined with deicing solutions.

Today’s equipment looks more like the inside of a cockpit rather than a traditional snowplow. Computerized controllers, global positioning systems, automated vehicle location equipment, lasers that read the pavement temperature and grip, cameras and even live weather radar displays are all features available for operators today. Trucks can be outfitted with traditional plows, but also plows with multiple blades, sacrificial blade edges, underbelly plows, wing plows and even a tow plow that can clear multiple lanes in one pass.

Winter maintenance research and the development of new innovative methods and materials is an ongoing process. Will there ever be a substitute for salt? Will we find different methods for removing snow from roadways? Although we cannot say with certainty what the future will hold in the way of salt and ice removal in the United States, we can say that we will be there to administer it, and try to make it the best possible experience for the motoring public. That is the role of public works!

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The Public Works Historical Society is an affiliate of APWA, with membership open to public works practitioners, authors, academia, and anyone interested in public works history. Membership in APWA is not required. Annual dues are $35, and can be added to APWA members’ regular annual dues statements. Please visit the PWHS website at www.apwa.net/PWHS/ for more details on the Society’s mission and activities.
Christopher Andersch is a reporter’s dream. I called him to talk about this article and, with the zeal of someone who has been reborn, he launched into his story with almost no prompting from me.

You see, Chris has a very good story to tell, and he is very excited to tell it.

He’s excited that he no longer has a job—he has a career! He’s excited because now he has a self-confidence he never had before, and he says he owes it all to the Public Works Supervisor (PWS) program. Chris is so grateful for these changes in his life that he says, “It is a debt I can never repay!”

Chris, who is APWA’s first official graduate* of the Donald C. Stone Center’s Public Works Supervisor program, is the maintenance and operations supervisor for Charlotte County, Florida. Virtually his entire job experience has taken place in that agency. His first day on the job was in 1987 when he was 19 years old. He laughingly related to me the big surprise he got on his first day with the County.

Thinking he was being hired into the building maintenance division, Chris noticed a group of very dirty, sweaty guys in orange T-shirts who had been out filling potholes as he was being shown around. He remembers commenting to the man who was showing him where he would be working that he was really glad he would not be doing that kind of work. That’s where the surprise came in. Chris was actually being assigned to the maintenance and operations division, so by the end of the day he had his own orange T-shirt and set of potholes to fill! He describes himself as a “lamb in a room full of lions” and said at that point, all he knew about equipment was what he had learned with his Tonka trucks in the sandbox.
But Chris stuck with it. He rose through the ranks, steadily progressing through the first, second, and third levels of maintenance operator. He became highly proficient in operating and maintaining all of the equipment he came in contact with, but he never got a chance to be a supervisor. In 2006 that changed when a temporary, 45-day foreman’s job became available. Afterward, the temporary position became a permanent position.

Unfortunately, though, the promotion came at a time when the agency’s budget constraints made it necessary to put its in-house training program on hold. Although Chris was anxious to do a good job, the best he could hope for was that he would get some formal supervisory training when the budget was restored and the training program would be reinstated. Of course, the rest of this part of the story is an all-too-common occurrence with public works budgets, and Chris had to make do as best he could.

He says of that time, “Trial and error is not recommended as a primary training tool.” As an equipment operator, he had “supreme confidence” in his abilities, but as a supervisor, he lost confidence in himself. He even started thinking about leaving public works. Note, I said HE lost confidence, NOT his employer lost confidence in him. But sometimes, being on the frontline, feeling like you’re making it all up as you go along takes a toll on self-confidence.

Fortunately, Chris didn’t let this tunnel vision totally shut him down. Instead, he went to his public works director and talked with him about his need for more training so that he could do his job better. His director’s response was not only encouraging, it was eye-opening for Chris. “Why did you wait so long for someone else to make the decision about your career,” he asked Chris. Then he told Chris to find the training he thought he needed.

Thus empowered to begin looking for training the agency could send him to, Chris began reading everything he could. At first he was concerned that he might need a college degree, but he persisted. In the meantime, his agency was going through organizational transitions, but Chris kept looking...
and—finally—he found what he was looking for in an ad in the APWA Reporter. What caught his eye was the bold assertion that “You’ve spent time in the public works trenches, now make the move to a desk!”

It was as if the ad were speaking just to Chris, as if it were on that page—just waiting for Chris to find it. At the lowest point in his career, by accident, a new world was suddenly opened up to him. He took the information to his director and got permission to enroll, and suddenly he was on a whole new road to success.

Of the program, Chris says he was dragged out of his personal comfort zone. He was exposed to different things he never would have thought of, which gave him new insights into how to solve his everyday challenges on the job. The program, which took him a full 18 months to complete, included:

- benchmarking his current status through a knowledge assessment,
- developing a professional development plan,
- creating a project with practical application to public works,
- documenting execution of the professional development plan by keeping a journal,
- creating a professional portfolio,
- completing an APWA-authorized Institute, and
- passing the post-program assessment.

He admits that he was dragged “kicking and screaming” through the process sometimes, but he also proclaims that he has gotten more than he ever dreamed from the experience. One valuable facet of that is the interaction he has had with other public works professionals at conferences and in classes. Where once he would have been reluctant to talk with supervisors and directors in those settings, now he realizes he has a rightful place at the table with them. And now, not only does he seek them out for advice, but also he is finding that others are seeking him out for his expertise as well. “That never happened to me before, and I like it,” he says.

Chris also points out that another huge asset to his success in the program was the relationship he developed with his program mentor, George Recktenwald, who is director of public protection for Volusia County, Florida. After being initially foiled by George’s office spam filter, the two men have formed a bond they find mutually beneficial. With George’s help, Chris has learned, in part, to see his own agency through new eyes, to look at it from the outside in.

Part of what he saw was that his County was slightly behind in some ways and that they had internal and external communication problems. “We treated ourselves as an island,” Chris says. To remedy that, he started building his own little network of people he could go to for guidance and commiseration about the challenges of his job. He credits George with helping him find the confidence to do that.

Part of the PWS program involves developing a theoretical project, which Chris took as an opportunity to improve his agency’s brand within the community. After noticing that the County’s vehicles bore smaller door emblems than they used to, he did some research and found a surprising
reason behind the downsizing. Door emblems used to be large (more than 14 inches) and easily visible at a distance, but they had been systematically replaced over the years by emblems small enough to be covered up by three fingers on a man’s hand. The reason for the change was that when vehicles were changed out, scraping off the large decals was a problem, hence someone made a decision to use the smaller decals when new vehicles were brought into the fleet. Working with the County’s public information officer, Elaine Jones, Chris’ project is restoring brand recognition by once again using larger emblems.

There is so much more to Chris’ story. For instance, he says “fear and intimidation are not acceptable management tools,” so he has come to understand supervising as a walk-around activity where supervisors aren’t just there to dispense orders. They are supposed to facilitate communication and teamwork. He may have finished the PWS program, but Chris says he isn’t finished with education. He’s thinking about going on to college, and sometime in the future he can even see himself in the position of assistant public works director—probably the best ever seen!

“There is so much more to Chris’ story. For instance, he says “fear and intimidation are not acceptable management tools,” so he has come to understand supervising as a walk-around activity where supervisors aren’t just there to dispense orders. They are supposed to facilitate communication and teamwork. He may have finished the PWS program, but Chris says he isn’t finished with education. He’s thinking about going on to college, and sometime in the future he can even see himself in the position of assistant public works director—probably the best ever seen!

“I have a solid stepping stone now. I know I am not alone. With the support of people below you and the understanding of people above you, you can do anything.” Of the debt he can’t repay, Chris says, “All I can do is do all I can to help others. Anybody can make a difference!”

Connie Hartline can be reached at (816) 595-5258 or chartline@apwa.net.

* The PWS designation was conferred on three candidates in July 2014: Christopher Andersch, July 8; Christopher Decoskey, Concrete Crew Leader, Town of Kernersville, NC, July 23; and Dale Metzinger, Street Superintendent, Town of Kernersville, NC, July 25.
Sylvia Graham is a breath of fresh air here at the City of Bellingham, Washington. Her positive attitude and genuine smile make it easy to follow her lead as she takes pollution prevention education to a new level.

As a Local Source Control Specialist for Public Works, Sylvia reaches out to small businesses in our community, assisting them with hazardous and solid waste management, understanding regulations, and pollution prevention.

Sylvia spearheaded the successful promotion of our Stormwater Hotline using the tagline, “Spills happen. Help us find them.” She created a tracking system to organize calls and responses, including an online submittal form with QR code. We’ve seen a spike in calls since outreach began!

Sylvia leads by example, riding her bike to work every day, and knows that the City of Bellingham must be a leader in our community as well. She recognizes when systems within the City need improvement and works actively to create solutions. She revamped the City’s battery recycling program to make it user-friendly and changed it from elective to standard operating procedure to help minimize the production of hazardous waste.

Sylvia chairs the City’s Municipal Stormwater Committee, a team of representatives from various City departments. She recently created a training program, including a video and test, for all field staff in the City, to recognize, report, and respond effectively to stormwater pollution.

She builds bridges between departments, develops partnerships, and organizes systems. Sylvia accomplishes everything with a smile and a resolute never-say-never attitude.

*Submitted by Mindy Collins, Local Source Control Specialist, City of Bellingham, mcollins@cob.org*
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Utilizing your network

John Burke, P.E., CFM
Senior Civil Engineer
City of Westminster, Colorado

“One of the most critical elements of any organization is having a team with the knowledge, dedication and motivation to take on any task. If a certain knowledge base is lacking, then it’s critical to build a network of people that have the desired expertise. In this information age, information is not the key element, it’s the ability to connect and create authoritative networks of people across the world that can be your experts in any situation.

A great example of using such a network occurred on October 16, 2013 in Longmont, Colorado when the Environmental Crimes Task Force (created by Troy Arnold, an investigator for the Colorado Attorney General’s office) was able to quickly identify and appropriately handle a potentially dangerous situation (see Photo #1). Code enforcement supervisor Shannon Stadler was called out to a resident’s garage after the fire department determined the operation wouldn’t explode.

Not surprisingly, she couldn’t quickly ascertain whether the operations were legitimate or not.

Thankfully, due to the quick distribution by Troy Arnold and others, the picture made it into the hands of someone who could identify the operation. Within minutes of distributing the photo to this network, Shannon received a phone call from Washington Air National Guard Lieutenant Colonel Scott Humphrey from the 10th Civil Support Team, Weapons of Mass Destruction, Camp Murray in Tacoma, Washington. The Colonel told her that based on the photo, the resident was attempting to make pure ammonia from scratch to either use legitimately in refrigeration systems or illegitimately to make methamphetamine. In many cases, it’s not what you know but who you know that makes all the difference. In this particular situation, that couldn’t be more true.

At some point in time each of us will face situations that are well beyond our knowledge or expertise. The question is, what will you do? What resources do you have to pull from? If you always rely upon your own knowledge to make every decision, you immediately limit yourself on what you can accomplish.

We all need to have expert networks that we can rely on when necessary.

In another example from this past summer, I was forwarded an e-mail showing the following picture with the caption “Hazard Alert – Fracking Pipe” (see Photo #2).

Anything with the word “fracking” immediately brings heightened awareness these days and when
add a safety issue for our public works employees potentially finding something explosive on the side of the road, this becomes even more troublesome.

The e-mail stated that metal recycling companies and landfills are turning away customers trying to recycle or dispose of fracking pipe as sometimes the explosive charges in the pipe do not detonate and are still “live” within the pipe. As such, the would-be recyclers may improperly dispose of the fracking pipe along roads or rest stops, so caution should be taken if our crews happen to find such a pipe.

In this case, the photo was quickly forwarded to a number of people and within a couple days, someone with specific knowledge about fracking operations was able to quickly dispel this myth.

Again, without a trusted knowledge base, we are all susceptible to Internet unaccountability. People can make claims, legitimate or not, and not feel the repercussions for disseminating false information. The second tier of your network needs to include a group of experts that can “myth bust” and allow you the ability for technical discernment.

Lastly, leverage the experts even when they happen to work for other jurisdictions. All public organizations are mandated to meet certain federal and state requirements. Many times organizational structures and budgets are so lean that we can’t possibly be the best at all the things we are required to do. So, we do the best we can with what we have. Many times this is sufficient—but we always strive to do better. Given budget constraints and operational efficiencies, we need to look outside our organizations and start leveraging the network that exists throughout other organizations.

This was exactly how the Colorado Stormwater Council (CSC, www.coloradostormwatercouncil.org) came to fruition. As the 1987 reauthorization of the Clean Water Act continued to force states to implement more stringent water quality criteria on Municipal Separate Storm Sewer Systems (MS4s) across the United States, many cities were at a loss as to how they would implement these regulatory requirements.

In 2006, two of the Phase 1 MS4s in Colorado combined efforts, reached out to other communities across the state and formed the CSC as a nonprofit organization. The CSC brought the regulated communities together in an effort to share information and assist with the implementation of individual program requirements. An important aspect to note is that since its creation, the individual MS4s no longer feel alone in their efforts in dealing with the state permit requirements for their respective jurisdictions. Many of the permit requirements are similar, so why not strategically leverage the strengths and talents of cities across the state?

That’s exactly what the CSC was able to do. In 2012, the Colorado Department of Public Health and Environment implemented Regulation #85 which required all MS4s to develop a data gap assessment specific to nitrogen and phosphorous nutrient loading in streams. Because the CSC was already established as a proactive organization working with the state on this regulation, the requirements were written in such a way to allow MS4s the ability to collaborate with the state and other MS4s to develop a single comprehensive data gap assessment.

In short, through combined efforts, the CSC and the Urban Drainage and Flood Control District (UDFCD) hired a consultant to prepare a detailed analysis for nutrient loading that will be referenced nationally during the advancement of other nutrient criteria. This technical analysis and formal report cost over $60,000 to prepare and each of the CSC members will be able to use it at no additional cost beyond their annual dues. In fiscally lean times, this network saves staff time and significant budget dollars.

In this information age, a network of trusted relationships is crucial. Today’s leaders are not only measured by who they are, but by the networks they are connected to. Or to quote Ken Blanchard: “None of us is as smart as all of us.”

So the next time you’re facing a challenge, connect to a network of experts and leverage their experiences as well as you own. You’ll find great people with similar interests and over time you’ll be the one to share your experiences to help others.

John Burke can be reached at (303) 658-2126 or jburke@cityofwestminster.us, or www.johnburke.net.
The 2014 APWA Congress was truly an international event. Not only was it hosted outside the United States for the first time since 1988, but this year a total of 16 countries were represented at Congress. From awards to special guests and renewal of international partnerships to fellowship and “getting screeched,” the Congress experience in Toronto will be remembered for many years to come.

The International Affairs Committee offers heartfelt thanks to the Ontario Chapter and all the Canadians for being such gracious hosts.

We have assembled for your reading pleasure a sampling of comments from our international guests and those that spent time with them at Congress.
Noel Thompson, APWA Past National President

• “I enjoyed being an International Ambassador and think the program proved to be an enhancement for the 2014 Congress. The chapters and international guests enjoyed becoming acquainted and sharing at chapter dinners. My international guests also went to the First-Timers Meeting where they were well received, met new people, received good tips for having a productive Congress and a general orientation.”

• “Everyone had a good time at the International Reception. It was a bittersweet occasion as we bade farewell to Jiri “George” Neuzil, who is retiring as Executive Director of CZPWA/SPCWA and Ross Vincent, who is retiring as Executive Director of IPWEA-NZ. On the other hand we welcomed new Nordic partners—Finland, Sweden, Denmark, Norway and Iceland—and we renewed our partnerships with IPWEA and IPWEA-NZ. We also marked the occasion of starting a relationship with Ghana.”

Magnus Quarshie, President, Ghana Institute of Engineers

• “Thanks for the opportunity to hear and meet Chris Hadfield. I can’t help but share his inspiration with my family and all I meet. I looked him up on YouTube, particularly the song he sang with school children around the world. As I read his book he says think like an astronaut. I am trying this. Very soon I will be signing autographs...”

Daniel Przychodzki, Team Leader, Transport, City of Greater Dandenong, Australia

• “The APWA Congress was an excellent opportunity to connect and network with our North American colleagues and learn from each other’s experiences.”

• “Everyone in Toronto were fantastic hosts and the volunteers were always smiling, helpful and very friendly.”

Warren Roberts, Chief Executive Officer, City of Stonnington, Chairman of the Municipal Engineering Foundation, Victoria, Australia

• “The APWA Congress is one of the highlights of the Municipal Engineering Foundation of Victoria..."
Study Tours. It provides a fantastic opportunity for professional and personal development of awardees, provides a helpful context for understanding the similarities and differences between our countries and public works practices in Australia, U.S. and Canada.”

- “The networking and cooperation of municipalities in organizing site visits and giving up their valuable time to share experiences and celebrating what they do is amazing.”

- “Congress also provides the opportunity to catch up with colleagues and friends and enjoy the hospitality of the host city.”

- “APWA Congress and the international relationships, collaboration and knowledge sharing is of great benefit to everyone.”

Ms. Ebony Perrin, Environmental Service Team Leader, Moyne

Shire Council, Port Fairy, Victoria, Australia

- “Highlights of the APWA 2014 Breaking Boundaries Congress for me were embracing complexity, place making, harder working infrastructure, advocating public works, alignment and commitment to change.”

- “As a Victorian ‘Echo Boomer’ in public works, I return home from Canada to Australia excited about the career opportunities as we embrace resilience as the new sustainability.”

Fred Schattner, International Ambassador, Village Engineer, Village of Skokie, Illinois

- “I enjoyed it and appreciate APWA including me as one of the International Affairs Committee’s hosts and allowing me to participate in the new Ambassador program. I liked being with representatives of different organizations and mingling with people I don’t know and making new friends while helping APWA with Congress.”

Rick Kwasek, Manager, Public Spaces and Capital Works, City of Stonnington, Australia

- “APWA Congress in Toronto was a key destination of a Study Tour sponsored by the Municipal Engineering Foundation of Victoria. It was an amazing event with amazing keynote speakers at the plenary sessions.”

- “Chris Hadfield presented a keynote speech not to be missed. His insight into life on a space station was inspirational and his views and approach to motivation, teamwork and preparing ourselves for the world of the unknown was fascinating.”

- “Ian Hill provided a unique perspective of the public works in North America and his passion and commitment was clearly evident throughout his presentation. He was an inspirational speaker which I have referenced on more than one occasion since my return home to Australia.”

Ms. Joy Schaad, International Affairs Committee, International Ambassador

- “I enjoyed being an Ambassador for Congress again this year as I was assigned two attendees from Scandinavia. Getting to know them and visiting again with Finnish attendees, who we hosted last year in Chicago, felt like ready-made friends for the many events and programs we attended.”

Dan H. Langstrom, Manager, International Affairs, Public Works Department, City of Helsinki, Finland

- “Everything went really well. The International Reception was good, the meetings as well. We (the “internationals”) were taken care of, like royalty. Personally I’ve been to the APWA Congress five years in a row, and I have always felt VERY welcome.”

- “It was good to get the North American–Nordic Task Force underway, and naturally we hope to have it blooming in the future. I’ve been to APWA Congress for the past five years, and every time I/
we have had something interesting to bring home with us—new ideas, something interesting from the Expo, etc., and I’m sure that we can learn from each other more in the future.”

Ms. Inger Sundstroem, International Relations, Swedish Association of Municipal Engineers

• “APWA yearly Congress was the place to be, all well organized, including a broad spectrum of topics for everyone to have many choices to learn.”

• “I admire the impressive work my peers in public works, across the globe, do for their constituents, and the pride they feel in the importance of their work.”

At the Get Acquainted Party, the Newfoundland Chapter dragooned a lot of the international guests into becoming Official Honorary Noufies. Each new Noufie kissed an odiferous cod that had lain on the dock in the sun all day, got “screeched” and toasted, in Noufie sailors’ parlance, “May your big jig always be drawn!” Or, in Craiger Kennedy’s vernacular, “mayr bijig als b’dra!” There were many laughs, and no reports of casualties.

The 2014 APWA Congress was a better event due to international guests (beyond the U.S. and Canada) and several activities focused on them. The International Affairs Committee wants to thank our guests from all the other nations: Australia, Chile, Czech Republic, Finland, Ghana, Guam, India, Israel, Japan, New Zealand, Nigeria, Slovakia, Sweden and the United Arab Emirates. Their travel, commitment and involvement reinforces a quote by Rollo May: “Communication leads to community, that is, to understanding, intimacy and mutual valuing.”

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How research advances practice

Research, generally speaking, is a systematic effort to gain knowledge and understanding about our universe and how it works. A person observing and naming a previously unrecorded beetle species is engaged in research, as is another person carefully measuring how far a bar of steel can be stretched before it separates into two parts. Research fundamentally is about discovery; whether or not the knowledge gained will have some utilitarian value is beside the point.

Many past discoveries have turned out to have such value, of course. Imagine for example where medical practice might be today if Dutch eyeglass makers had not discovered late in the 16th Century that putting several lenses together could greatly magnify our views of very small things. The idea that someone might set out explicitly to discover new and better ways to get work done or amuse ourselves is the basis for what we now refer to as “applied research.”

The path from discovery to use can be twisting, with forks along the way leading to different destinations or dead ends. The discovery that pollutants threatening the survival of fish and other wildlife in streams might be coming from the roads and bridges in a watershed, for example, spurred efforts to describe exactly what is the pollution and where was it coming from, how it was getting into the stream, and then what can be done to protect the stream’s water quality. Some of these efforts were sponsored by the National Cooperative Highway Research Program (NCHRP, the program I work with). Public works agencies are using the results of such research to deal with stormwater runoff from roadways, particularly in places where the stream may host rare, endangered, or simply very popular wildlife species.

Bridges present special challenges, however. The U.S. Environmental Protection Agency (USEPA) has reasoned that since bridge pavements, as extensions of the connecting highway, could be a particularly serious source of pollution because stormwater runoff goes directly into the stream. Runoff from the roadway, even without particular management or treatment action, will typically drain across gravel, grass, and other surfaces where pollutants may be to some extent filtered or settled out before the water reaches a stream. The agency’s reasoning suggested that bridges might require addition of special drainage and treatment features to protect watersheds, a potentially costly and technically daunting conclusion for bridge engineers and maintenance crews to accept.

Recent research findings suggest that the pollutants carried by stormwater runoff from bridge decks may be no more damaging to streams than those from overland roadways. Some evidence indicates that particulate matter (dust, debris from tire and brake wear, and dried deicing salt for instance) that accumulates on a pavement is re-suspended by vehicle- and wind-induced turbulence in dry weather. That pollution can drift from a bridge deck directly into a stream; from the roadway, it most likely resettles on the shoulders, to be picked up with runoff when a storm occurs. Gallon-for-gallon, runoff from the bridge may then be cleaner than that from the rest of the road. Other research, some of it funded by state departments of transportation, has found no significant difference between runoff pollution loads from bridges versus roadways.

Such research results—showing that bridge runoff is no worse than roadway runoff—may encourage regulatory authorities inclined to require special treatments for bridge runoff management to adopt more cost-effective alternative strategies.

How radio-frequency identification (RFID) tags came to be widely used—on rail cars and municipal trash and recycling receptacles, among other applications—is a longer story. German and English physicists at the end of the 19th Century discovered the principles of electromagnetic radiation, providing the basis for such useful inventions as radio, television, cellular telephones, and radar. The latter invention (the word derives from “radio detection and ranging”), which was the product of a Scottish physicist’s research in the 1930s, began to find use in World War II to spot approaching aircraft while they were still distant. (The link to today’s microwave ovens is a story for another time.)
Researchers on a top-secret WWII British project put a radar transmitter on each British plane, set up to send a response when activated by a signal from the ground, identifying the aircraft as friendly. According to RFID Journal, an industry source, this was the first active RFID system; today’s RFID transponders work essentially the same way.

Continuing research after the war produced a variety of devices using radio waves to deter theft from retail stores, unlock doors, track cattle, pay highway tolls and transit fares, and more. Formation of an industry-led, international standards organization and the explosive growth of the Internet provided fertile ground for use of very simple—and therefore low cost—transponder chips that could be placed on almost any object. Carrying only an identification number and the electronics to respond to a radio signal from a reader, these chips could be used to identify and track almost anything. Applied research produced protocols for the interaction of readers and tags, the Electronic Product Code numbering scheme now used for identifying tagged items, and the design (that is, the “network architecture”) for looking up an RFID tag’s data on the Internet. The research has revolutionized how companies manage their supply chains, the transition from raw materials to manufactured products to goods in the hands of users and consumers.

The research is spurring changes in the public works arena, as well. City-issued collection carts for garbage, recycling, and yard waste, each equipped with an RFID tag, can be tracked with handheld computers that send data on each cart to a Web-based host server. The city’s sanitation department knows where a container is and whether it is being used. Managers can monitor what customers are doing and adjust work schedules, routes, manpower, and vehicle use to keep service levels high and costs down. In addition, just as companies can target ads based on web-browsing behavior, the city can use the waste-bin data to direct public education and marketing activities.

David Derrick—Kissimmee’s (FL) recently retired Public Works Director and one of APWA’s 2014 Top 10 Public Works Leaders—is a big fan of the technology. “My hope,” he said in a recent interview, “is that we will eventually be able to charge a customer for each and every pickup the vehicles make, versus the current model where everyone is charged the same no matter what they dispose of. This will let managers charge different rates for different commodities based on their value or disposal costs.”

Many people may think of research as the work of white-coated scientists and technicians working in specially equipped laboratories. However, anyone really can set out to make useful discoveries through systematic effort.

For example, results of research to develop a methodology for estimating the life expectancies of major types of highway system assets were presented in NCHRP Report 713: Estimating Life Expectancies of Highway Assets. (Full disclosure: I was the staff officer responsible for the research project; the 2-volume report is available online.) Public works designers and maintenance managers may use estimates of asset life expectancies to make decisions about how to construct public works facilities or what equipment to purchase, when to undertake major repair or reconstruction efforts, and when to make replacements. Some of the methodology in NCHRP Report 713 is adapted from the electric-power industry.

A lack of data on past experience often limits the accuracy and reliability of these estimates, however, particularly when local climate conditions, materials, operating policies, and other such factors unique to a particular agency’s situation can make a big difference. Using maintenance work orders or crew reports to build up a simple data base—for instance, of conditions where and when streetlight outages or sewer overflows occur—would be a first step in research to understand better how to manage service quality and cost.

Of course, discovery—the result of research—is a first step. Daniel J. Boorstin, the twelfth Librarian of Congress, wrote in the preface to his book The Discoverers, published in 1983, that the world as we now know it “…the vistas of time, the land and the seas, the heavenly bodies and our own bodies, plants and animals, history and human societies past and present—had to be opened for us by countless Columbuses.” The contributions of the many explorers and builders who follow each discoverer advance our understanding and the utility of the initial discovery. Through this progressive expansion and application of knowledge, research advances practice, in public works and other human endeavors.

Andrew C. Lemer, Ph.D., is a member of APWA’s Engineering and Technology Committee and a Senior Program Officer at the Transportation Research Board. The statements and views presented here are his alone and do not reflect positions of APWA, the Engineering and Technology Committee, or the Transportation Research Board. He may be contacted at alemer@andrewlemer.com.
Pass the salt please

Matt Wittum
Public Works Supervisor
Village of Spring Grove, Illinois

With the salt shortage many agencies across the country faced in the 2008/09 winter season not so far in the past, the monster has shown its face again for this upcoming winter. Winter 2013/14 pushed the resources of many agencies across the country to their maximum last winter, including salt. Multiple regions were hit with snow event after event, record-breaking cold and wind events that haven’t been experienced in decades. In lieu of that, agencies looking to replenish their salt supplies for this winter have run into similar procurement issues experienced just a little over five years ago. Salt companies that struggled to fulfill renewal contracts, left new contract solicitors with no bids and

No salt needed! This late-season storm was treated with liquids only. One side of the road was anti-iced and one was not. No granular material was used for the event.
on their own. When agencies had to go out on their own they discovered that when they did find salt, their cost went up as much as 120% versus last year. So what does an agency do? In a certification class in McHenry County operators are told the price of salt should not dictate our application rates or policies. Can that be true? Should it be true?

Before an agency changes its material application policy based on salt price and availability, I would recommend taking a good look at the policy as a whole and when it was last updated. There are many things that an agency can do to assist in a difficult time such as this that can have a direct effect on its usage of salt. First and foremost is literally free (besides staff time) and it is calibration. Yearly calibration of equipment is critical for operators to know how much product they are putting down, especially if multiple operators share multiple vehicles. Calibration can also be necessary when repairs are made to the vehicle’s application or hydraulic system. In recent years, new application charts with route cycle times calculated into them conclude that 300 pounds of pre-wetted salt per mile is an application rate that can cover many winter events/circumstances. You may find that setting 2, that always gets the job done, is putting down two or more times the material you actually need for a situation.

Another operational procedure to take into account is to never apply material without plowing first. Attempts to “burn” snow off the pavement are a waste of material and should not be allowed. Anything a plow can remove should be taken off the pavement before an application. Salt also needs time to work. Re-plowing a road too soon can also be a waste of materials, which is why route cycles become a big factor in application rate tables.

Another option is to change the vehicle’s distribution system from manual to computer controlled. Computers can regulate the amount of salt desired and keep it constant no matter what the vehicle speed. Manual systems require you to stay at a specific speed to spread your desired rate. Agencies that have gone through this expense find the cost of
the upgrade is often recovered in the first year the new system is used by being able to apply the desired rate no matter what the speed of the truck.

A very good way that an agency can reduce salt usage is to start using liquids, and agencies that use them should explore their options to expand their current programs. Liquids have proven themselves time and time again to be a benefit both pre-event and during an event. Liquids have shown to save substantial amounts of dry material with claims around the industry of saving 30% (or more). Think about cutting 30% of your dry material and the dollar amount that equates, especially in a winter like we are going into where agencies have received prices up to $140.00 per ton. An agency that is looking into getting liquids can and will discover that the costs of startup may not be as much as perceived. Options to purchase brine production and blending systems are out there. There are also companies that will sell you brine alone or just about any type of blended product you are looking for if production is not part of your agency’s plan. Another option is to build production and blending systems in-house. This has been done and at minimal costs.

On the subject of material savings, many salt suppliers now offer treated product for agencies looking for the benefit of liquids without the process of production, storage and application equipment. Again, examples of savings versus dry material have been cited and experienced in the field. Something that also has been tried successfully is using treated materials with liquids, and examples of additional savings versus dry materials have been made while achieving very good results in the field and positive feedback from operators.

There have also been upgrades to the application equipment itself. An example of this is the salt slurry generator by Monroe Truck Equipment. The slurry generator has a crushing mill in it that crushes the rock salt before it gets treated with liquid and spread. This creates a “paste”-type product that has almost no bounce and scatter and therefore no lost material off the road. It also increases the salt’s volume. This has been witnessed first-hand as I did not believe this to be possible. But a five-gallon bucket of salt run through the mill filled a five-gallon bucket and about one-third of a second bucket.

Finally, reducing salt usage will also help save the environment. More concerns have surfaced across the country in the last 10 years regarding salt usage and ground/freshwater contamination. Agencies have been forced to reduce their salt and not by their choice. You will never be able to assign a dollar amount saved when it comes to the environment, although some will argue that it’s priceless.

In the end, a salt shortage situation should not bring terror to municipalities when it surfaces following a harsh winter. This opportunity should be taken by an agency to take a look at its snow and ice control program and to make changes. The dollar invested in the beginning will turn into dollars of savings in the end. It may be tough to bring change, to train for it and adapt to it, but if everyone does their part and applies their salt responsibly and properly, the odds of a potential shortage following a harsh winter will decrease and agencies can turn their focus to the other parts of winter maintenance.

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Finding the big issues in winter maintenance
…and figuring out how to fix them

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Iowa City, Iowa
Member, APWA Winter Maintenance Subcommittee

How do you find out what the biggest issues are in winter maintenance in North America? And once you have figured out those biggest issues, what can you do about them? These were a couple of questions that have been on the minds of a lot of snow and ice folks over the past year and among other activities, a session at APWA’s North American Snow Conference last May took a pretty hard look at the first of them.

The session was organized and run by various members of the APWA Winter Maintenance Subcommittee. Some of those members serve on other committees for other agencies, and as a result know that there is quite a lot of discussion about what the big issues are and how we might address them. For example, every two years, AASHTO organizes a winter maintenance peer exchange, to which each state can send two representatives to discuss research needs for the next two years. About four years ago, NCHRP published a document entitled “Grand Challenges in Winter Maintenance”—the result of a two-day brainstorming session. Every January, the TRB Winter Maintenance Committee discusses research needs. But until now, there has not been an attempt to canvas the APWA community as to what their needs are for winter maintenance. The subcommittee expected that some needs would be very similar to those at the state level, but some (for example, snow storage issues) might be huge in an urban setting but of really low importance for a state DOT.

So, we held a session, and for 90 minutes (after a brief introduction) the session attendees (about 60 folks in addition to the speakers) shared ideas, wrote them down, and finally (and rather hurriedly, time was running out) voted on a whole bunch of ideas. The ideas were grouped into nine areas, shown in Table 1.

As might be expected, some of the areas generated more ideas than others, and the number of ideas or needs generated in each area is shown in Table 1 (the number in parentheses behind each area). And not all of the ideas were expressed in deathless prose either. We are pretty certain that the idea (from the management section) titled “Continuing to do things the way we always have, been doing it for 20 years,” was not in fact calling for no changes to occur but rather for the opposite! Nonetheless, most

### Table 1: Areas of Need Used in the Session

<table>
<thead>
<tr>
<th>Areas of Need</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment and Sustainability</td>
<td>15</td>
</tr>
<tr>
<td>Storage and Yard Operations</td>
<td>6</td>
</tr>
<tr>
<td>Administration, Leadership, Management, and Training</td>
<td>24</td>
</tr>
<tr>
<td>Contracting and Contracts</td>
<td>14</td>
</tr>
<tr>
<td>Plowing, Unique Intersections, and Special Operations</td>
<td>7</td>
</tr>
<tr>
<td>Weather Forecasting and RWIS</td>
<td>14</td>
</tr>
<tr>
<td>Materials, Liquids, and Pro-Active Operations</td>
<td>13</td>
</tr>
<tr>
<td>Equipment, AVL, and GPS</td>
<td>13</td>
</tr>
<tr>
<td>Media and Social Media</td>
<td>10</td>
</tr>
</tbody>
</table>

The interactive session “What are your top ten winter maintenance issues” informed the APWA Winter Maintenance Subcommittee of the topics that were of greatest concern to the attendees.
of the attendees felt confident that they could understand the ideas generated well enough to place their votes sensibly.

So, who were the winners? Well, I have resisted the temptation to say something trite like “we all were,” and instead would note first that this was not in any way a scientific survey, but it was an important first step toward bringing the research needs of cities into the national spotlight. Obviously a much more detailed approach could be used (at much expense, no doubt) to be more scientific, but for now we have the following information.

If we simply identify the top idea in each area, we find the following (see Table 2, with the ideas from the groups in the same order as in Table 1, and with votes for each idea noted in parentheses as in Table 1).

Table 3 shows other top vote getters—all those ideas not listed in Table 2 that got five votes or more. Again the votes are listed in parentheses behind each idea.

Some of the ideas on the list were not particularly surprising—given the harsh winter, material delivery issues were clearly at the front of many folks’ minds! Others reflect long-standing beefs (e.g., “stuck with low bid”) but also suggest need for some good guidance on how to write specifications that do not get you “stuck with the low bid.” Writing such specifications is not easy, but there would appear to be a need for it, and it might be worth investigating what could be done to meet that need.

A couple of the issues had not been raised on the national winter maintenance scene at all, and given the topics this is not surprising. Not many state DOTs will be worried about plowing cul-de-sacs after all, but they clearly pose significant problems for some municipalities and it may be that the appropriate design standards should be revisited with such issues in mind. And again, bike lanes are not often state-managed facilities but lots of cities are figuring out how to handle them in the wintertime. Good work has been done in this issue in Scandinavia and it would probably be a good idea to bring some of that work over to North America sooner rather than later.

Finally, an idea that has been discussed somewhat on the national level but appears to be much more important for municipalities than for states is the whole issue of succession planning and how to deal with an aging workforce. Three of the ideas in Tables 2 and 3 dealt with this topic (“aging out employees…” “succession planning” and “how do we capture the knowledge?”) and it is clear that it was a significant concern (made more real by the fact that one of the speakers was about to retire from his career in public works later that month…). Again, some guidance on this would obviously be well received.

So, what happens now? Well, this information will go in two directions. First, the APWA Winter Maintenance Subcommittee will look to next year’s agenda at the Snow Conference to try and address some of these identified needs. Perhaps we can find a way to bring an expert from Scandinavia to the show to tell us what they are doing with bike paths in the wintertime, for example. Second, the information was taken to the Winter Maintenance Technical Service Program steering committee meeting which took place just prior to the AASHTO Subcommittee on Maintenance Meeting in West Virginia in July. At that meeting, these new ideas joined others generated at the state level and started the process towards funding the research (which is often quite lengthy, but if you don’t start, you’ll never finish!). From there, well, we will have to wait and see, but we hope that this session will help make winter maintenance a bit easier in our municipalities going forward.

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<table>
<thead>
<tr>
<th>Top Vote Getters in Each Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aging out employees</strong> - The new generation, where will we find them (6)</td>
</tr>
<tr>
<td>Share storage regionally between adjacent villages (3)</td>
</tr>
<tr>
<td>Succession Planning (7)</td>
</tr>
<tr>
<td>Stuck with low bid (12)</td>
</tr>
<tr>
<td>Cul-de-sac design (homeowner snow storage) (turning radius) (8)</td>
</tr>
<tr>
<td>Historical Road condition/ temp database (5)</td>
</tr>
<tr>
<td>Material delivery issues in severe winters (13)</td>
</tr>
<tr>
<td>Standardization for GPS/ AVL hardware/software (5)</td>
</tr>
<tr>
<td>Find intelligent ways to analyze social media content for our use (6)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Additional Top Vote Getters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing to do things “the way we have always” “Doing it for 20 yrs” (5)</td>
</tr>
<tr>
<td>Leadership (6)</td>
</tr>
<tr>
<td>How do we capture the knowledge? (5)</td>
</tr>
<tr>
<td>Standardized contracts (5)</td>
</tr>
<tr>
<td>Parking regulations (6)</td>
</tr>
<tr>
<td>Bike lanes - snow operations (priorities) design/sweeping (6)</td>
</tr>
</tbody>
</table>

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**Table 2: Top Vote Getters in Each Area**

**Table 3: Other Top Vote Getters**
suppose we need to begin by defining a successful winter operation. Is it about efficiency, is it about safety, is it about performance, is it about methods, is it about budget, is it about sustainability, is it about innovation? Well, the answer to all of these is “yes.” The questions are, “Are we there, can we get there, and how can we determine our progress?”

Each agency is unique, and how progressive they are may not just be limited by budget, but often it lies with leadership, policies and lack of knowledge.

Many agencies are doing a good job, but if you ask them how they know, I believe they may struggle to prove they are doing a good job. The answer I most often receive is, “We do a really good job given the resources we have and the limitations with our budget.” This is common, and in public works we do not compare ourselves with one another because each agency has to determine for itself what level of
service it will provide, timelines to achieve those goals and how best to operate within its given resources. Location and typical weather also play into these decisions. That being said, we do have many model agencies that have achieved accolades for the programs they have built and the service they provide their customers.

So the question is, what do these programs look like and how did they get there? To start with, this is one case where size does not matter. We see examples from the smallest agencies to some of the largest in the world. In almost every successful case, I believe you will also find a “top down” as well as a “bottom up” approach. Agencies that want to be successful must realize that management needs to provide a vision; but it will be the staff’s program and they must be champions of it, or it will fail. Staff’s involvement and input is vital to making any program successful. Finding a champion in your agency is key to making this work.

I believe you can look at three main areas that successful agencies have in common: policies, programs and training. Within those three, there are many subcategories that we will discuss, but these serve as the basis of a good program.

Good policies are living documents that address public and staff expectations for winter roadway maintenance. When consistently followed they can be a means of determining if the agency is failing, meeting or exceeding its goals. Programs in these model agencies often deal with a proactive approach to winter maintenance and will incorporate best practices and technology. Nothing goes farther to improve a program than well-trained staff, and that means every area of winter maintenance. Staff must have a full understanding of not just “how” we do things, but “why” we do them. This knowledge base will cover everything from fundamentals of snowplowing, weather, policies, equipment operation and equipment maintenance to understanding chemicals and how to use them.

So how do you go about developing a program? It begins with an examination of what your current practices are and areas you may change or improve. There are many good examples of model agencies. APWA has a program for recognizing the best examples in winter maintenance and it is a good starting point. Check out the agencies that have been awarded the Excellence in Snow and Ice Control Award by visiting the APWA website. These are examples of agencies that have excelled in all areas of winter maintenance and have implemented best practices. They can be a benchmark to measure your own agency’s progress. Also, the APWA

The recipients of the 2014 APWA Excellence in Snow and Ice Control Awards
Winter Maintenance Subcommittee is made up of some of the best professionals in North America and they are always willing to help. There is plenty of information on the Internet as well. One of the best methods for gathering information is to attend a workshop or seminar. Not only is the content valuable but so is the networking with other attendees and vendors. Consulting reviews and peer reviews can also be a good method to evaluate your agency’s practices.

Next you must consider how to get from point A to point B. What program do I start? Where do we get the most benefit? In almost every case I would recommend small steps or pilots to begin. There are exceptions to this but in most situations one small success can lead to a much larger successful program. It also takes a champion within the agency to do the research, be willing to try and to share the success with others.

Regardless of what program or method it is decided to begin with, at the core of each is a basic understanding of winter roadway weather, pavement temperatures and how they affect every decision you will make. When deciding on new materials, new equipment or implementing new programs, a careful consideration should be given to weather resources and weather tools first. Purchasing equipment and trying to implement a program without good weather data can devastate the program. One example we can look at is anti-icing. Anti-icing is done by applying a treatment to a roadway prior to an event, and is generally done by using liquid chemicals. Weather predications, pavement temperatures and following proper procedures are vital to the success of anti-icing. Otherwise, instead of a proactive approach that benefits the road users,
an agency can, if done incorrectly, make a situation that could adversely impact road users or be completely ineffective in its purpose. The same holds true for other areas of winter maintenance such as when to dispatch the fleet, choosing the right chemicals given the pavement temperature, determining how much chemical to apply, determining when to reapply, and looking at how future conditions will affect the roadway and your staffing operations.

Weather forecasting that includes a pavement temperature forecast and real-time roadway conditions that can be drawn from an RWIS (Roadway Weather Information System) site are necessary tools to really be a successful winter program. Without them it is virtually impossible to make good educated decisions. These tools are not just for state DOTs and toll authorities; there are systems and products to fit every size agency and every budget.

So how do you fund a new program, new equipment and a new weather site? How do you sell the program to administration and staff? You should begin by seeking help. Do your research, talk to those who have done it before. Bring a good informed decision forward to your management and staff. In many cases what you may learn is that agencies have found some unique ways of funding these programs. Perhaps funds may be drawn from the project area instead of the general budget. Often in roadway projects, especially expansion projects, new staff, additional equipment and weather systems can be added as part of the project. This means Maintenance has to work with Design and Administration to show the impacts and make these an essential part of the project. New programs and upgrades to equipment can be done gradually and yearly success can be shown. When a positive result is produced it is generally much easier to expand the program and get continued funding and buy-in from elected officials.

One major change in the U.S. is the trend toward performance measurement (even in maintenance) and funding based on a performance standard. While this is most prominent at the state level we can anticipate it becoming a local issue as well. The other driving factor we have seen is the environmental concerns in the snow and ice industry. For these reasons, along with the budget benefits and the improved level of service to your customers, careful consideration should be given to evaluating your current approach to winter operations and implementing a change toward best practices. Soon yours will be the successful winter maintenance program that others are modeling after.

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The Valdez “Damalanche”

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In January 2014, the City of Valdez, Alaska, garnered national attention after a series of massive avalanches covered the only road into town, cutting off ground transportation to and from the city.

The coastal community of Valdez is located between Prince William Sound and the Chugach Mountains in Southcentral Alaska. Although the city’s nearly 4,000 residents were accustomed to small avalanches closing the highway for several hours, this incident was different. This was an event for the ages. The avalanches and subsequent flooding closed off Richardson Highway into Valdez for 12 days.

For the Alaska Department of Transportation and Public Facilities (ADOT&PF), the avalanche event presented a challenge unlike any it had seen before. The avalanche debris field covered a couple thousand feet of the highway in snow 40 to 140 feet deep. It also blocked off the nearby...
Lowe River, which dammed up, creating a lake more than a half-mile long, 30 feet deep and containing an estimated 500 million to 1 billion gallons of water. The lake prevented access to the debris field from the north and the dam was too dangerous to access from the south. On top of the access problem, there was still danger from above as the avalanche areas remained unstable and active.

Leading up to this incident, the winter of 2013-2014 had been an unusual one with conditions ripe for avalanches. While the contiguous United States saw severe cold and abnormally high levels of snow, Alaska was experiencing its warmest winter on record with temperatures as high as 40°F above normal. By mid-January, snow turned into rain in Valdez. Concerned with these conditions, ADOT&PF had performed avalanche mitigation efforts several times in the area up to 10 days before the first avalanches occurred.

The primary avalanche, which was classified as a Category 5—the largest and most powerful kind—fell about 6:30 a.m. Jan. 24 in Keystone Canyon, about 16 miles north of the City of Valdez. In the days following this event, several more avalanches fell in the area between the canyon and Thompson Pass to the north, leading the department to close 52 miles of roadway that initial weekend.

Because of its timing, no one was injured by the primary avalanche, though it covered several sections of the highway. An ADOT&PF employee traveling during a morning call missed the first avalanche by minutes. A tractor-trailer driver caught between the massive avalanche in Keystone Canyon.
Canyon and another avalanche in the area needed to be rescued.

The City of Valdez was equipped to ride out the highway closure. Stores were well-stocked with supplies when the incident happened. Although ground transportation to the community was cut off, air and ferry service remained available. To accommodate the increase of residents needing these services, more flights into and out of Valdez were added, as well as additional service from the Alaska Marine Highway System. Still, ADOT&PF needed to reopen the highway as quickly as it safely could. Unfortunately, because the snow debris could not be approached from the north because of the lake and the south due to the dam, the department had to wait for the water to find its way out of the avalanche dam before it began removing snow from the roadway.

Challenges included more than just removing the snow. The danger of additional slides remained. To mitigate the possibility of additional avalanches, department staff shot and dropped more explosives in the avalanche zone. More avalanches still occurred despite these efforts.

Once the water went down Jan. 31, a week after the initial event, ADOT&PF began snow removal efforts. The department drew manpower from a contractor and state workers from across Alaska. These crews worked from both ends of the avalanche zone 24/7 for five days to remove as much as 200,000 cubic yards of snow. Crews utilized a variety of equipment to accomplish this, including excavators, dozers, loaders and haul trucks. Working on snow presented its own challenge, versus working on stable
surfaces such as road or dirt. Workers had to take extra care that their equipment was stable.

The Richardson Highway was spared damage from the avalanches with only guardrail needing to be repaired later in the year. On Feb. 5, 13 days after the initial avalanches, the department reopened the highway, declaring it safe for travel. It took 1,056 man-hours to reopen the road.

Although the massive avalanche event was unprecedented in magnitude, ADOT&PF was well prepared to handle it, drawing from years of experience in avalanche mitigation. These mitigation efforts occur each year over 160 avalanche paths along some 155 miles of highway, so the department is no stranger to cleaning large amounts of snow and debris from roadways. Most of the avalanche paths are located on the Seward Highway, but the Thompson Pass area leading to Valdez has 12 paths over 60 miles.

As part of its avalanche mitigation efforts, ADOT&PF uses 105mm howitzers and 105mm recoilless rifles to attempt to trigger avalanches during planned road closures. This program has a success rate of just over 50 percent. This means just more than half of significant avalanches—those with a snow depth of 10 feet or more—are triggered and fewer than half occur naturally.

During the Keystone Canyon event, the department also had an invaluable asset in the support and cooperation of the City of Valdez, the Alaska State Troopers, Valdez police, and many more state and private agencies. This support, combined with the department’s preparation and experience and the hard work of crew members, was critical in helping ADOT&PF reopen the highway safely and quickly after such an extreme event.

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Streets of yesterday becoming multi-modal

Pat Kennedy, P.E., Engineering Supervisor, City and County of Denver, Colorado; Mike Kennedy, P.E., Director of Transportation Maintenance and Repair, City of Minneapolis, Minnesota, and member, APWA Winter Maintenance Subcommittee

The snow response professional of today has more to consider than simply plowing street lanes clear of snow and ice during winter events. The streets of yesterday are becoming multi-modal corridors with dedicated and shared bike lanes, adjacent pedestrian paths, mass transit use and ADA accessibility needs. These alternative transit modes have different and sometimes conflicting snow response needs that must be considered in snow operations planning.

On-street bicycle lanes are increasing at a rapid pace in cities across the country. Minneapolis and Denver both have a growing network of vertically separated bike lanes (cycle tracks) that provide safer paths for bicyclists, but also pose challenges for snow and ice control. These lanes typically are narrow and standard tandem plows will not fit into the space. This requires the use of alternative equipment for both plowing and sweeping operations. It could be as simple as equipping skid

Vertically separated bike lane in Minneapolis (lane is between parking and sidewalk showing difficult nature of clearing snow)
steers with plow blades, blowers or incorporation of specialized small plow and sweeper units into an agency fleet. Costs for winter services may double or triple due to the fact that return trips for slower and more costly physical snow removal operations after the initial plowing and treating passes are made. In any case, there is a workforce need that usually exceeds what would typically be used for street plowing operations. This brings increased capital equipment and labor costs.

Even those bike lanes that do not have a physical barrier can pose a challenge to snow response. Snow storage that allows for fully cleared lanes minimizes loss of on-street parking, and that which does not adversely impact drainage of melt water is impacted when available pavement area is used for striped bike lanes. It becomes difficult to find space to store snow and some agencies are now forced to haul snow to offsite storage facilities. As with protected or barrier separated lanes, snow response costs increase dramatically if actual removal operations are performed, and storage sites often need water quality facilities to clean the melt water before it enters waterways.

Mass transit, whether rail or bus, will have stops that pose additional challenges. Windrows (berms) of snow along the curb lines of the streets at these stops can create significant impediments to transit users, and must be completely cleared along with large areas of pedestrian zones to provide optimal results. As with bike lanes, the problem of where to store snow from the aggregate large areas becomes a challenge.

It varies across the nation as to who is responsible for clearing sidewalks and when that must occur. Aside from the issues on who would meet a timely need, facilities such as pedestrian bridges or other large-scale facilities can be problematic for where snow is deposited and what equipment and strategies can be used. Snow cannot be simply thrown off bridges onto underlyings streets or waterways so it must be pulled back off the bridge or pushed to one side to allow for a narrower travel path. In the worst cases, if winter maintenance was not adequately considered in the design process, it is impossible on many bridges or bike paths to get equipment into the cramped quarters resulting in the need for labor-intensive handwork, or return trips with different equipment.

Accessibility for all citizens is an important component of urban travel. Pedestrian ramps at street crossings are one of the links that enable full connectivity for pedestrian traffic. Plow drivers and managers, who are faced with the conundrum of completing operations within reasonable timeframes and in a cost-effective manner, have to balance street clearing operations with pedestrian access at sidewalk intersections, without unduly sacrificing productivity or increasing costs. This often creates a conflict with the party responsible for keeping the sidewalk intersection clear. Lack of appropriate attention to either can lead to poor overall results and inadequate service delivery.

The various users of the public transportation infrastructure may have competing interests and differing
desired levels of service, or at least different priorities of how finite financial resources are allocated. More and more, cycling commuters do not store their bikes for the winter. They can switch to snow tires like the motorists and continue to hit the streets. The results of standard snow and ice control procedures will differ for vehicle lanes and on-street bike lanes on the same pavement. Plows will often leave a thin layer of slush that automotive traffic will disperse (or even push into the bike lanes), but in bicycle lanes, that slush will remain and refreeze resulting in a perceived difference in service levels. Cyclists demand that bike lanes appear to have an equivalent level of service that can only be provided at an increased cost due to repeat passes or treatments. The location of on-street lanes may also necessitate costly removal operations in order to provide access all winter, particularly when located adjacent to curb where windrows will encroach into the lanes for required snow storage.

Educating the public and policy makers of the level of service available is a key component to multi-modal snow response. Early consideration in design and realistic expectations regarding additional costs required for respective levels of service are critical toward the successful implementation of new facilities and initiatives. Or at least, policy makers, designers and advocates for multi-modal facilities must be made aware of the consequences of building these facilities without adequate design considerations or long-term funding for the additional winter maintenance realities and costs. Expected response times, degree of clearing, post-storm cleanup, and shifting of travel lanes are all components that should be addressed. However, it is also the responsibility of winter maintenance professionals to understand that the increasing interest in multi-modal options is real and not likely to change soon, so it is their responsibility to be part of the solution and work toward innovative ways to provide optimal winter maintenance services, or at least be at the table to help policy makers and advocates make informed and realistic decisions when considering alternatives.

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Automated Vehicle Location and Maintenance Decision Support System project

Tim Croze, P.E.
Region Support Engineer
Michigan Department of Transportation, Lansing, Michigan
Member, APWA Winter Maintenance Subcommittee

Automated Vehicle Location (AVL) is a means of managing a fleet of vehicles using a global positioning system (GPS). Already in widespread use in the transit, trucking, and emergency response communities, AVL has recently been applied to winter maintenance operations. The goals encompass improving agency efficiency, reducing material usage and decreasing the time spent reporting labor, material and equipment usage. AVL systems allow a manager to monitor the location of fleet vehicles at any given time and can be a resource management system for managing labor, equipment and materials used for various roadway maintenance functions. In addition to knowing a vehicle’s location, a robust AVL system is capable of capturing and reporting operational data from a snowplow’s on-board systems such as a DICKEY-john material controller, as well as other data, including material application rates, air and pavement temperature, and the position of blades and plows. The AVL/GPS and other operational data is displayed in near-real time on a website and also stored for future reporting and data analysis. Michigan Department of Transportation (MDOT) recently began integrating AVL into its winter maintenance fleet.

MDSS

The operational data collected by MDOT’s AVL system is processed and automatically fed into a Maintenance Decision Support System (MDSS). The

![AVL website showing images taken from WMT with camera installed](image-url)
goal of MDSS is to provide a decision-support tool for MDOT staff involved in winter maintenance operations. MDSS is used by at least 15 states across the nation. It is a tool that provides location-specific weather forecasts along snowplow routes and predicts how road conditions will change due to forecasted weather. The system recommends the most effective maintenance treatments and application rates and suggested times to apply material to maximize its effectiveness for the snowplow operators. These route-specific treatment recommendations are provided to maintenance garage supervisors on a website as well as transmitted directly to a screen for plow operators to view in near-real time.

The snowplow route treatment recommendations are based on the following information:

- Material type and application rate based on current and predicted weather conditions
- Desired level of service
- Operational limitations
- Type and thickness of pavement materials

The main impetus behind MDOT’s AVL/GPS/MDSS implementation is to provide a tool that will allow maintenance garage supervisors to make more informed decisions on how best to attack an incoming storm using real-time operational data, current and forecasted weather information and scientific models that predict how the forecasted weather will affect road conditions.

**Project Implementation**

MDOT is not the first agency to utilize AVL technology and MDSS services to manage its fleet and winter operations. However, MDOT’s contracting approach, scale of implementation, and accelerated timeframe for initial rollout offers a unique model, which can aid other state or local agencies that wish to leverage the benefits that AVL and MDSS services can provide.

MDOT management determined that the best contracting approach for these types of integrated services is to write the Request for Proposal (RFP) language to be all-encompassing.
This means one contract is executed to meet all of the project needs. The RFP that was written and advertised included:

- AVL equipment and services necessary for MDOT’s Winter Maintenance Trucks
- AVL equipment for MDOT’s light fleet
- All necessary communication services
- Management and storage of all data collected
- Statewide MDSS services
- Training for MDOT staff

Under this all-encompassing contract, MDOT works directly with one vendor who is responsible for providing all equipment, securing cellular communications services, and coordinating resources to meet the needs for both AVL and MDSS mapping and reporting. The installation of AVL equipment is performed by MDOT mechanics that have been trained by the vendor.

The schedule for this project has been aggressive, but successful so far. In May 2013, MDOT’s executive leadership authorized funds and gave approval to issue an RFP for the procurement of a comprehensive AVL and MDSS solution for MDOT. The RFP was advertised in June 2013, and a signed contract was executed by mid-September, 2013. As of March 2014 AVL units and auxiliary sensors had been installed on MDOT’s fleet of 270 snowplows. The AVL and MDSS were commissioned on November 15, 2013 and utilized all winter long by MDOT staff. Even though the systems are new to the department and not all snowplows were instrumented with AVL before the winter started there are many anecdotal examples where the MDSS has saved MDOT manpower and money.

A comprehensive cost/benefit analysis of the AVL/MDSS deployment project will be completed after MDOT has had a full winter season with these technologies.

Tim Croze can be reached at (517) 322-3394 or crozet@michigan.gov.

The Michigan Department of Transportation won an award for this project at the 2014 Intelligent Transport Systems (ITS) World Congress. The award was for “Best New Innovative Practice – Sustainability in Transportation” and more information can be found at http://itsworldcongress.org/awards/.
Outsourcing snow removal operations in Montreal

Michel Frenette  
Engineer  
City of Montreal, Québec  
APWA Delegate, Québec Chapter

The City of Montreal has a population of 1,650,000 people, 2,550 miles (4100 km) of streets and 4,000 miles (6500 km) of sidewalks. In winter, the average temperature is 19 degrees F (-7 C) and the annual snow precipitation is 90 inches.

To maintain the socio-economical rhythm, the City has to clear the streets and sidewalks during the entire winter season. To do so, the City of Montreal has always outsourced some winter operations. The Montreal territory is divided into some 120 sectors, and about half of them are done by contractors, through turnkey contracts. The contractors must be equipped for snowplowing and snow removal operations.

The following text describes the key elements of these contracts.

The territory of the contract
Each contract is mostly a rectangular area limited by four streets, and containing about 20 miles of streets (regardless of the number of lanes) and 35-40 miles of sidewalks. Of these 20 miles, about 25% are main streets (arterials) and the rest is composed of collectors and local streets.

The work to do
The duties of the Contractor are:

Snowplowing: he must clear the sidewalks and streets as soon as the accumulation of snow reaches one inch. The operations must continue until the precipitation is finished. Then he gets four hours to complete the plowing operation. The snow is pushed towards the curb or towards the parked cars. An average winter includes about 15 snowplowing interventions which may last from four hours to 24 hours.

Snow removal operations: if the windrows hinder parking and driving, the City will require a snow removal operation. The Contractor will then have to load the snow into trucks using snow blowers and haul it to a predetermined snow disposal site. All the streets and sidewalks of his territory must be free of snow within four or five days, depending on the precipitation received. Included in this major intervention by the Contractor are the panel posting activities to warn citizens not to park their cars in the streets, and the displacement of cars that, unfortunately, may have been left by citizens. This latter operation will require vehicle towings. An average winter requires five snow removal operations.

The equipment required
The book of specifications requires the following equipment, which must be the property of the Contractor: one snow blower, three power graders, three trucks equipped with plows, one front end loader and four sidewalks vehicles (with or without tracks). Also, the Contractor is required to provide all the trucks needed for snow hauling and the towings to remove cars that were left. There is no need for the
Contractor to own the snow hauling and towing equipment as he may choose to subcontract this portion of the work.

Payments
The Contractor is paid according to the number of inches of snow that falls during the period from November 15th to March 31st. His bid is based on an annual precipitation of 80 inches, and the total amount that will be paid to him is adjusted with the precipitation: 1% more per extra inch, 1% less per inch under 80 inches. For instance, let’s say that his 20-miles contract is at $600,000 for 80 inches. He will be paid $606,000 if the accumulation ends up at 81 inches. The City guarantees 40 inches each winter.

The information on the snow accumulation comes from the Pierre-Elliott Trudeau Airport in Montreal, and is confirmed by Environment Canada.

The Contractor receives six payments each winter.

Penalties
Should the Contractor not comply with the specifications, he is fined. For instance, if he doesn’t intervene as soon as the snow accumulation reaches one inch, he will receive a $2,000 fine. If he goes over the time frame allowed for snow removal, he will receive a penalty corresponding to $2,000 per hour of delay.

If the Contractor accumulates penalties and does a very bad job, the City also has the authority to cease the contract or ask the insurance company who covers the Contractor to take over. It would also be the case if the Contractor goes bankrupt.

Call for tenders
The some 60 sectors awarded to contractors are mostly five-year contracts. Each year, there is an average number of 12 sectors that go for bidding. The Contractor interested in a particular sector will get the book of specification, read the specs, and see the characteristics of the sector (length in miles, maximum size of truck to be used, snow disposal site assigned and distance to it, etc.). He must bid taking into consideration
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November 2014 APWA Reporter 53

a precipitation of 80 inches of snow between November 15 and March 31. His proposal must be composed of these documents:

• his name, address, company, and other contact information;
• his commitment to do the work with respect to the specifications;
• his bid for the sector, for an accumulation of snow of 80 inches;
• the commitment from an insurance company (bond) to insure him, should the contract be awarded to him;
• two certified checks in the amount of $27,000 and $25,000;
• an attestation that he is representing the company.

At the time of the proposal, the Contractor doesn’t have to prove that he owns the vehicles required by the contract.

The $27,000 amount is kept by the City until the end of the contract, five years later. Then, it is returned to the Contractor, unless he has accumulated some faults that the City has to pay for (example: he broke a fence and a citizen asks the City to fix it). The $25,000 amount is returned to him if, within 30 days after the contract has been awarded to him, he proves that he owns the vehicles needed to do the job.

Following and evaluating the job done
During snowplowing or snow removal operations, City employees (foremen) follow the job done by contractors. Usually, a foreman will follow two contractors at a time, should the operations be done at night or day time. These foremen have all the authority to ask the contractor to replow a street, can change the priorities, and can impose penalties.

Conclusion
The turnkey contracts give the total responsibility to the Contractors, with the minimum number of interventions from the City. City’s foremen don’t have to count the number of hours for each piece of equipment. They don’t have to build snowplowing or snow removal teams, and the payments are related to the number of inches of snow fallen.

The 50-50% sharing between the private and municipal sectors takes into account the capacity of the City, considering the manpower and fleet of vehicles.

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Response to Question: Chris Davies, Public Works Director, Lewiston, ID had asked for suggestions as to how to handle requests for getting some of their businesses “connected” to fiber optics. Lewiston did not have a plan in place to accommodate these requests. I asked for any suggestions you, the readers, might have that I could share. Dick Ransom, an APWA Life Member, offered some great information about a policy he assisted in developing while City Engineer in Cedar Rapids, IA. The City adopted a policy that required the private utility offering to provide the connecting service to submit a plan and receive approval from the City Council by resolution which incorporated a number of conditions that had to be agreed to in advance. Some of the conditions included: The applicant would have to relocate, remove or protect their planned installation; they were required to enroll in the One Call system and register their installation; they had to agree to hold the City harmless for any damages their installation might cause as well as any damages they might have as a result of their installation being in the City right-of-way; they would be required to relocate or protect their utility at their expense in order to accommodate the activities of a franchised utility operation in the right-of-way they planned to occupy; and they were required to submit a plan showing the location and the type of facility they were planning to install that needed to be approved by the public works department. “By following this process we were able to successfully accommodate the private facilities within the right-of-way and help the businesses and organizations that needed to be ‘connected’,” reported Mr. Ransom. Thanks, Dick, for the great suggestion.

Q “It’s been a while since we’ve had our red light cameras in operation and we are still having numerous complaints about the tickets. Appeal hearings are bigger than ever and it seems fewer are paying the fines. Is anyone having good success?”

A Your agency isn’t the only one. Some have taken them out immediately. Others have had lawsuits filed and appealed to the State Supreme Court because of poorly written legislation or ordinances. Others have made lots of money. While visiting Fort Worth, TX for their Accreditation Site Visit recently, the Transportation Department shared they are removing their red light cameras because they had been so successful in reducing the number of accidents for a significant amount of time they were no longer necessary. Now that’s a real success story. If there are others who have enjoyed the same success, please let me know and I will share them with others.

Q “We are preparing to build a new facility in one of our parks and our City Council wants us to have it meet the LEED standards. We are just a small agency and I don’t see how we can make that happen. Do you know anyone with a population of less than 25,000 who has done so?”

A I do happen to know of one! Last week we completed our Site Visit to the Town of Garner, NC. During our tour of their facilities and community, we enjoyed seeing a new building in their White Deer Park that was built to meet the LEED Silver standards. The facility is designed to catch the rainfall to utilize it for flushing the toilets and there are numerous other highlights of the facility that you might enjoy checking out. You might contact Kip McClary at the Town of Garner, if you would like more details.

Q “We continue to search out ways to reduce the amount of waste we generate for the landfill at our fleet facility. Any tips out there that might help us in doing so?”

A Gary Lentsch, Eugene Water & Electric Board, Eugene, OR was looking to do something similar. Thousands of pounds of floor dry and absorbent pads were being used to clean up oil
and coolant spills in their shop area only to be sent to the landfill. Lentsch determined to make the shop more environmentally friendly and to find a better way to clean up spills. He and his staff researched an air-powered wet material vacuum cleaner to clean up spills. It was a 55-gallon tank vacuum cleaner that cleaned the floors immediately. When the tanks were full, staff members dumped the liquids into appropriate containers for disposal or recycling. The results of their experiment appeared to be mainly environmental in nature. Absorbent pads and floor dry are prevented from entering the landfill. It’s faster to use, since the technicians don’t have to wait for the floor dry to dry, and there are no trip hazards or tracking such as when someone steps on floor dry. The materials picked up by the vacuums are disposed in the fleet’s used oil and coolant tank and sludge is sent through the truck wash recycler for zero waste. Sounds like it might be well worth experimenting with one vacuum first to determine if it meets your needs. Lentsch suggests that, depending on the size of your shop and number of mechanics you have, it might be a good idea to have a couple throughout the shop in different areas. You might like to contact Gary Lentsch at Gary.Lentsch@EWEB.org. Let me know if you try this and how it works for you.
# EDUCATION CALENDAR

For more information about these programs or to register online, visit [www.apwa.net/Education](http://www.apwa.net/Education).

Program information will be updated as it becomes available. Questions? Call the Professional Development Department at **1-800-848-APWA**.

### 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>November 13</td>
<td>Public Works Senior Leaders Talk About Traffic Incident Management</td>
</tr>
<tr>
<td>December 4</td>
<td>Sharpen Your Executive Soft Skills – Part 2</td>
</tr>
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### 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>January 26-30</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>March 23-26</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>April 12-15</td>
<td><strong>2015 North American Snow Conference, DeVos Place, Grand Rapids, MI</strong></td>
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<tr>
<td>May 11-15</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
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<tr>
<td>July 13-17</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
</tr>
<tr>
<td>August 30 - September 2</td>
<td><strong>2015 Congress, Phoenix Convention Center, Phoenix, AZ</strong></td>
</tr>
<tr>
<td>September 14-18</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
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<tr>
<td>November 16-20</td>
<td>CSM, CPII and CPFP Certification Exams (computer-based testing)</td>
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- = 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/)
ClearSpan visits neighbor to the north

Marc Zirolli
Advertising & PR Specialist
ClearSpan Fabric Structures
South Windsor, Connecticut

As the summer begins to wind down, tradeshows start to pick up again at ClearSpan Fabric Structures. As the industry leader in tension fabric buildings and the preferred choice for sand and salt storage and more, ClearSpan spends a lot of time on the road meeting new and potential customers.

In August, the company traveled to Toronto, Canada’s second-largest city, to take part in its latest business venture, kicking off a very busy early-autumn schedule. This excursion abroad was for the annual APWA International Public Works Congress & Exposition, the “Best Show in Public Works.”

This was an opportunity for ClearSpan to further expand its fabric footprint in Canada, and they met with several public works professionals and various municipal engineers from provinces such as Ontario, Saskatchewan, Manitoba, Nova Scotia, Québec and New Brunswick. During the three-day exposition at the Metro Toronto Convention Centre, the company engaged in several potential new opportunities for its line of Hercules Truss Arch Buildings, from sand and salt storage to manure compost buildings to wastewater sludge beds.

After a return trip to ClearSpan’s home offices in South Windsor, Conn., the company shifted its focus to other industry trade shows in September, which were held in Texas and Nevada. ClearSpan has already committed to attend the annual APWA Congress & Exposition in 2015, scheduled to take place Aug. 30–Sept. 1 in Phoenix, Arizona.

ClearSpan Fabric Structures, the industry leader in tension fabric buildings, provides design-build solutions for sand and salt storage and more. ClearSpan buildings feature abundant natural light and spacious interiors without internal support posts. With minimal foundation requirements, the structures can be permanent or temporary and are easy to relocate. Made in the USA, they can be built to any length and up to 300’ wide. For more information, please call 1-866-643-1010 or visit www.ClearSpan.com/ADAPWA.
Products in the News

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.

Sewer Bypass Pumps

Griffin offers an ever-increasing line of pumps to fit nearly any bypass application. Whether it be above-ground diesel-driven pumps, above-ground self-priming diesel, hydraulic-driven submersible pumps, or electric-driven submersible trash pumps, Griffin can provide a pump to fit your bypass pumping need. If we do not have a pump in our standard line, Griffin will build a pump to fit your municipality’s need. Griffin’s exclusive installations and experience guarantee a quality pump and system for applications from a few gallons to several thousands of gallons per minute per pump. Pumps from as small as 2” up to 24” are readily available. Call 713-671-7000, visit www.griffinpump.com, or send e-mail to gpe@griffinpump.com.

Python 5000 from SuperiorRoads

The Python 5000 from SuperiorRoads is a self-contained unit designed to repair long cracks in the road and fill potholes before they grow into big problems. It travels quickly to the job site, where it prepares the pothole, fills it with asphalt and then compacts it into a long-lasting patch that will outlast the surrounding road. The operator stays safely in the cab, out of dangerous traffic. It can be used in nearly all weather, and allows operators in even the coldest climates to get out and repair potholes as soon as the snow starts melting. For more information, visit www.SuperiorRoads.com.

Portable Bench Scale provides onsite weighing capability

A portable, battery-powered bench scale that is legal-for-trade and ideal for applications from a truck such as weighing refrigerant tanks or transformer oil is available from Alliance Scale, Inc. of Canton, Massachusetts. The Alliance/CAS PB Series Portable Bench Scale is ideally suited for field weighing applications because it is legal-for-trade and connects to receipt printers and other devices. Featuring a large 6-digit LCD display which is detachable for easy
viewing, this scale weighs just 14.5 lbs. and comes in 150-, 300-, and 500 lbs. capacities, with 1/3000 external resolution. For more information, call (800) 343-6802 or visit www.alliancescale.com.

**Turn on the EV “switch” and start saving with Proterra’s Next Generation Bus**

With better fuel efficiency and fewer routine maintenance needs than diesel and CNG, **Proterra’s next generation 40-foot EV bus** offers the lowest total cost of ownership of any bus on the market today. Transit agencies across the country have chosen Proterra’s zero-emission buses, enjoying more predictable and significantly reduced operating expenses. A win for the bottom line and the environment, American-made Proterra buses are the only full-size battery-electric buses to pass Altoona testing and the only brand of EV bus currently in revenue service in the U.S. To learn how Proterra is leading the charge in transforming transit, visit www.proterra.com.

**Giken Press-In Method**

When the Ventura County Watershed Protection District (VCWPD) needed a **pile driver** to increase the flow capacity of a drain to accommodate runoff in the event of a 100-year storm, the Department turned to the **Giken Press-In Piling Method**. The machinery’s emission of low noise and practically no vibration was a key consideration due to the project’s close proximity of residences, critical infrastructure at the Oxnard Wastewater Treatment Plant, and precision industrial processes. Giken chose to highlight VCWPD’s project to showcase the advantages of this innovative method to contractors, engineers, and agencies in Southern California. For more information, visit www.giken.com/en/.

**New ACE Torwel Economizer dual-motor 12V electric spreaders**

ACE Torwel, Inc.’s snow and ice management division recently announced its **Economizer dual-motor 12V electric pick-up truck spreaders**. With spreader wireless control, operate two motors independently with variable speed conveyor and spinner disk for precise rate and pattern control. Easily take care of sensitive accounts at night without noisy vibrator noise disturbing your customers. ACE Torwel’s improved Economizer dual-motor electric V-box spreaders are lightweight and feature stainless steel or painted 14-gauge steel construction. Operators can easily control the flow of material with an in-the-cab wireless control panel that features stop, start, variable conveyor speed, and variable spinner disk speed. For more information, please visit www.aspphaltace.com or www.acetorwel.com or call 800-225-9415.

**Handheld’s NAUTIZ X4 rugged computer for the mobile worker now also with Android**

**Handheld Group**, a leading manufacturer of rugged mobile computers, has announced an upgrade of the **Nautiz X4 rugged handheld**, which was launched earlier this year. The Nautiz X4, a multipurpose compact handheld computer built for the mobile worker, now also runs Android 4.2 which gives customers a wider choice of operating systems. Measuring only 156 x 74 x 25.5 millimeters (6.1 x 2.9 x 1.0 inches) and weighing a mere 330 grams (11.6 ounces), the Nautiz X4 features a high-brightness, sunlight-readable resistive touchscreen for reliable computing in challenging worksite environments, and comes complete with either a high-performance 1D laser scanner or a 2D imager for super-fast and accurate scanning and barcoding tasks. For more information, please see www.handheldgroup.com.
Fresh Micro Market offers a convenient solution for offices without cafeterias

Studies have shown that healthy workers are engaged workers, and engaged workers make for high-performance levels in organizations. In addition, healthy workers are also more personally fulfilled, which also affects performance. That is why Fresh Healthy Vending International, Inc., created the Fresh Micro Market (www.freshmicromarket.com). Built to efficiently deliver healthy, chef-made snacks, beverages and meals to employees, this makes it the perfect complement to any workplace. Unique in its clean and modern design, the Fresh Micro Market is similar to an in-house convenience store, as it offers a wide variety of payment options and eliminates the common “stuck-in-machine” effect that can be frustrating in an office setting. Health is here!

McMahon Associates, Inc. ensures traffic and parking are smooth operations as the PPL Center opens in Allentown

McMahon Associates, Inc., a full-service transportation engineering and planning firm with over 38 years of service, is proud to have played a vital role in helping the City of Allentown prepare for thousands of new patrons visiting its long-anticipated PPL Center Arena, home of the Lehigh Valley Phantoms (AHL Hockey) and major headlining musical acts, which opened on Friday, September 12, to glowing reviews. McMahon completed an Overall Event Management Plan, which included a Mobility Plan and Traffic Control Plan, to provide for smooth traffic flow for arrivals and departures to the city, accommodate multi-modal transportation by promoting pedestrian traffic, and provide an opportunity for extended visits by patrons before and after each event at the PPL Center. More about McMahon’s ITS/Traffic Signal expertise can be found at the following link: www.mcmahonassociates.com/whatwedo-signals.aspx.

Crompion International: Specialty stainless solutions for the next generation

Corrosion is the primary foe of snow removal tools in cold climates, especially salt spreaders. Crompion International, a specialty stainless solutions provider for the salt spreader industry, has unveiled next generation materials to battle corrosion and abrasion, reducing routine maintenance of this key snow removal tool. Cromgard C12 was designed to combat the corrosiveness of snow and salt, as well as improve snow tool aesthetics. The material has been used successfully by a variety of salt spreader companies. For locations with specific snow-related corrosion issues, Crompion International’s specialized technical staff will provide consultation for further Cromgard options and customized applications. For more information, please visit www.crompion.com or call (225) 343-4219.

Capital Forecast Software

In the capital planning process, having tools to evaluate building condition and prioritize investment is key. You need to identify where repairs and replacements are required, accurately calculate costs and then prioritize projects. Capital Forecast by FacilityDude provides easy access to an inventory of structures and assets along with a record of their age and condition. This powerful modeling tool lets you assess what needs to be done and determine what will likely prove a better return-on-investment. Capital Forecast integrates with FacilityDude’s CMMS, MaintenanceEdge, to bridge the gap between capital planning and operational maintenance to enhance overall facility management capabilities. For more information, please visit www.facilitydude.com.
Tindale Oliver introduces new corporate brand and mission

Tindale Oliver, a planning, design, and engineering firm headquartered in Tampa, is pleased to announce a new corporate brand and mission. Reflecting the recent expansion and growth of the company as well as an enhanced vision for the future, the rebranding was launched to coincide with the firm’s 25th anniversary and features a fresher and more modern logo, a redefined mission, a more comprehensive website, and new client materials. The company name also has been adapted to Tindale Oliver (previously Tindale-Oliver & Associates, Inc.). The rebranding process, led by the Tampa design firm of Schifino Lee, took a year to complete and included input from employees and clients across the U.S. Please visit www.tindaleoliver.com to view the new brand and mission.

Differential Pressure Transducers for Class I Division 1 / 2 Hazardous Locations

American Sensor Technologies, Inc. (AST) has released explosion proof and non-incendive versions of its differential pressure transducer model AST5400. This addition compliments AST’s other products in the hazardous location market. AST added CSA certifications for Class I Division 1 and Class I Division 2 to the product series in order to satisfy market demands for differential pressure measurement. The product is capable of measuring line pressures up to 5,000 PSI (350 bar), providing an output signal of analog voltage or 4-20mA. Bidirectional calibration is available. Sensor material options include 316L stainless steel, Inconel 718, and Hastelloy C276. Industries include well sites and compression equipment. The AST5400 product family will give engineers the opportunity for lower cost, high-performance measurement for applications such as monitoring filters or dryers, ensuring flow, or calculating torque. For more information, visit: http://www.astensors.com/differential_pressure_sensors/AST5400.

Extremely powerful new combination truck excels in difficult cleaning situations

An immensely powerful new combination truck, designed to effectively remove sand, grit and other debris in extremely difficult cleaning situations, has been introduced by Polston Applied Technologies, headquartered in Sarasota, Florida. Deemed the PAT 360-HD, the new truck is a multi-purpose cleaning truck that utilizes the Polston Process® and Polston’s coined COMBINATION 3 technology (a unique combination of jetter, vacuum and downhole pump) to provide a complete, stand-alone cleaning system for large diameter lines, digesters, grit chambers, lift stations, water treatment plants, ponds, lagoons, and other hard-to-clean environments. For more information on the new Polston PAT 360-HD COMBINATION 3 Truck and the proprietary Polston Process®, call Toll-Free (844) POLSTON or visit www.PolstonProcess.com.

Horizons upgrade takes asset management to next level

Yotta has released a major upgrade of its Horizons visualized asset management platform. Featuring a wealth of new functionality, the latest release has been driven by customer feedback and includes new analytical tools, improved highly flexible user access control and a new reporting engine. Horizons is a web-based platform designed to help highways professionals visualize, manage and optimize all their asset management strategies and records under a single cloud-based solution. New functionality included within the Horizons upgrade includes the ability for users to break free from the constraints of their existing networks and redefine section lengths to create super sections for the purposes of better identifying scheme maintenance. Version 2.5 of Horizons also allows for improved user access control; user groups based on location and or function can be created and private layers created and shared as required. To find out more, please visit www.yotta-us.com.
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Always the third full week in May. For more information, contact Jon Dilley at (800) 848-APWA or send e-mail to jdilley@apwa.net.

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Accela, p. BC  www.accela.com

Camosy Construction, p. 63  www.camosy.com

Cargill Deicing, p. 13  www.cargilldeicing.com

Carolina Contractor Highway and Public Works Expo, p. 62  www.carolinacontractorhighwayandpublicworksexpo.com


Commercial Vehicle Group, p. IFC  www.cvgrp.com

Construction Accessories, Inc., p. 62  www.jackjaw.com

DOGIPOT, p. 63  www.DOGIPOT.com

Gateway Industrial Products, p. 37  www.gatewayindustrial.com

Griffin Pump & Equipment, pp. 23, 62  www.griffinpump.com

GVM Snow Equipment, pp. 39, 62  www.gvmsnow.com

Henderson Manufacturing, p. 41  www.hendersonproducts.com

Henke Manufacturing, pp. 21, 63  www.henkemfg.com

National Truck Equipment Association, p. IBC  www.NTEA.com

Precision Concrete Cutting, p. 63  www.SafeSidewalks.com

RHOMAR Industries, Inc., p. 47  www.rhomar.com

SnapTite, p. 63  www.culvertrehab.com

Trackless Vehicles LTD, p. 43  www.tracklessvehicles.com

TYMCO International LTD, p. 14  www.tymco.com

Vaisala, Inc., p. 43  www.vaisala.com/roads
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